Table of Contents

1.0   Introduction

This purpose of this document is to provide definition for the protocol interface used to command and interact with an R8000 Series Communications System Analyzer. The field description section of this document is subject to change and may vary between system versions.

2.0   Conventions

The following conventions are used herein:

Command strings are **bold** text
Response strings are *bold italicized green* text.

3.0   Requirements

The monitor and control (M&C) connection requires a cross-over Ethernet cable connected over a direct local network via TCP port **4000**. The interface is not currently available over a routed connection.

4.0   Network Security Issues

In order to enable the use of the monitor and control protocol, the R8000 must have its network settings configured. **The user should be aware that external security measures are required to protect the R8000 from unauthorized access.**

5.0   Other Warnings and Recommendations

While there are access restrictions when using this protocol to monitor and control the R8000, it is highly recommended that programmers be cautious and aware that this equipment is capable of generating and receiving high power signals through its configuration. **The protocol does not protect the user from improper physical connections or signal routing.** It is also recommended that programmers use the equipment ID command (***IDN?**) to identify the equipment being controlled upon the initiation of a connection or following local control of the equipment.

6.0   General Usage

The M&C consists of a set of proprietary commands as well as supporting the IEEE standard equipment ID query. These various commands are used to access the menus and fields that control and report R8000 operation. Commands take the form of:

CMD[Tag[=data]]

If applicable, the Tag consists of the required region, also called the owner, of the field along with a specifier. Some fields require that the region is active in order to query or control the data. The specifier identifies the specific field or code being queried or controlled. The region and specifier are joined together with a colon "**:**"; e.g. DISPLAY:Span. The data is only used with write access controls and must be in the appropriate format per the field definition. The square

brackets ([]) illustrate these options and are not part of the actual command to be sent. All commands must be terminated by a carriage-return (CR) and line-feed (LF) character.

6.1 Commands

1. **NOOP:** This command has no affect on the R8000 but provides a mechanism for a prompt query. Programmers may use this command to poll for response of code *2* (Busy) to determine if a previous new command may still be being applied; see the field description section, Typical Completion Time.

    Usage : **NOOP**

2. **GET**: Use this command to retrieve monitored information or current control settings

    Usage: **GET <Tag>**

3. **SET**: Use this command to set a control to a new value

    Usage: **SET <Tag>=<value>**

    NOTE: If a field of Data Type BOOLEAN has no List Values then value is **F** or **T**.

4. **DO**: Use this command to have the R8000 perform a function.

    Usage: **DO <Tag>**

5. **GO**: Use this command to navigate the R8000 menu tree. Some fields are only accessible if the field's required menu is active. In order to monitor or control these fields, use the **GO** command to navigate to the menu first.

    Usage: **GO <Tag>**

6. ***IDN?**: Equipment ID command. Use this command to return the following formatted response:

    Usage: ***IDN?**
    Freedom Communication Technologies, Inc. Communications System Analyzer Model:<model number>, S/N:<serial number>, System Version:<version>

7. **ERR?** and **CLEAR**: Use these commands together to manage the error notification system of the R8000. **ERR?** queries the R8000 for error information and **CLEAR** is used to acknowledge error messages and popups. There are two usages based on the response to **ERR?**.

Usage : **ERR?**

Usage 1(Popup): **CLEAR <Tag>[Response]**

If a popup is active, **ERR?** will return with the popup tag, a list of valid responses, and the text message of the popup. For example:

ERR?
0:SYSTEM:6045[POP_CONTINUE,POP_CANCEL] WARNING!
Access to USB device Press Continue to save screen capture to device
Or Press Cancel to abort
CLEAR SYSTEM:6045[POP_CONTINUE]
0:

Usage 2(Messages): **CLEAR**

If no popup is active, the **ERR?** will respond with the number of active messages and a list of the message codes. For example:

ERR?
0:2[6040,7001]
CLEAR
0:
ERR?
0:0[]

8. **HELP:** Use this command to obtain limited help information. This command can return help for a command, a specific field, or a brief explanation of a prompt or message code.

   Usage 1(Command help): **HELP <Command>**

   Usage 2(Field help): **HELP <Tag>**

   The field help is formatted to allow users to format the response into a readable body. It contains the pipe-bar character "|" at each location where a carriage return/line feed (CRLF) should be placed. For example,

   HELP SYSTEM:RF

   will respond with the following string:

   0:Name:RF Zone|Tag:SYSTEM:RF|Commands:GO|Data Type:SUBMENU|Typical Completion Time:250 ms||

   By replacing all pipe-bar characters with a CRLF, the result is this:

   0:Name:RF Zone

Tag:SYSTEM:RF
Commands:GO
Data Type:SUBMENU
Typical Completion Time:250 ms

Usage 3(Prompt\Message code): **HELP <code>**

6.2 Responses

Each command sent to the R8000 via the M&C protocol shall return a single response. The response consists of a prompt code and colon followed by any returned data. The returned data format depends on the field's data type.

1. Prompt codes
    a. *0*: Okay – command was successful
    b. *1*: Ranged – command was accepted but the data had to be coerced into the valid data range or format.
    c. *2*: Busy – command was accepted (i.e. code would have been Okay) but previous command was not confirmed complete based on Typical Completion Time.
    d. *3*: Denied – Access to the requested field was denied. Check field Commands property.
    e. *4*: N/A – Not available at this time. Check availability requirements.
    f. *5*: Option – Option not installed. Contact Sales to purchase options.
    g. *6*: Error – Unexpected error.
    h. *7*: Invalid – Command not valid for field. Check field Commands property.
    i. *8*: Unknown – Tag is unknown. Check Region and Tag
    j. *9*: Format – Data is in the wrong format. For example, the field is an INTEGER type but a character string was sent. Check field data type.

7.0 Field Properties

Fields are described by their set of properties. This section describes the field properties, valid commands for them, type of data, availability conditions, typical command completion times, etc.

1. Name: This is the name of the field. It is unused in the protocol but valuable for reference as this name corresponds to the name found on soft keys for controls on the R8000. It is also may be slightly more descriptive than the tag.

2. Tag: The tag consists of two parts; the Region, or owner, categorizes the scope of the tag reference; the tag itself specifies the particular field within the region.

    The format of the Tag is always Region:Tag

3. Commands: this property is a list of valid M&C commands that may be used with the field.

4. Data Type: This describes the type of data expected in the **SET** command string or the data returned from a **GET** query. All data is passed in text string format, however the string is processed by the R8000 according to the data type.

    a. Format: Some STRING and Numeric data fields have a specialized format for the data. See 10.0 Custom Formats.

    b. Char set: Some STRING data fields are restricted to the character set that can be used. For example, the DTMF Code has a defined character set:

        0,1,2,3,4,5,6,7,8,9,A,B,C,D,#,*

    c. List Values: Both LIST and BOOLEAN data type fields have aliased text strings to make the command/response more readable. These aliases correspond to the horizontal soft key position or position in the list box in the R8000 editing system.

        Some LIST and BOOLEAN data type values are dynamically available based on the condition of the system at the time of the command. These conditions are documented in brackets immediately following the list value and describe the run-time conditions necessary to set the field to the specific list value. For example, the following field description indicates availability conditions for both list values:

        Name:Select Audio Measurement
        Tag:METER:Audio Meter
        Commands:GET, SET
        Data Type:LIST
        List Values: SINAD/Ext Distortion [Test Mode<>P25 Trunk and Test Mode<>NXDN Trunk], Internal Distortion [Test Mode=Standard]
        Availability:
                Operating Mode:Monitor, Generate, Duplex
                Menu:METER:Subzone=SINAD/Distortion
        Typical Completion Time:100 ms

        The **SINAD/Ext Distortion** value is available in all test modes except trunking modes.
        The **Internal Distortion** is only available in Standard test mode.

        NOTE: Do not include the condition when setting a value; the correct command for this example is: **SET METER:Audio Meter=SINAD/Ext Distortion**

    d. Range: Numeric values may have limited ranges that will be accepted. If the number has settable units (See Units), the range is always defined in the base units. If the data set into the field is outside the range, the R8000 will coerce the

new value into the range at either the minimum or maximum value. The command will be accepted and return with a prompt code of *1* (Ranged)

    e.   Units: Some floating point values have settable units that the value can be set in. If the field has settable units, this property will list the valid entries. To set a floating point value with its units, format the data as "value units"; for example:

    SET RF:Monitor Frequency=1.2 GHz
    0:1.200000000 GHz

    However, sending the units is not a requirement. If units are not sent, the system will apply the currently configured units to the data. For example, if the following two commands are sent, the second will be assumed to be in MHz.

    SET RF:Monitor Frequency=403 MHz
    0:403.000000 MHz
    SET RF:Monitor Frequency=405
    0:405.000000 MHz

5. Availability
Because the R8000 disables sub-systems to provide the most efficient use of processing, certain fields may not be available at all times. Fields that have availability requirements are denoted under this property.

    a.   Synth Format: Field is only accessible when the specified Audio Format is selected. This availability requirement is unique to fields in the Audio Zone and used to configure specific audio formats such as PL, DPL, etc.
    b.   Operating Mode: Field is only accessible when the R8000 is in the mode(s) indicated. If this property is not present, the field is available in any/all modes unless otherwise unavailable.
    c.   Options: Field is only accessible when the specified option has been purchased. If this property is not present, the field is standard. Contact to purchase new options for your R8000.
    d.   Menu: Field is only accessible when the R8000 menu system has the given condition active. This condition may specify a region or a region and a subzone (Region ->Subzone). Use the **GO** and **SET** commands to navigate to and/or select the appropriate region. If this property is not present, the field is available regardless of region.

6. Typical Completion Time: This property provides the typical processing time for the field in milliseconds. Most commands take very little time to complete; however some commands take more time to apply the desired condition to the system. This is particularly important when creating automated control software. The M&C is designed for immediate command response. However if the previous command has not had time to complete, there is no guarantee that data will be ready to retrieve following a change in

configuration. For example, the following commands if sent without delay would most likely result in an inaccurate Input Level reading:

SET RF:Monitor Frequency=403 MHz
0:403.000000 MHz
GET MONITOR:Input Level
2:-32.3

The prompt will be returned with code *2* (Busy) if the previous command was not given enough time to complete its transaction.

8.0 Examples

There are a few examples of how to use different types of commands with fields within the following section. These examples assume the R8000 is starting from the main zone screen and call specific commands to activate the required regions necessary to command the field. These examples are given as if executed from a terminal with a connection to the remote monitor and control interface. Expected command responses are provided for reference.

1. Tune to local radio station with the highest signal. From a terminal program execute the following commands in sequence.

    SET SYSTEM:Mode Request=Monitor
    0:Monitor
    GO SYSTEM:RF
    0:
    SET RF:Monitor Port=Antenna
    0:Antenna
    SET RF:Bandwidth=200 kHz (Wide)
    0: 200 kHz (Wide)
    GO SYSTEM:DISPLAY
    0:
    SET DISPLAY:Subzone=Spec An
    0:Spec An
    SET DISPLAY:Start Frequency=75 MHz
    0:75.000000 MHz
    SET DISPLAY:Stop Frequency=110 MHz
    0:110.000000 MHz
    DO DISPLAY:Center Peak
    0:
    SET DISPLAY:Span=158 kHz
    0:158.000 kHz

2. Generate a DTMF tone and view it on the modulation scope. From a terminal program execute the following commands in sequence.

SET SYSTEM:Mode Request=Generate
0:Generate
GO SYSTEM:DISPLAY
0:
SET DISPLAY:Subzone=Mod Scope
0:Mod Scope
SET DISPLAY:FM Vertical Scale=5 kHz
0:5 kHz
GO SYSTEM:AUDIO
0:
SET AUDIO:Gen DTMF=12
0:12
SET AUDIO:DTMF Code=123ABC#
0:123ABC#--------
SET AUDIO:DTMF Mode=Continuous
0:Continuous

9.0   Local/Remote Control

The R8000 will temporarily lock out local users when the unit is remotely controlled. When the R8000 is in lock-out, the Operating Mode indicator on the lower-left part of the screen will flash between the operating mode and "Remote". To regain local control the Esc key must be pressed from the front panel.

10.0 Custom Formats

Some fields use a custom formatting that is required for data entry. This section describes each format type.

10.1 Format symbols

$ Alphabetic characters only (A-Z)
#   Decimal digits only (0-9)
0   Hexadecimal characters only (0-9, A-F)
x   Any/all characters are valid
:   Location in string must be a colon
.   Location in string must be a period.

10.2 Format templates

0x0000 – Hexadecimal format. This field is a string containing a hexadecimal value the length of the number of digits to the right of the 0x prefix. If the data is shorter than the format, add leading zeros to ensure the appropriate value is set.

Examples:
     Format=0x0000

Setting => 0A3F

Format=0x00
Setting => 3F

Format=0x00000000
Setting => 00000A3F

#.#### – Floating point format. This field contains a floating point number with the precision defined by the number of digits to the right of the decimal point.

Examples:
Format=#.##
Setting => 4.02

Format=#.#####
Setting => 1.10031

(POCSAGCustom) – Used for blank formatting and the POCSAG text messaging, no particular formatting required.

(56Tone) - Used specifically for the 5/6 Tone code formatting. The 5/6 tone must be formatted as #-#####c where c is either empty or 'X' indicating the 6-tone. The valid character set for the digital format (#) is [0123456789R] where the 'R' character indicates a repeat tone.
Examples:
0-12345
2-12R45
0-12346X

(DTMFCode) – Used specifically for the DTMF Tone code formatting. The DTMF code field must be at exactly 16 characters long. Strings less that 16 characters will be appended with dashes "-" to extend the string to 16 characters. Strings longer than 16 characters will be truncated to 16 characters. The valid character set for DTMF code is [0123456789ABCD#*]

(GENSEQCode) - Used specifically for the General Sequence tone code, delay, and duration sequence formatting. These fields must be at exactly 20 characters long. Strings less that 20 characters will be appended with dashes "-" to extend the string to 20 characters. Strings longer than 20 characters will be truncated to 20 characters. The valid character set for the General Sequence format is [0123456789ABCDEFGHIJ]

(HH:MM) – Used for time entry where HH is 24-hour notation; MM is minutes. This field must have a colon in the 3rd character position.

(MM.DD.YYYY) – Used for date entry where MM is month, DD is day, and YYYY is year. This field must have a period in the 3rd and 6th character positions.

11.0 Field Descriptions

This section provides the specific properties for each field accessible through the R8000 Monitor and Control interface for R8000 system version 4.3.0.0.

```
Name:RF Zone
Tag:SYSTEM:RF
Commands:GO
Data Type:SUBMENU
Typical Completion Time:1000 ms

Name:AUDIO Zone
Tag:SYSTEM:AUDIO
Commands:GO
Data Type:SUBMENU
Typical Completion Time:1000 ms

Name:DMR
Tag:SYSTEM:DMR
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-DMR
Typical Completion Time:2000 ms

Name:PROJECT 25
Tag:SYSTEM:P25
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-P25
Typical Completion Time:2000 ms

Name:P25 II
Tag:SYSTEM:P25_II
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-P25_II
Typical Completion Time:2000 ms

Name:NXDN™
Tag:SYSTEM:NXDN
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-NXDN
Typical Completion Time:2000 ms

Name:dPMR
Tag:SYSTEM:DPMR
Commands:GO
Data Type:SUBMENU
```

```
Availability:
        Option:R8-DPMR
Typical Completion Time:2000 ms

Name:P25 Trunk
Tag:SYSTEM:P25_TRUNK
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-P25TRNK
Typical Completion Time:2000 ms

Name:PTC-ACSES
Tag:SYSTEM:PTC_ACSES
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-PTC_ACSES
Typical Completion Time:2000 ms

Name:PTC-ITCR
Tag:SYSTEM:PTC_ITCR
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-PTC_ITCR
Typical Completion Time:2000 ms

Name:TETRA
Tag:SYSTEM:TETRA
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-TETRA_BSM, R8-TETRA_DMO
Typical Completion Time:2000 ms

Name:TETRA TMO
Tag:SYSTEM:TETRA_TMO
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-TETRA_TMO
Typical Completion Time:2000 ms

Name:TETRA Base Station
Tag:SYSTEM:TETRA_BST
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-TETRA_BSM
Typical Completion Time:2000 ms

Name:NXDN™ Trunk
Tag:SYSTEM:NXDN_TRUNK
Commands:GO
```

```
Data Type:SUBMENU
Availability:
        Option:R8-NXDNTYPC
Typical Completion Time:2000 ms

Name:Continue to Avionics
Tag:SYSTEM:AVIONICS
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-AVIONICS
Typical Completion Time:2000 ms

Name:DISPLAY Zone
Tag:SYSTEM:DISPLAY
Commands:GO
Data Type:SUBMENU
Typical Completion Time:1000 ms

Name:METER Zone
Tag:SYSTEM:METER
Commands:GO
Data Type:SUBMENU
Typical Completion Time:1000 ms

Name:State
Tag:SYSTEM:State
Commands:GET
Data Type:LIST
List Values: INIT, RUN, LOAD, CALIBRATE
Typical Completion Time:0 ms

Name:Mode
Tag:SYSTEM:Mode
Commands:GET
Data Type:LIST
List Values: Monitor, Generate, Duplex, Track Gen, Cable Fault, VNA
Typical Completion Time:0 ms

Name:Mode
Tag:SYSTEM:Mode Request
Commands:GET, SET
Data Type:LIST
List Values: Monitor, Generate, Duplex
Typical Completion Time:2000 ms

Name:Squelch Position
Tag:SYSTEM:Squelch Position
Commands:GET
Data Type:FLOAT
Typical Completion Time:0 ms

Name:Squelch State
Tag:SYSTEM:Squelch State
Commands:GET
```

```
Data Type:BOOLEAN
List Values: Squelched - Low Signal, Not Squelched
Typical Completion Time:0 ms

Name:Serial Number
Tag:SYSTEM:UNITID
Commands:GET
Data Type:STRING
Typical Completion Time:0 ms

Name:
Tag:SYSTEM:BaseModel
Commands:GET
Data Type:STRING
Typical Completion Time:0 ms

Name:External Drives
Tag:SYSTEM:External Drives
Commands:GET
Data Type:LIST
List Values:
Typical Completion Time:0 ms

Name:Select Display
Tag:DISPLAY:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Spec An, Mod Scope [Test Mode=Standard or Test Mode=DPMR or Test
Mode=NXDN or Test Mode=NXDN Trunk], Oscilloscope [Test Mode=Standard or Test
Mode=DPMR or Test Mode=NXDN or Test Mode=NXDN Trunk or Test Mode=PROJECT 25
or Test Mode=P25 Trunk or Test Mode=P25 II], Bar Graphs [Test Mode=Standard
or Test Mode=DPMR or Test Mode=NXDN or Test Mode=PROJECT 25 or Test Mode=P25
II], Eye Diagram [Test Mode=DPMR or Test Mode=NXDN or Test Mode=NXDN Trunk or
Test Mode=PROJECT 25 or Test Mode=P25 Trunk or Test Mode=P25 II or Test
Mode=PTC-ACSES or Test Mode=PTC-ITCR or Test Mode=DMR], Power Profile [Test
Mode=DMR or Test Mode=P25 II and P25_II:Mon Mod Type=HCPM or Test Mode=PTC-
ACSES or Test Mode=PTC-ITCR or Test Mode=TETRA BST or Test Mode=TETRA DMO],
General Sequence [METER:Decoder=General Sequence], Voice Frame Decode [Test
Mode=PROJECT 25], Mod Spec / Constellation [Test Mode=TETRA BST or Test
Mode=TETRA DMO], Constellation Plot [Test Mode=PTC-ITCR or Test Mode=PROJECT
25], Distribution Plot [Test Mode=PROJECT 25 or Test Mode=P25 Trunk or Test
Mode=P25 II or Test Mode=PTC-ITCR or Test Mode=DMR], Slot Map [Test Mode=PTC-
ACSES], Analysis Details [Test Mode=DMR], Protocol Details [Test Mode=DMR]
Availability:
        Operating Mode:Monitor, Generate, Duplex
Typical Completion Time:500 ms

Name:Reset Meter Fields
Tag:DISPLAY:ResetAnalysisDetails
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Analysis Details
Typical Completion Time:500 ms
```

```
Name:Samples
Tag:DISPLAY:Spectral Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex, Track Gen
Typical Completion Time:100 ms

Name:Samples
Tag:DISPLAY:Demodulation Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:100 ms

Name:Samples
Tag:DISPLAY:Modulation Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Generate, Duplex
Typical Completion Time:100 ms

Name:Samples
Tag:DISPLAY:External Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Generate, Duplex
Typical Completion Time:100 ms

Name:Center Frequency
Tag:DISPLAY:Monitor Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:5000 ms

Name:Span
Tag:DISPLAY:Span
Commands:GET, SET
Data Type:FLOAT
Range: 9751 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:5000 ms
```

```
Name:Start Frequency
Tag:DISPLAY:Start Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:5000 ms

Name:Stop Frequency
Tag:DISPLAY:Stop Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:5000 ms

Name:See and Hear Active
Tag:DISPLAY:SNH Active
Commands:GET
Data Type:BOOLEAN
List Values:
Availability:
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:0 ms

Name:Resolution Bandwidth
Tag:DISPLAY:Resolution Bandwidth
Commands:GET
Data Type:FLOAT
Availability:
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:0 ms

Name:Reference Level (dBm)
Tag:DISPLAY:Reference Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 90
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:100 ms

Name:Vertical Scale
Tag:DISPLAY:Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 10 dB/div, 5 dB/div, 2 dB/div, 1 dB/div
Availability:
```

```
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:100 ms

Name:Display Mode
Tag:DISPLAY:Display Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Freeze, Max Hold, Average
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:100 ms

Name:Trace Math
Tag:DISPLAY:Trace Math
Commands:GET, SET
Data Type:LIST
List Values: None, Spec-Ref (log),
Spec-Ref
 (lin), Spec+Ref (lin)
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:100 ms

Name:Set Reference Trace
Tag:DISPLAY:Set Reference Trace
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:100 ms

Name:Detector
Tag:DISPLAY:Detector
Commands:GET, SET
Data Type:LIST
List Values: Power, Peak, Sample, Mean, Valley
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:200 ms

Name:Coupling
Tag:DISPLAY:Coupling
Commands:GET, SET
Data Type:BOOLEAN
List Values: DC, AC
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms
```

```
Name:Horizontal Scale
Tag:DISPLAY:Horizontal Scale
Commands:GET, SET
Data Type:LIST
List Values: 20 us, 50 us, 100 us, 200 us, 500 us, 1 ms, 2 ms, 5 ms, 10 ms,
20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms


Name:Horizontal Scale
Tag:DISPLAY:Ext Horizontal Scale
Commands:GET, SET
Data Type:LIST
List Values: 20 us (Max 50 kHz In), 50 us (Max 20 kHz In), 100 us (Max 10 kHz
In), 200 us (Max 5 kHz In), 500 us (Max 2 kHz In), 1 ms (Max 1 kHz In), 2 ms
(Max 500 Hz In), 5 ms (Max 200 Hz In), 10 ms (Max 100 Hz In), 20 ms (Max 50
Hz In), 50 ms (Max 20 Hz In), 100 ms (Max 10 Hz In), 200 ms (Max 5 Hz In),
500 ms (Max 2 Hz In), 1 s (Max 1 Hz In)
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms


Name:Vertical Scale
Tag:DISPLAY:AM Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 1%, 2%, 5%, 10%, 20%, 50%
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms


Name:Vertical Scale
Tag:DISPLAY:FM Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 5 kHz, 10 kHz, 20 kHz, 50
kHz
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms


Name:Vertical Scale
Tag:DISPLAY:Ext Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 50 mV, 100 mV, 200 mV, 500 mV, 1 V, 2 V, 5 V, 10 V, 15 V, 20 V,
25 V
Availability:
        Operating Mode:Monitor, Generate, Duplex
```

TYPE:

Programmer's Guide

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FCT-1110

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R8000 Monitor & Control

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FREEDOM
Communication Technologies

Kilgore, TX

```
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms


Name:Select View
Tag:DISPLAY:Select View
Commands:GET, SET
Data Type:LIST
List Values: Current [Test Mode=DMR], Alternate [Test Mode=DMR], Both [Test
Mode=DMR], Frame [Test Mode=P25 II or Test Mode=TETRA DMO], Slot 1 [Test
Mode=P25 II or Test Mode=TETRA DMO], Slot 2 [Test Mode=P25 II]
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Select Frame
Tag:DISPLAY:Frame
Commands:GET, SET
Data Type:LIST
List Values: 1, 2, 3, 4, 5, 6
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Vertical Maximum (dBm)
Tag:DISPLAY:PP Vertical Maximum
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 60
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Vertical Scale
Tag:DISPLAY:PP Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 10 dB/div, 5 dB/div, 2 dB/div, 1 dB/div
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Horizontal Start (ms)
Tag:DISPLAY:PP Horizontal Start
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 4000
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-PTC_ITCR
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms
```

```
Name:Horizontal Start (ms)
Tag:DISPLAY:PP Horizontal Start Wide
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 6000
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-PTC_ACSES
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Horizontal Maximum (ms)
Tag:DISPLAY:PP Horizontal Maximum
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 4000
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-PTC_ITCR
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Horizontal Maximum (ms)
Tag:DISPLAY:PP Horizontal Maximum Wide
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 6000
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-PTC_ACSES
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Power Profile before Display Mode
Tag:DISPLAY:Power Profile Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Display Mode
Tag:DISPLAY:PP Display Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Freeze, Max Hold, Average
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms


Name:Power Profile after Display Mode
Tag:DISPLAY:Power Profile
```

```
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms

Name:Update Power Profile
Tag:DISPLAY:Power Profile Request
Commands:
Data Type:BOOLEAN
List Values: F, T
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Power Profile
Typical Completion Time:100 ms

Name:Find Peak
Tag:DISPLAY:Find Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:100 ms

Name:Center Peak
Tag:DISPLAY:Center Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Spec An
Typical Completion Time:5000 ms

Name:Trigger Mode
Tag:DISPLAY:Trigger
Commands:GET, SET
Data Type:LIST
List Values: Auto, Normal, Single
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms

Name:Trigger Level
Tag:DISPLAY:Trigger Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 200000
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms
```

```
Name:Trigger Level (%)
Tag:DISPLAY:AM Trigger Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms

Name:Trigger Position
Tag:DISPLAY:Trigger Position
Commands:GET, SET
Data Type:LIST
List Values: 10%, 50%, 90%
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:0 ms

Name:Trigger Edge
Tag:DISPLAY:Trigger Edge
Commands:GET, SET
Data Type:LIST
List Values: Rising, Falling, Either
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms

Name:Scope Mode
Tag:DISPLAY:Mod Scope Select
Commands:GET, SET
Data Type:BOOLEAN
List Values: Monitor, Generate
Availability:
        Operating Mode:Duplex
        Menu:DISPLAY:Subzone=Mod Scope
Typical Completion Time:100 ms

Name:Trigger Mode
Tag:DISPLAY:Ext Trigger
Commands:GET, SET
Data Type:LIST
List Values: Auto, Normal, Single, Freeze
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms

Name:Trigger Level
Tag:DISPLAY:Ext Trigger Level
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
```

```
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms

Name:Trigger Position
Tag:DISPLAY:Ext Trigger Position
Commands:GET, SET
Data Type:LIST
List Values: 10%, 50%, 90%
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms

Name:Trigger Edge
Tag:DISPLAY:Ext Trigger Edge
Commands:GET, SET
Data Type:LIST
List Values: Rising, Falling, Either
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DISPLAY:Subzone=Oscilloscope
Typical Completion Time:500 ms

Name:Deviation Average
Tag:DISPLAY:Deviation Average
Commands:GET, SET
Data Type:LIST
List Values: Normal, Peak Average [Test Mode=Standard], Pwr-Weight Average
[Test Mode=Standard], RMS Average [Test Mode=Standard], +/-Peak / 2 [Test
Mode=Standard]
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Bar Graphs
Typical Completion Time:100 ms

Name:Display Mode
Tag:DISPLAY:Eye Display Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Fade Away
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DISPLAY:Subzone=Eye Diagram
Typical Completion Time:100 ms

Name:Decode to Standard
Tag:DISPLAY:Standard
Commands:GET, SET
Data Type:LIST
List Values: None, CCIR1, CCIR2, PCCIR, CCITT, EEA, EIA, Euro, NATEL, MODAT,
ZVEI1, ZVEI2, ZVEI3, PZVEI, DZVEI, PDZVEI
Availability:
        Menu:DISPLAY:Subzone=General Sequence
```

```
Typical Completion Time:100 ms

Name:
Tag:DISPLAY:Distribution Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms

Name:Constellation Data
Tag:DISPLAY:Constellation Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:100 ms

Name:
Tag:DISPLAY:SymbolDeviations
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms

Name:
Tag:DISPLAY:MagnitudeErrors
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms

Name:
Tag:DISPLAY:MaxDeviationErrors
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms

Name:
Tag:DISPLAY:SymbolDeviationErrors
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms

Name:
Tag:DISPLAY:MaxSymbolDeviationErrors
Commands:GET
Data Type:ARRAY
Availability:
```

```
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms


Name:
Tag:DISPLAY:ProtocolDetails
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:1100 ms


Name:Select Meter
Tag:METER:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Power Meter [Test Mode=Standard or Test Mode=DMR or Test
Mode=DPMR or Test Mode=NXDN or Test Mode=PROJECT 25 or Test Mode=P25 II],
Voltmeter [Test Mode=Standard or Test Mode=DMR or Test Mode=DPMR or Test
Mode=NXDN or Test Mode=PROJECT 25 or Test Mode=P25 II or Test Mode=TETRA
DMO], SINAD/Distortion [Test Mode=Standard], Decoder [Test Mode=Standard or
Test Mode=PROJECT 25], Frequency Counter [Test Mode=Standard], P25 Trunking
[Test Mode=P25 Trunk], Constellation [Test Mode=DMR or Test Mode=P25 II or
Test Mode=PTC-ACSES or Test Mode=PTC-ITCR], RF Scan [Test Mode=Standard or
Test Mode=DPMR or Test Mode=NXDN or Test Mode=PROJECT 25], NXDN™ Trunking
[Test Mode=NXDN Trunk], SNRMeter [Test Mode=Standard]
Availability:
        Operating Mode:Monitor, Generate, Duplex
Typical Completion Time:100 ms


Name:Reset Meter Fields
Tag:METER:Reset Meter Fields
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Duplex
        Menu:METER:Subzone=P25 Trunking
Typical Completion Time:100 ms


Name:Range
Tag:METER:PWR Meter Range
Commands:GET, SET
Data Type:LIST
List Values: 5W, 10W, 50W, 150W
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Power Meter
Typical Completion Time:100 ms


Name:Measured Power
Tag:METER:Measured Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Power Meter
```

```
Typical Completion Time:0 ms

Name:Select Voltmeter Mode
Tag:METER:Voltmeter
Commands:GET, SET
Data Type:LIST
List Values: AC Volts, DC Volts
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:100 ms

Name:Select SNRMeter Mode
Tag:METER:SNRMeter
Commands:GET, SET
Data Type:LIST
List Values: SNR
Availability:
        Operating Mode:Monitor, Generate
        Menu:METER:Subzone=SNRMeter
Typical Completion Time:100 ms

Name:Coupling
Tag:METER:Coupling
Commands:GET, SET
Data Type:BOOLEAN
List Values: DC, AC
Availability:
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:500 ms

Name:AC Range
Tag:METER:AC Range
Commands:GET, SET
Data Type:LIST
List Values: Auto, 1 V, 10 V, 70 V
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:100 ms

Name:Set dBr Reference
Tag:METER:Set Reference
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:100 ms

Name:Clear dBr Reference
Tag:METER:Clear Reference
Commands:DO
Data Type:FUNCTION
Availability:
```

```
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:100 ms


Name:DC Range
Tag:METER:DC Range
Commands:GET, SET
Data Type:LIST
List Values: Auto, 1 V, 10 V, 100 V
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:100 ms


Name:Voltage Units
Tag:METER:Voltage Units
Commands:GET, SET
Data Type:LIST
List Values: Volts (V), Millivolts (mV), Decibel Volts (dBV)
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:100 ms


Name:AC Volts
Tag:METER:AC Volts
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:0 ms


Name:DC Volts
Tag:METER:DC Volts
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Voltmeter
Typical Completion Time:0 ms


Name:Audio SNR (dB)
Tag:METER:SNR
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Generate
        Menu:METER:Subzone=SNRMeter
Typical Completion Time:0 ms


Name:External Current (A)
Tag:METER:Ext Amps
Commands:GET
Data Type:FLOAT
```

```
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=SNRMeter
Typical Completion Time:0 ms


Name:External Current Status
Tag:METER:Ext Error
Commands:GET
Data Type:INTEGER
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=SNRMeter
Typical Completion Time:0 ms


Name:Select Audio Measurement
Tag:METER:Audio Meter
Commands:GET, SET
Data Type:LIST
List Values: SINAD/Ext Distortion [Test Mode=Standard], Internal Distortion
[Test Mode=Standard]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=SINAD/Distortion
Typical Completion Time:100 ms


Name:SINAD
Tag:METER:SINAD
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=SINAD/Distortion
Typical Completion Time:0 ms


Name:External Distortion
Tag:METER:External Distortion
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=SINAD/Distortion
Typical Completion Time:0 ms


Name:Internal Distortion
Tag:METER:Internal Distortion
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=SINAD/Distortion
Typical Completion Time:0 ms


Name:Select Decoder Type
Tag:METER:Decoder
Commands:GET, SET
```

```
Data Type:LIST
List Values: PL/Period Counter [Test Mode=Standard], DPL Decode [Test
Mode=Standard], DTMF Decode [Test Mode=Standard], 2-Tone Decode [Test
Mode=Standard], 5/6 Tone Decode [Test Mode=Standard], General Sequence [Test
Mode=Standard], Voice Frame Decode [Test Mode=PROJECT 25]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:100 ms

Name:Reset
Tag:METER:Reset
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Decoder, Frequency Counter
Typical Completion Time:100 ms

Name:PL Freq
Tag:METER:PL Frequency
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms

Name:PL Code
Tag:METER:PL Code
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms

Name:DPL Code
Tag:METER:DPL Code
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms

Name:DTMF Code
Tag:METER:DTMF Code
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms
```

```
Name:General Sequence Decodes
Tag:METER:GenSeqDecodes
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms


Name:Decode
Tag:METER:Decode
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:500 ms


Name:Code Sequence
Tag:METER:Code Sequence
Commands:GET, SET
Data Type:STRING
Format:(GENSEQCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J
Availability:
        Operating Mode:Duplex
Typical Completion Time:100 ms


Name:Decode Burst
Tag:METER:Decode Burst
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Duplex
Typical Completion Time:500 ms


Name:Tone1 Freq.
Tag:METER:Tone1 Freq
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms


Name:Tone1 Duration
Tag:METER:Tone1 Duration
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms
```

```
Name:Tone2 Freq.
Tag:METER:Tone2 Freq
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms


Name:Tone2 Duration
Tag:METER:Tone2 Duration
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms


Name:5/6 Codes
Tag:METER:56_Codes
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:0 ms


Name:5/6 Freqs
Tag:METER:56_Freqs
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:100 ms


Name:5/6 Durations
Tag:METER:56_Durs
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:100 ms


Name:Decode to Standard
Tag:METER:Standard
Commands:GET, SET
Data Type:LIST
List Values: None, CCIR1, CCIR2, PCCIR, CCITT, EEA, EIA, Euro, NATEL, MODAT,
ZVEI1, ZVEI2, ZVEI3, PZVEI, DZVEI, PDZVEI
Availability:
        Menu:METER:Subzone=Decoder
Typical Completion Time:500 ms
```

```
Name:High Pass Filter
Tag:METER:High Pass Filter
Commands:GET, SET
Data Type:LIST
List Values: 1 Hz, 300 Hz, 3 kHz
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:100 ms


Name:Low Pass Filter
Tag:METER:Low Pass Filter
Commands:GET, SET
Data Type:LIST
List Values: 300 Hz, 3 kHz, 20 kHz
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Decoder
Typical Completion Time:100 ms


Name:Input Decoding
Tag:METER:Input Decoding
Commands:GET, SET
Data Type:BOOLEAN
List Values: Internal, External
Availability:
        Menu:METER:Subzone=Decoder, Frequency Counter
Typical Completion Time:100 ms


Name:Frequency Counter
Tag:METER:Frequency Counter
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=Frequency Counter
Typical Completion Time:0 ms


Name:Resolution
Tag:METER:Resolution
Commands:GET, SET
Data Type:LIST
List Values: 0.001 Hz, 0.01 Hz, 0.1 Hz, 1.0 Hz, 10 Hz
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:METER:Subzone=Frequency Counter
Typical Completion Time:100 ms


Name:Test Status
Tag:METER:Trunk Status
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:METER:Subzone=P25 Trunking
```

Typical Completion Time:0 ms

Name:Deviations
Tag:METER:Constellation
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:100 ms

Name:Start Frequency (MHz)
Tag:METER:Start Frequency
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 3000
Availability:
        Operating Mode:Monitor
        Menu:METER:Subzone=RF Scan
Typical Completion Time:5000 ms

Name:Stop Frequency (MHz)
Tag:METER:Stop Frequency
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 3000
Availability:
        Operating Mode:Monitor
        Menu:METER:Subzone=RF Scan
Typical Completion Time:5000 ms

Name:Scan
Tag:METER:Run RF Scan
Commands:GET, SET
Data Type:LIST
List Values: Off, Single, Auto
Availability:
        Operating Mode:Monitor
        Menu:METER:Subzone=RF Scan
Typical Completion Time:100 ms

Name:RF Scan State
Tag:METER:RF Scan State
Commands:GET
Data Type:LIST
List Values: Disabled, Scanning, Locked, Inactive
Availability:
        Operating Mode:Monitor
        Menu:METER:Subzone=RF Scan
Typical Completion Time:0 ms

Name:Spectrum
Tag:METER:RF Scan Data
Commands:GET
Data Type:ARRAY
Availability:

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        Operating Mode:Monitor
        Menu:METER:Subzone=RF Scan
Typical Completion Time:0 ms

Name:Test Status
Tag:METER:NXDN Trunk Status
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Duplex
        Menu:METER:Subzone=NXDN™ Trunking
Typical Completion Time:0 ms

Name:Toggle with DO RF:RF Power
Tag:RF:RF Power
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Generate, Duplex
Typical Completion Time:100 ms

Name:Monitor Frequency
Tag:RF:Monitor Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:5000 ms

Name:Copy Frequency to Generator
Tag:RF:Copy Mon to Gen
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor
Typical Completion Time:5000 ms

Name:Duplex Offset
Tag:RF:Duplex Offset
Commands:GET, SET
Data Type:FLOAT
Range: 0 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
Typical Completion Time:5000 ms

Name:Generate Frequency
Tag:RF:Generate Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
```

```
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Generate, Duplex
Typical Completion Time:5000 ms

Name:Copy Frequency to Monitor
Tag:RF:Copy Gen to Mon
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
Typical Completion Time:5000 ms

Name:Modulation Type
Tag:RF:Modulation Type
Commands:GET, SET
Data Type:LIST
List Values: FM [Test Mode=Standard], AM [Test Mode=Standard], USB [Test
Mode=Standard and Option=R8-SSB], LSB [Test Mode=Standard and Option=R8-SSB],
4FSK [Test Mode=DMR or Test Mode=DPMR or Test Mode=NXDN], GMSK~ [Test
Mode=PTC-ACSES], C4FM [Test Mode=PROJECT 25 or Test Mode=P25 Trunk], LSM
[Test Mode=PROJECT 25 or Test Mode=P25 Trunk], WCQPSK [Test Mode=PROJECT 25
or Test Mode=P25 Trunk], pi/4 DQPSK [Test Mode=PTC-ITCR or Test Mode=TETRA
DMO or Test Mode=TETRA TMO or Test Mode=TETRA BST], HCPM [Test Mode=P25 II],
HDQPSK [Test Mode=P25 II and Operating Mode=Monitor or Test Mode=P25 II and
Operating Mode=Generate]
Availability:
        Operating Mode:Monitor, Generate, Duplex
Typical Completion Time:100 ms

Name:Output Units
Tag:RF:Output Lvl Units
Commands:GET, SET
Data Type:LIST
List Values: dBm, Volts, mV, µV, Watts, mW, µW
Availability:
        Operating Mode:Generate, Duplex
Typical Completion Time:500 ms

Name:Output Level (dBm)
Tag:RF:Output Lvl
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 5
Availability:
        Operating Mode:Generate, Duplex
Typical Completion Time:500 ms

Name:Output Level (dBm)
Tag:RF:Output Level
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 5
Availability:
        Operating Mode:Generate, Duplex
```

```
Typical Completion Time:500 ms

Name:Gen Port
Tag:RF:Generate Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Gen Out
Availability:
        Operating Mode:Generate, Duplex
Typical Completion Time:500 ms

Name:Bandwidth
Tag:RF:Bandwidth
Commands:GET, SET
Data Type:LIST
List Values: 6.25 kHz (Narrow), 8.33 kHz (Narrow), 10 kHz (Narrow), 12.5 kHz
(Narrow), 25 kHz (Wide), 50 kHz (Wide), 100 kHz (Wide), 200 kHz (Wide)
Availability:
        Operating Mode:Monitor, Generate, Duplex
Typical Completion Time:100 ms

Name:Attenuation
Tag:RF:Attenuation
Commands:GET, SET
Data Type:LIST
List Values: 0 dB, 2 dB, 4 dB, 6 dB, 8 dB, 10 dB, 12 dB, 14 dB, 16 dB, 18 dB,
20 dB, 22 dB, 24 dB, 26 dB, 28 dB, 30 dB, 32 dB, 34 dB, 36 dB, 38 dB, 40 dB,
42 dB, 44 dB, 46 dB, 48 dB, 50 dB, 52 dB, 54 dB, 56 dB, 58 dB, 60 dB, 62 dB
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:500 ms

Name:Pre-Amplifier
Tag:RF:PreAmp On
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:500 ms

Name:Mon Port
Tag:RF:Monitor Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Antenna
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:500 ms

Name:Input Source
Tag:RF:Input Source
Commands:GET, SET
Data Type:LIST
List Values: Auto, Input Level, Power Meter
```

```
Availability:
      Operating Mode:Monitor, Duplex
Typical Completion Time:100 ms

Name:Input Units
Tag:RF:Input Lvl Units
Commands:GET, SET
Data Type:LIST
List Values: dBm, Volts, mV, µV, Watts, mW, µW
Availability:
      Operating Mode:Monitor, Duplex
Typical Completion Time:100 ms

Name:Freq Error Units
Tag:RF:Frequency Error Units
Commands:GET, SET
Data Type:LIST
List Values: Hertz, PPM
Availability:
      Operating Mode:Monitor, Duplex
Typical Completion Time:100 ms

Name:Receiver Overload
Tag:RF:RX Overload
Commands:GET
Data Type:BOOLEAN
List Values: Okay, Receiver Overload - Increase Attenuation
Typical Completion Time:0 ms

Name:Mod Port Mode
Tag:AUDIO:Mod Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: In, Out
Availability:
      Operating Mode:Generate, Duplex
      Menu:AUDIO
Typical Completion Time:100 ms

Name:Fixed 1kHz Level (V)
Tag:AUDIO:Fixed 1kHz
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 8
Availability:
      Operating Mode:Monitor
      Menu:AUDIO
Typical Completion Time:100 ms

Name:Fixed 1kHz Level (kHz)
Tag:AUDIO:Gen Fixed 1kHz
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
```

```
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:Fixed 1kHz Level (%AM)
Tag:AUDIO:Gen AM Fixed 1kHz
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:Fixed 1kHz Mode
Tag:AUDIO:Fixed 1kHz Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:Synth Level (V)
Tag:AUDIO:Synth
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 8
Availability:
        Operating Mode:Monitor
        Menu:AUDIO
Typical Completion Time:100 ms


Name:Synth Level (kHz)
Tag:AUDIO:Gen Synth
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:Synth Level (%AM)
Tag:AUDIO:Gen AM Synth
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:Format
```

```
Tag:AUDIO:Format
Commands:GET, SET
Data Type:LIST
List Values: PL, DPL, DPL Invert, A/B Sequence, 5/6 Tone, POCSAG, General
Sequence
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:1000 ms


Name:Synth Mode
Tag:AUDIO:Synth Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst [AUDIO:Format=A/B Sequence or
AUDIO:Format=5/6 Tone or AUDIO:Format=POCSAG or AUDIO:Format=General
Sequence], Disconnect Tone [AUDIO:Format=DPL or AUDIO:Format=DPL Invert]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:500 ms


Name:PL Code
Tag:AUDIO:PL Code
Commands:GET, SET
Data Type:LIST
List Values: XZ, WZ, XA, WA, XB, WB, YZ, YA, YB, ZZ, ZA, ZB, 1Z, 1A, 1B, 2Z,
2A, 2B, 3Z, 3A, 3B, 4Z, 4A, 4B, 5Z, 5A, 5B, 6Z, 6A, 6B, 7Z, 7A, M1, 8Z, M2,
M3, M4, 9Z, M5, M6, M7
Availability:
        Synth Format:PL
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:PL Frequency (Hz)
Tag:AUDIO:PL Frequency
Commands:GET
Data Type:FLOAT
Range: 0  to 999
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms


Name:PL Table
Tag:AUDIO:PL Table
Commands:GO
Data Type:SUBMENU
Availability:
        Synth Format:PL
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:2000 ms
```

```
Name:DPL Code
Tag:AUDIO:DPL Code
Commands:GET, SET
Data Type:LIST
List Values: 000, 001, 002, 003, 004, 005, 006, 007, 010, 011, 012, 013, 014,
015, 016, 017, 020, 021, 022, 023, 024, 025, 026, 027, 030, 031, 032, 033,
034, 035, 036, 037, 040, 041, 042, 043, 044, 045, 046, 047, 050, 051, 052,
053, 054, 055, 056, 057, 060, 061, 062, 063, 064, 065, 066, 067, 070, 071,
072, 073, 074, 075, 076, 077, 100, 101, 102, 103, 104, 105, 106, 107, 110,
111, 112, 113, 114, 115, 116, 117, 120, 121, 122, 123, 124, 125, 126, 127,
130, 131, 132, 133, 134, 135, 136, 137, 140, 141, 142, 143, 144, 145, 146,
147, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165,
166, 167, 170, 171, 172, 173, 174, 175, 176, 177, 200, 201, 202, 203, 204,
205, 206, 207, 210, 211, 212, 213, 214, 215, 216, 217, 220, 221, 222, 223,
224, 225, 226, 227, 230, 231, 232, 233, 234, 235, 236, 237, 240, 241, 242,
243, 244, 245, 246, 247, 250, 251, 252, 253, 254, 255, 256, 257, 260, 261,
262, 263, 264, 265, 266, 267, 270, 271, 272, 273, 274, 275, 276, 277, 300,
301, 302, 303, 304, 305, 306, 307, 310, 311, 312, 313, 314, 315, 316, 317,
320, 321, 322, 323, 324, 325, 326, 327, 330, 331, 332, 333, 334, 335, 336,
337, 340, 341, 342, 343, 344, 345, 346, 347, 350, 351, 352, 353, 354, 355,
356, 357, 360, 361, 362, 363, 364, 365, 366, 367, 370, 371, 372, 373, 374,
375, 376, 377, 400, 401, 402, 403, 404, 405, 406, 407, 410, 411, 412, 413,
414, 415, 416, 417, 420, 421, 422, 423, 424, 425, 426, 427, 430, 431, 432,
433, 434, 435, 436, 437, 440, 441, 442, 443, 444, 445, 446, 447, 450, 451,
452, 453, 454, 455, 456, 457, 460, 461, 462, 463, 464, 465, 466, 467, 470,
471, 472, 473, 474, 475, 476, 477, 500, 501, 502, 503, 504, 505, 506, 507,
510, 511, 512, 513, 514, 515, 516, 517, 520, 521, 522, 523, 524, 525, 526,
527, 530, 531, 532, 533, 534, 535, 536, 537, 540, 541, 542, 543, 544, 545,
546, 547, 550, 551, 552, 553, 554, 555, 556, 557, 560, 561, 562, 563, 564,
565, 566, 567, 570, 571, 572, 573, 574, 575, 576, 577, 600, 601, 602, 603,
604, 605, 606, 607, 610, 611, 612, 613, 614, 615, 616, 617, 620, 621, 622,
623, 624, 625, 626, 627, 630, 631, 632, 633, 634, 635, 636, 637, 640, 641,
642, 643, 644, 645, 646, 647, 650, 651, 652, 653, 654, 655, 656, 657, 660,
661, 662, 663, 664, 665, 666, 667, 670, 671, 672, 673, 674, 675, 676, 677,
700, 701, 702, 703, 704, 705, 706, 707, 710, 711, 712, 713, 714, 715, 716,
717, 720, 721, 722, 723, 724, 725, 726, 727, 730, 731, 732, 733, 734, 735,
736, 737, 740, 741, 742, 743, 744, 745, 746, 747, 750, 751, 752, 753, 754,
755, 756, 757, 760, 761, 762, 763, 764, 765, 766, 767, 770, 771, 772, 773,
774, 775, 776, 777
Availability:
       Synth Format:DPL, DPL Invert
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:A/B Sequence
Tag:AUDIO:Sequence
Commands:GET, SET
Data Type:LIST
List Values: 1, 2, 3, 4
Availability:
       Synth Format:A/B Sequence
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms
```

```
Name:Code Sequence
Tag:AUDIO:Code Sequence
Commands:GET, SET
Data Type:STRING
Format:(GENSEQCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J
Availability:
        Synth Format:General Sequence
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:A/B Sequence Table
Tag:AUDIO:SEQUENCE Table
Commands:GO
Data Type:SUBMENU
Availability:
        Synth Format:A/B Sequence
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:2000 ms

Name:General Sequence Table
Tag:AUDIO:GENSEQ Table
Commands:GO
Data Type:SUBMENU
Availability:
        Synth Format:General Sequence
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:2000 ms

Name:5/6 Tone
Tag:AUDIO:5/6 Tone
Commands:GET, SET
Data Type:STRING
Format:(56Tone)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Availability:
        Synth Format:5/6 Tone
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:POCSAG Message
Tag:AUDIO:POCSAG Message
Commands:GET, SET
Data Type:LIST
List Values: Tone Only, NumericNum, NumericSet, AlphaNumUC, AlphaNumLC,
AlphaNumSP, NumericCust, AlphaNumCust
Availability:
        Synth Format:POCSAG
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
```

```
Typical Completion Time:100 ms

Name:POCSAG Table
Tag:AUDIO:POCSAG Table
Commands:GO
Data Type:SUBMENU
Availability:
        Synth Format:POCSAG
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:2000 ms

Name:Tone A Level (V)
Tag:AUDIO:Tone A
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 8
Availability:
        Operating Mode:Monitor
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone A Level (kHz)
Tag:AUDIO:Gen Tone A
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone A Level (%AM)
Tag:AUDIO:Gen AM Tone A
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone A Frequency (Hz)
Tag:AUDIO:Tone A Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 20000
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone A Mode
Tag:AUDIO:Tone A Mode
Commands:GET, SET
```

```
Data Type:LIST
List Values: Off, Continuous, Burst
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone B Level (V)
Tag:AUDIO:Tone B
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 8
Availability:
        Operating Mode:Monitor
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone B Level (kHz)
Tag:AUDIO:Gen Tone B
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone B Level (%AM)
Tag:AUDIO:Gen AM Tone B
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone B Frequency (Hz)
Tag:AUDIO:Tone B Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 20000
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone B Mode
Tag:AUDIO:Tone B Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
```

```
Typical Completion Time:100 ms

Name:Tone C Level (kHz)
Tag:AUDIO:Gen Tone C
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone C Level (%AM)
Tag:AUDIO:Gen AM Tone C
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone C Frequency (Hz)
Tag:AUDIO:Tone C Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100000
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Tone C Mode
Tag:AUDIO:Tone C Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:DTMF Level (V)
Tag:AUDIO:DTMF
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 8
Availability:
        Operating Mode:Monitor
        Menu:AUDIO
Typical Completion Time:100 ms

Name:DTMF Level (kHz)
Tag:AUDIO:Gen DTMF
Commands:GET, SET
```

```
Data Type:FLOAT
Range: 0  to 100
Availability:
       Operating Mode:Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:DTMF Level (%AM)
Tag:AUDIO:Gen AM DTMF
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
       Operating Mode:Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:DTMF Mode
Tag:AUDIO:DTMF Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst
Availability:
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:500 ms


Name:DTMF Code
Tag:AUDIO:DTMF Code
Commands:GET, SET
Data Type:STRING
Format:(DTMFCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, #, *
Availability:
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:DTMF Table
Tag:AUDIO:DTMF Table
Commands:GO
Data Type:SUBMENU
Availability:
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:2000 ms


Name:Microphone Level (V)
Tag:AUDIO:Microphone
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 8
Availability:
       Operating Mode:Monitor
      Menu:AUDIO
```

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Typical Completion Time:100 ms

Name:Microphone Level (kHz)
Tag:AUDIO:Gen Microphone
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Microphone Level (%AM)
Tag:AUDIO:Gen AM Microphone
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Microphone Mode
Tag:AUDIO:Microphone Mode
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, Continuous
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:AUDIO
Typical Completion Time:500 ms

Name:Mod In Port Level (kHz)
Tag:AUDIO:Gen Mod In Level
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Mod In Port Level (%AM)
Tag:AUDIO:Gen AM Mod In Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:100 ms

Name:Mod In Port Mode
Tag:AUDIO:Mod In Mode
Commands:GET, SET
```

```
Data Type:LIST
List Values: Off, Continuous
Availability:
       Operating Mode:Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:High Pass Filter
Tag:AUDIO:High Pass Filter
Commands:GET, SET
Data Type:LIST
List Values: 1 Hz, 300 Hz, 3 kHz
Availability:
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:Low Pass Filter
Tag:AUDIO:Low Pass Filter
Commands:GET, SET
Data Type:LIST
List Values: 300 Hz, 3 kHz, 20 kHz
Availability:
       Operating Mode:Monitor, Generate, Duplex
       Menu:AUDIO
Typical Completion Time:100 ms


Name:Voltage Units
Tag:AUDIO:Voltage Units
Commands:GET, SET
Data Type:LIST
List Values: Volts (V), Millivolts (mV), Decibel Volts (dBV)
Availability:
       Operating Mode:Monitor
       Menu:AUDIO
Typical Completion Time:100 ms


Name:Audio Sum
Tag:AUDIO:Audio Sum
Commands:GET
Data Type:FLOAT
Availability:
       Operating Mode:Monitor
       Menu:AUDIO
Typical Completion Time:0 ms


Name:Mod Sum
Tag:AUDIO:Mod Sum
Commands:GET
Data Type:FLOAT
Availability:
       Operating Mode:Generate, Duplex
       Menu:AUDIO
Typical Completion Time:0 ms
```

```
Name:AM Mod Sum
Tag:AUDIO:AM Mod Sum
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Generate, Duplex
        Menu:AUDIO
Typical Completion Time:0 ms


Name:PL Code
Tag:PL:PL Code
Commands:GET, SET
Data Type:LIST
List Values: XZ, WZ, XA, WA, XB, WB, YZ, YA, YB, ZZ, ZA, ZB, 1Z, 1A, 1B, 2Z,
2A, 2B, 3Z, 3A, 3B, 4Z, 4A, 4B, 5Z, 5A, 5B, 6Z, 6A, 6B, 7Z, 7A, M1, 8Z, M2,
M3, M4, 9Z, M5, M6, M7
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:PL
Typical Completion Time:100 ms


Name:DTMF Code
Tag:DTMF:DTMF Code
Commands:GET, SET
Data Type:STRING
Format:(DTMFCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, #, *
Availability:
        Menu:DTMF
Typical Completion Time:100 ms


Name:Tone Duration (ms)
Tag:DTMF:Duration
Commands:GET, SET
Data Type:INTEGER
Range: 40 to 9999
Availability:
        Menu:DTMF
Typical Completion Time:100 ms


Name:Inter-digit Delay (ms)
Tag:DTMF:Delay
Commands:GET, SET
Data Type:INTEGER
Range: 20 to 9999
Availability:
        Menu:DTMF
Typical Completion Time:100 ms


Name:Sequence
Tag:SEQUENCE:Sequence
Commands:GET, SET
Data Type:LIST
List Values: 1, 2, 3, 4
Availability:
```

```
        Menu:SEQUENCE
Typical Completion Time:100 ms


Name:Sequence 3 Tone A Duration (sec)
Tag:SEQUENCE:S3 Tone A Duration
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms


Name:Sequence 3 Tone A Delay (sec)
Tag:SEQUENCE:S3 Tone A Delay
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms


Name:Sequence 3 Tone B Duration (sec)
Tag:SEQUENCE:S3 Tone B Duration
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms


Name:Sequence 3 Tone B Delay (sec)
Tag:SEQUENCE:S3 Tone B Delay
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms


Name:Sequence 4 Tone A Duration (sec)
Tag:SEQUENCE:S4 Tone A Duration
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms


Name:Sequence 4 Tone A Delay (sec)
Tag:SEQUENCE:S4 Tone A Delay
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Menu:SEQUENCE
```

Typical Completion Time:100 ms

Name:Sequence 4 Tone B Duration (sec)
Tag:SEQUENCE:S4 Tone B Duration
Commands:GET, SET
Data Type:FLOAT
Range: 0 to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms

Name:Sequence 4 Tone B Delay (sec)
Tag:SEQUENCE:S4 Tone B Delay
Commands:GET, SET
Data Type:FLOAT
Range: 0 to 10
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms

Name:Tone A Frequency (Hz)
Tag:SEQUENCE:Tone A Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 0 to 20000
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms

Name:Tone B Frequency (Hz)
Tag:SEQUENCE:Tone B Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 0 to 20000
Availability:
        Menu:SEQUENCE
Typical Completion Time:100 ms

Name:Code Sequence
Tag:GENSEQ:Code Sequence
Commands:GET, SET
Data Type:STRING
Format:(GENSEQCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Select Tone Standard
Tag:GENSEQ:Standard
Commands:GET, SET
Data Type:LIST
List Values: None, CCIR1, CCIR2, PCCIR, CCITT, EEA, EIA, Euro, NATEL, MODAT,
ZVEI1, ZVEI2, ZVEI3, PZVEI, DZVEI, PDZVEI
Availability:

```
        Menu:GENSEQ
Typical Completion Time:500 ms

Name:Synth Mode
Tag:GENSEQ:Synth Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst [AUDIO:Format=A/B Sequence or
AUDIO:Format=5/6 Tone or AUDIO:Format=POCSAG or AUDIO:Format=General
Sequence], Disconnect Tone [AUDIO:Format=DPL or AUDIO:Format=DPL Invert]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:GENSEQ
Typical Completion Time:500 ms

Name:Select Symbol to Edit
Tag:GENSEQ:Select Tone
Commands:GET, SET
Data Type:LIST
List Values: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Tone Frequency(Hz)
Tag:GENSEQ:Edit Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 20000
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Tone Duration(sec)
Tag:GENSEQ:Edit Duration
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 0
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Post-Tone Delay(sec)
Tag:GENSEQ:Edit Delay
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 1
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Save Sequence Definition
Tag:GENSEQ:Save
Commands:GET, SET
Data Type:STRING
```

```
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J, K, L, M,
N, O, P, Q, R, S, T, U, V, W, X, Y, Z,  , ., _, (, )
Availability:
        Menu:GENSEQ
Typical Completion Time:2000 ms

Name:Load Sequence Definition
Tag:GENSEQ:Load
Commands:GET, SET
Data Type:LIST
List Values:
Availability:
        Menu:GENSEQ
Typical Completion Time:2000 ms

Name:Sync to Code Entry
Tag:GENSEQ:Sync Sequences
Commands:GET, SET
Data Type:BOOLEAN
List Values: No, Yes
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Duration Sequence
Tag:GENSEQ:Dur Sequence
Commands:GET, SET
Data Type:STRING
Format:(GENSEQCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Delay Sequence
Tag:GENSEQ:Delay Sequence
Commands:GET, SET
Data Type:STRING
Format:(GENSEQCode)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J
Availability:
        Menu:GENSEQ
Typical Completion Time:100 ms

Name:Spectrum Analyzer
Tag:INSTRUMENTS:SPEC_AN
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:INSTRUMENTS
Typical Completion Time:2000 ms

Name:Modulation Scope
Tag:INSTRUMENTS:MOD_SCOPE
Commands:GO
```

```
Data Type:SUBMENU
Availability:
        Menu:INSTRUMENTS
Typical Completion Time:2000 ms

Name:Oscilloscope
Tag:INSTRUMENTS:O_SCOPE
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:INSTRUMENTS
Typical Completion Time:2000 ms

Name:Dual Display
Tag:INSTRUMENTS:DUAL_SCOPE
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-ESA
        Menu:INSTRUMENTS
Typical Completion Time:2000 ms

Name:Tracking Generator
Tag:INSTRUMENTS:TRACK_GEN
Commands:GO
Data Type:SUBMENU
Availability:
        Option:R8-TG
        Menu:INSTRUMENTS
Typical Completion Time:5000 ms

Name:Single Port VNA
Tag:INSTRUMENTS:VNA
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:INSTRUMENTS
Typical Completion Time:9000 ms

Name:Presets
Tag:TEST:PRESETS
Commands:GO
Data Type:SUBMENU
Typical Completion Time:2000 ms

Name:Test Mode
Tag:TEST:Test Mode
Commands:GET, SET
Data Type:LIST
List Values: Standard, DMR [Option=R8-DMR], PROJECT 25 [Option=R8-P25], P25
Trunk [Option=R8-P25TRNK], NXDN [Option=R8-NXDN], NXDN Trunk [Option=R8-
NXDNTYPC], TETRA Base Station [Option=R8-TETRA_BSM], TETRA DMO [Option=R8-
TETRA_DMO], TETRA TMO [Option=R8-TETRA_TMO], DPMR [Option=R8-DPMR], P25 II
[Option=R8-P25_II], PTC-ITCR [Option=R8-PTC_ITCR], PTC-ACSES [Option=R8-
PTC_ACSES], AVIONICS [Option=R8-AVIONICS]
```

```
Typical Completion Time:5000 ms

Name:AutoScript
Tag:TEST:AUTOSCRIPT
Commands:GO
Data Type:SUBMENU
Typical Completion Time:0 ms

Name:Calibration
Tag:SETTINGS:CALIBRATION
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:SETTINGS
Typical Completion Time:0 ms

Name:System Settings
Tag:SETTINGS:SETUP
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:SETTINGS
Typical Completion Time:2000 ms

Name:Battery Status
Tag:SETTINGS:BATTERY
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:SETTINGS
Typical Completion Time:2000 ms

Name:Acknowledge Message
Tag:SETTINGS:ACK_MESSAGE
Commands:DO
Data Type:FUNCTION
Availability:
        Menu:SETTINGS
Typical Completion Time:0 ms

Name:About
Tag:SETTINGS:ABOUT
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:SETTINGS
Typical Completion Time:2000 ms

Name:Options
Tag:SETTINGS:OPTIONS
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:SETTINGS
Typical Completion Time:2000 ms
```

```
Name:PLL Lock Status
Tag:MONITOR:PLL Status
Commands:GET
Data Type:INTEGER
Typical Completion Time:0 ms


Name:High Power Attenuator Temp
Tag:MONITOR:HP Attenuator Temp
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Typical Completion Time:0 ms


Name:Receive Power Meter Temp
Tag:MONITOR:RX Power Meter Temp
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Typical Completion Time:0 ms


Name:Generate Power Meter Temp
Tag:MONITOR:Gen Power Meter Temp
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Typical Completion Time:0 ms


Name:Frequency Error (Hz)
Tag:MONITOR:Frequency Error
Commands:GET
Data Type:FLOAT
Typical Completion Time:0 ms


Name:Frequency Error (PPM)
Tag:MONITOR:Frequency Error PPM
Commands:GET
Data Type:FLOAT
Typical Completion Time:0 ms


Name:Input Level
Tag:MONITOR:Input Level
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:0 ms


Name:Input Level
Tag:MONITOR:Input Lvl
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:0 ms
```

```
Name:Deviation
Tag:MONITOR:Deviation+
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:0 ms

Name:Deviation
Tag:MONITOR:Deviation-
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
Typical Completion Time:0 ms

Name:Center Frequency
Tag:SPEC_AN:Monitor Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:5000 ms

Name:Span
Tag:SPEC_AN:Span
Commands:GET, SET
Data Type:FLOAT
Range: 9751 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:5000 ms

Name:Start Frequency
Tag:SPEC_AN:Start Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:5000 ms

Name:Stop Frequency
Tag:SPEC_AN:Stop Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
```

```
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:5000 ms


Name:Resolution Bandwidth
Tag:SPEC_AN:Resolution Bandwidth
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:0 ms


Name:Reference Level (dBm)
Tag:SPEC_AN:Reference Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 90
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:100 ms


Name:Vertical Scale
Tag:SPEC_AN:Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 10 dB/div, 5 dB/div, 2 dB/div, 1 dB/div
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:100 ms


Name:Display Mode
Tag:SPEC_AN:Display Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Freeze, Max Hold, Average
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:100 ms


Name:Trace Math
Tag:SPEC_AN:Trace Math
Commands:GET, SET
Data Type:LIST
List Values: None, Spec-Ref (log),
Spec-Ref
 (lin), Spec+Ref (lin)
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
```

```
Typical Completion Time:100 ms

Name:Set Reference Trace
Tag:SPEC_AN:Set Reference Trace
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:Detector
Tag:SPEC_AN:Detector
Commands:GET, SET
Data Type:LIST
List Values: Power, Peak, Sample, Mean, Valley
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:200 ms

Name:Find Peak
Tag:SPEC_AN:Find Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:Center Peak
Tag:SPEC_AN:Center Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:SPEC_AN
Typical Completion Time:5000 ms

Name:OBW
Tag:SPEC_AN:OBW
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:OBW %
Tag:SPEC_AN:OBW %
Commands:GET, SET
Data Type:INTEGER
Range: 70 to 99
```

```
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:CW Harmonics
Tag:SPEC_AN:CW Harmonics
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:Measure Harmonics
Tag:SPEC_AN:Harmonics Meas
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:Harmonics
Tag:SPEC_AN:Harmonics
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:Harmonics Frequencies
Tag:SPEC_AN:Harmonic Freqs
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-ESA
        Menu:SPEC_AN
Typical Completion Time:100 ms

Name:Select Instrument
Tag:DUAL_SCOPE:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Spectrum Analyzer, Modulation Scope
Availability:
        Menu:DUAL_SCOPE
Typical Completion Time:100 ms
```

```
Name:Span
Tag:DUAL_SCOPE:Span
Commands:GET, SET
Data Type:FLOAT
Range: 9751 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:5000 ms

Name:Start Frequency
Tag:DUAL_SCOPE:Start Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:5000 ms

Name:Stop Frequency
Tag:DUAL_SCOPE:Stop Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:5000 ms

Name:Resolution Bandwidth
Tag:DUAL_SCOPE:Resolution Bandwidth
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:0 ms

Name:Reference Level (dBm)
Tag:DUAL_SCOPE:Reference Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 90
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:100 ms

Name:Vertical Scale
Tag:DUAL_SCOPE:Vertical Scale
```

```
Commands:GET, SET
Data Type:LIST
List Values: 10 dB/div, 5 dB/div, 2 dB/div, 1 dB/div
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:100 ms


Name:Display Mode
Tag:DUAL_SCOPE:Display Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Freeze, Max Hold, Average
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:100 ms


Name:Trace Math
Tag:DUAL_SCOPE:Trace Math
Commands:GET, SET
Data Type:LIST
List Values: None, Spec-Ref (log),
Spec-Ref
  (lin), Spec+Ref (lin)
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:100 ms


Name:Set Reference Trace
Tag:DUAL_SCOPE:Set Reference Trace
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:100 ms


Name:Detector
Tag:DUAL_SCOPE:Detector
Commands:GET, SET
Data Type:LIST
List Values: Power, Peak, Sample, Mean, Valley
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:200 ms


Name:Find Peak
Tag:DUAL_SCOPE:Find Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
```

```
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:100 ms


Name:Center Peak
Tag:DUAL_SCOPE:Center Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DUAL_SCOPE:Subzone=Spectrum Analyzer
Typical Completion Time:5000 ms


Name:Vertical Scale
Tag:DUAL_SCOPE:AM Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 1%, 2%, 5%, 10%, 20%, 50%
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms


Name:Vertical Scale
Tag:DUAL_SCOPE:FM Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 5 kHz, 10 kHz, 20 kHz, 50
kHz
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms


Name:Horizontal Scale
Tag:DUAL_SCOPE:Horizontal Scale
Commands:GET, SET
Data Type:LIST
List Values: 20 us, 50 us, 100 us, 200 us, 500 us, 1 ms, 2 ms, 5 ms, 10 ms,
20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms


Name:Trigger Mode
Tag:DUAL_SCOPE:Trigger
Commands:GET, SET
Data Type:LIST
List Values: Auto, Normal, Single
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms


Name:Trigger Level
Tag:DUAL_SCOPE:Trigger Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 200000
```

```
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms

Name:Trigger Level (%)
Tag:DUAL_SCOPE:AM Trigger Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms

Name:Trigger Position
Tag:DUAL_SCOPE:Trigger Position
Commands:GET, SET
Data Type:LIST
List Values: 10%, 50%, 90%
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:0 ms

Name:Trigger Edge
Tag:DUAL_SCOPE:Trigger Edge
Commands:GET, SET
Data Type:LIST
List Values: Rising, Falling, Either
Availability:
        Menu:DUAL_SCOPE:Subzone=Modulation Scope
Typical Completion Time:100 ms

Name:Scope Mode
Tag:DUAL_SCOPE:Mod Scope Select
Commands:GET, SET
Data Type:BOOLEAN
List Values: Monitor, Generate
Availability:
        Operating Mode:Duplex
        Menu:DUAL_SCOPE
Typical Completion Time:100 ms

Name:Center Frequency
Tag:TRACK_GEN:Generate Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:5000 ms

Name:Span
Tag:TRACK_GEN:Span
Commands:GET, SET
```

```
Data Type:FLOAT
Range: 1 Hz to 50000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:5000 ms


Name:Start Frequency
Tag:TRACK_GEN:Start Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 3000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:5000 ms


Name:Stop Frequency
Tag:TRACK_GEN:Stop Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 259751 Hz to 3000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:5000 ms


Name:Reference Level (dBm)
Tag:TRACK_GEN:Reference Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 60
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:Vertical Scale
Tag:TRACK_GEN:Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 15 dB/div, 10 dB/div, 5 dB/div, 2 dB/div, 1 dB/div
Availability:
        Operating Mode:Track Gen
        Option:R8-ESA
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:# of Points
Tag:TRACK_GEN:Number of Points
Commands:GET, SET
Data Type:INTEGER
```

```
Range: 100 to 600
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:4000 ms


Name:RBW
Tag:TRACK_GEN:RBW
Commands:GET, SET
Data Type:LIST
List Values: Wide, Medium, Narrow
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:4000 ms


Name:Display Mode
Tag:TRACK_GEN:Display Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Freeze, Max Hold, Average
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:Marker Mode
Tag:TRACK_GEN:SA Markers
Commands:GET, SET
Data Type:LIST
List Values: Off, Absolute, Delta
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:Marker Type
Tag:TRACK_GEN:Marker Type
Commands:GET, SET
Data Type:LIST
List Values: Point Cross, Vertical Bar, Horizontal Bar, Full Cross
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:Toggle Marker
Tag:TRACK_GEN:Toggle Marker
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms
```

```
Name:Select Marker
Tag:TRACK_GEN:Select Marker
Commands:GET, SET
Data Type:LIST
List Values: 1, 2, 3, 4
Availability:
        Operating Mode:Track Gen
        Option:R8-ESA
        Menu:TRACK_GEN
Typical Completion Time:100 ms

Name:Set Marker Frequency
Tag:TRACK_GEN:Marker Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms

Name:Find Peak
Tag:TRACK_GEN:Find Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms

Name:Find Valley
Tag:TRACK_GEN:Find Valley
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms

Name:Center Marker
Tag:TRACK_GEN:Center Marker
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:5000 ms

Name:Output Level (dBm)
Tag:TRACK_GEN:Output Level
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 5
Availability:
```

```
       Operating Mode:Track Gen
       Menu:TRACK_GEN
Typical Completion Time:500 ms


Name:Attenuation
Tag:TRACK_GEN:Attenuation
Commands:GET, SET
Data Type:LIST
List Values: 0 dB, 2 dB, 4 dB, 6 dB, 8 dB, 10 dB, 12 dB, 14 dB, 16 dB, 18 dB,
20 dB, 22 dB, 24 dB, 26 dB, 28 dB, 30 dB, 32 dB, 34 dB, 36 dB, 38 dB, 40 dB,
42 dB, 44 dB, 46 dB, 48 dB, 50 dB, 52 dB, 54 dB, 56 dB, 58 dB, 60 dB, 62 dB
Availability:
       Operating Mode:Track Gen
       Menu:TRACK_GEN
Typical Completion Time:500 ms


Name:Pre-Amplifier
Tag:TRACK_GEN:PreAmp On
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
       Operating Mode:Track Gen
       Menu:TRACK_GEN
Typical Completion Time:500 ms


Name:Gen Port
Tag:TRACK_GEN:Generate Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Gen Out
Availability:
       Operating Mode:Track Gen
       Menu:TRACK_GEN
Typical Completion Time:500 ms


Name:Monitor Port
Tag:TRACK_GEN:Monitor Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Antenna
Availability:
       Operating Mode:Track Gen
       Menu:TRACK_GEN
Typical Completion Time:500 ms


Name:Normalize
Tag:TRACK_GEN:Normalize
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
       Operating Mode:Track Gen
       Menu:TRACK_GEN
Typical Completion Time:500 ms
```

```
Name:Update Trace
Tag:TRACK_GEN:Trace Request
Commands:
Data Type:BOOLEAN
List Values: F, T
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:
Tag:TRACK_GEN:Trace
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Track Gen
        Menu:TRACK_GEN
Typical Completion Time:100 ms


Name:Coupling
Tag:O_SCOPE:Coupling
Commands:GET, SET
Data Type:BOOLEAN
List Values: DC, AC
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms


Name:Horizontal Scale
Tag:O_SCOPE:Ext Horizontal Scale
Commands:GET, SET
Data Type:LIST
List Values: 20 us (Max 50 kHz In), 50 us (Max 20 kHz In), 100 us (Max 10 kHz
In), 200 us (Max 5 kHz In), 500 us (Max 2 kHz In), 1 ms (Max 1 kHz In), 2 ms
(Max 500 Hz In), 5 ms (Max 200 Hz In), 10 ms (Max 100 Hz In), 20 ms (Max 50
Hz In), 50 ms (Max 20 Hz In), 100 ms (Max 10 Hz In), 200 ms (Max 5 Hz In),
500 ms (Max 2 Hz In), 1 s (Max 1 Hz In)
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms


Name:Vertical Scale
Tag:O_SCOPE:Ext Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 50 mV, 100 mV, 200 mV, 500 mV, 1 V, 2 V, 5 V, 10 V, 15 V, 20 V,
25 V
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms


Name:Trigger Mode
Tag:O_SCOPE:Ext Trigger
Commands:GET, SET
```

```
Data Type:LIST
List Values: Auto, Normal, Single, Freeze
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms

Name:Trigger Level
Tag:O_SCOPE:Ext Trigger Level
Commands:GET, SET
Data Type:FLOAT
Range:  0  to 100
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms

Name:Trigger Position
Tag:O_SCOPE:Ext Trigger Position
Commands:GET, SET
Data Type:LIST
List Values: 10%, 50%, 90%
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms

Name:Trigger Edge
Tag:O_SCOPE:Ext Trigger Edge
Commands:GET, SET
Data Type:LIST
List Values: Rising, Falling, Either
Availability:
        Menu:O_SCOPE
Typical Completion Time:500 ms

Name:Vertical Scale
Tag:MOD_SCOPE:AM Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 1%, 2%, 5%, 10%, 20%, 50%
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Vertical Scale
Tag:MOD_SCOPE:FM Vertical Scale
Commands:GET, SET
Data Type:LIST
List Values: 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 5 kHz, 10 kHz, 20 kHz, 50
kHz
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Horizontal Scale
Tag:MOD_SCOPE:Horizontal Scale
Commands:GET, SET
```

```
Data Type:LIST
List Values: 20 us, 50 us, 100 us, 200 us, 500 us, 1 ms, 2 ms, 5 ms, 10 ms,
20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Trigger Mode
Tag:MOD_SCOPE:Trigger
Commands:GET, SET
Data Type:LIST
List Values: Auto, Normal, Single
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Trigger Level
Tag:MOD_SCOPE:Trigger Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 200000
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Trigger Level (%)
Tag:MOD_SCOPE:AM Trigger Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 99
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Trigger Position
Tag:MOD_SCOPE:Trigger Position
Commands:GET, SET
Data Type:LIST
List Values: 10%, 50%, 90%
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:0 ms

Name:Trigger Edge
Tag:MOD_SCOPE:Trigger Edge
Commands:GET, SET
Data Type:LIST
List Values: Rising, Falling, Either
Availability:
        Menu:MOD_SCOPE
Typical Completion Time:100 ms

Name:Scope Mode
Tag:MOD_SCOPE:Mod Scope Select
Commands:GET, SET
```

```
Data Type:BOOLEAN
List Values: Monitor, Generate
Availability:
        Operating Mode:Duplex
        Menu:MOD_SCOPE
Typical Completion Time:100 ms


Name:System Version
Tag:ABOUT:SystemVersion
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Application Version
Tag:ABOUT:AppVersion
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:R8000 Library Version
Tag:ABOUT:DllVersion
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Signal Service Provider Version
Tag:ABOUT:SSP_Version
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Audio Library Version
Tag:ABOUT:AudioVersion
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Operating System Version
Tag:ABOUT:OSVersion
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms
```

```
Name:BIOS Version
Tag:ABOUT:BIOSVersion
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Main Board Revision
Tag:ABOUT:MainPCBA
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:RF Board Revision
Tag:ABOUT:RfPCBA
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Control FPGA Version
Tag:ABOUT:ControlFPGA
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:
Tag:ABOUT:TxFPGA
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:RX FPGA Version
Tag:ABOUT:RxFPGA
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms


Name:Comm FPGA Version
Tag:ABOUT:PCIeFPGA
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms
```

```
Name:XTX BC Version
Tag:ABOUT:XTX_BC
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms

Name:XTX Product Revision
Tag:ABOUT:XTX_Product
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms

Name:XTX Serial Number
Tag:ABOUT:XTX_Serial
Commands:GET
Data Type:STRING
Availability:
        Menu:ABOUT
Typical Completion Time:0 ms

Name:Cable Sweep Table
Tag:SETUP:CABLE_SWEEP
Commands:GO
Data Type:SUBMENU
Availability:
        Menu:SETUP
Typical Completion Time:2000 ms

Name:Input Decoding
Tag:SETUP:Input Decoding
Commands:GET, SET
Data Type:BOOLEAN
List Values: Internal, External
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Input Impedance
Tag:SETUP:Input Impedance
Commands:GET, SET
Data Type:BOOLEAN
List Values: 1 MegOhm, 600 Ohm
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Reference Clock Mode
Tag:SETUP:Ref Clock Mode
Commands:GET, SET
Data Type:BOOLEAN
```

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```
List Values: Output, Input
Availability:
        Menu:SETUP
Typical Completion Time:500 ms

Name:Analog Measurement Averaging
Tag:SETUP:Analog Msr Averaging
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Analog Averaging Samples
Tag:SETUP:Analog Msr Avg Samples
Commands:GET, SET
Data Type:INTEGER
Range: 2 to 100
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Digital Measurement Averaging
Tag:SETUP:Digital Msr Averaging
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Digital Averaging Samples
Tag:SETUP:Digital Msr Avg Samples
Commands:GET, SET
Data Type:INTEGER
Range: 2 to 100
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Automatic Attenuation
Tag:SETUP:Auto Attn
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Auto Attn Minimum
Tag:SETUP:Auto Attn Min
Commands:GET, SET
Data Type:LIST
```

List Values: 0 dB, 2 dB, 4 dB, 6 dB, 8 dB, 10 dB, 12 dB, 14 dB, 16 dB, 18 dB,
20 dB, 22 dB, 24 dB, 26 dB, 28 dB, 30 dB, 32 dB, 34 dB
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Auto Attn High Threshold
Tag:SETUP:Auto Attn Thd Hi
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 0
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Auto Attn Low Threshold
Tag:SETUP:Auto Attn Thd Lo
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 0
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Pre-Amplifier Auto Off
Tag:SETUP:PreAmp Auto Off
Commands:GET, SET
Data Type:BOOLEAN
List Values: Disabled, Enabled
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:RF Level Offset
Tag:SETUP:RF Level Offset
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:RF In/Out Offset (dB)
Tag:SETUP:RF In/Out Offset
Commands:GET, SET
Data Type:FLOAT
Range: 0 to 99
Availability:
        Menu:SETUP
Typical Completion Time:500 ms

Name:RF Gen Out Offset (dB)
Tag:SETUP:RF Gen Out Offset
Commands:GET, SET
Data Type:FLOAT

```
Range: 0  to 99
Availability:
        Menu:SETUP
Typical Completion Time:500 ms

Name:Cable Sweep Enable
Tag:SETUP:Cable Sweep State
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Cable Sweep File
Tag:SETUP:Cable Sweep Files
Commands:GET, SET
Data Type:LIST
List Values:
Availability:
        Menu:SETUP
Typical Completion Time:0 ms

Name:Antenna Offset (dB)
Tag:SETUP:Antenna Offset
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 99
Availability:
        Menu:SETUP
Typical Completion Time:500 ms

Name:Mod Out Range
Tag:SETUP:Mod Out Range
Commands:GET, SET
Data Type:LIST
List Values: High, Low [ABOUT:RfPCBA not like ^[0-8]$]
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Mod Out DC Offset (mV)
Tag:SETUP:ModOutDC_Offset
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 300
Availability:
        Menu:SETUP
Typical Completion Time:500 ms

Name:Pre/De-emphasis
Tag:SETUP:Emphasis
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
```

```
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Meter In Filter
Tag:SETUP:Meter In Filter
Commands:GET, SET
Data Type:LIST
List Values: None, C-Msg, CCITT, De-emphasis
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Internal Audio Weighting
Tag:SETUP:Internal Audio Weight
Commands:GET, SET
Data Type:LIST
List Values: None, C-Msg, CCITT
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Language
Tag:SETUP:Language Select
Commands:GET, SET
Data Type:LIST
List Values: English, Spanish
Availability:
        Menu:SETUP
Typical Completion Time:6000 ms

Name:Date
Tag:SETUP:NewDate
Commands:GET, SET
Data Type:STRING
Format:(MM.DD.YYYY)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, .
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Time
Tag:SETUP:NewTime
Commands:GET, SET
Data Type:STRING
Format:(HH:MM)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, :
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:Apply Date/Time Changes
Tag:SETUP:ApplyDateTime
Commands:DO
Data Type:FUNCTION
```

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```
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:R8000 Legacy Mode
Tag:SETUP:Legacy
Commands:GET, SET
Data Type:LIST
List Values: Standard R8100, Legacy R8000
Availability:
        Menu:SETUP
Typical Completion Time:500 ms

Name:Reset to Defaults
Tag:SETUP:DefaultSetups
Commands:DO
Data Type:FUNCTION
Availability:
        Menu:SETUP
Typical Completion Time:100 ms

Name:
Tag:BATTERY:SerialNumber
Commands:GET
Data Type:INTEGER
Availability:
        Menu:BATTERY
Typical Completion Time:0 ms

Name:
Tag:BATTERY:TimeToEmpty
Commands:GET
Data Type:FLOAT
Availability:
        Menu:BATTERY
Typical Completion Time:0 ms

Name:
Tag:BATTERY:TimeToFull
Commands:GET
Data Type:FLOAT
Availability:
        Menu:BATTERY
Typical Completion Time:0 ms

Name:
Tag:BATTERY:Temperature
Commands:GET
Data Type:FLOAT
Availability:
        Menu:BATTERY
Typical Completion Time:0 ms

Name:
Tag:BATTERY:CycleCount
```

```
Commands:GET
Data Type:INTEGER
Availability:
      Menu:BATTERY
Typical Completion Time:0 ms


Name:
Tag:BATTERY:Charge
Commands:GET
Data Type:FLOAT
Availability:
      Menu:BATTERY
Typical Completion Time:0 ms


Name:
Tag:BATTERY:Charging
Commands:GET
Data Type:BOOLEAN
List Values:
Availability:
      Menu:BATTERY
Typical Completion Time:0 ms


Name:Save Configuration As
Tag:PRESETS:New
Commands:GET, SET
Data Type:STRING
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J, K, L, M,
N, O, P, Q, R, S, T, U, V, W, X, Y, Z,  , ., _, (, )
Availability:
      Menu:PRESETS
Typical Completion Time:2000 ms


Name:Load Factory Configuration
Tag:PRESETS:Load Defaults
Commands:DO
Data Type:FUNCTION
Availability:
      Menu:PRESETS
Typical Completion Time:15000 ms


Name:RF Level Offset
Tag:AUTOTUNE:RF Level Offset
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
      Menu:AUTOTUNE
Typical Completion Time:100 ms


Name:RF In/Out Offset (dB)
Tag:AUTOTUNE:RF In/Out Offset
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 99
```

```
Availability:
        Menu:AUTOTUNE
Typical Completion Time:500 ms

Name:Cable Sweep Enable
Tag:AUTOTUNE:Cable Sweep State
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:AUTOTUNE
Typical Completion Time:100 ms

Name:Cable Sweep File
Tag:AUTOTUNE:Cable Sweep Files
Commands:GET, SET
Data Type:LIST
List Values:
Availability:
        Menu:AUTOTUNE
Typical Completion Time:0 ms

Name:Voice Loopback
Tag:DMR:Voice Loopback
Commands:GET
Data Type:LIST
List Values: Off, Record [Operating Mode=Monitor], Play [Operating
Mode=Generate], Record & Play
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DMR
Typical Completion Time:0 ms

Name:DMR Mon Sync Status
Tag:DMR:Sync
Commands:GET
Data Type:BOOLEAN
List Values:
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms

Name:Mon Sync Pattern
Tag:DMR:SYNC Pattern
Commands:GET, SET
Data Type:LIST
List Values: BS Sourced Voice [DMR:UUT_Cfg=Repeater Live or DMR:UUT_Cfg=BS
Test], BS Sourced Data [DMR:UUT_Cfg=Repeater Live or DMR:UUT_Cfg=BS Test], MS
Sourced Voice [DMR:UUT_Cfg=MS Test], MS Sourced Data [DMR:UUT_Cfg=MS Test],
TDMA slot 1 Voice [DMR:UUT_Cfg=MS Test], TDMA slot 1 Data [DMR:UUT_Cfg=MS
Test], TDMA slot 2 Voice [DMR:UUT_Cfg=MS Test], TDMA slot 2 Data
[DMR:UUT_Cfg=MS Test]
Availability:
        Operating Mode:Monitor, Duplex
```

```
        Menu:DMR
Typical Completion Time:100 ms

Name:
Tag:DMR:SYNC Count
Commands:GET
Data Type:INTEGER
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms

Name:Source ID
Tag:DMR:Source ID
Commands:GET
Data Type:INTEGER
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms

Name:Color Code
Tag:DMR:Monitor CC
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms

Name:Copy CC to Generator
Tag:DMR:Copy CC to Generator
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:100 ms

Name:Color Code
Tag:DMR:Color Code
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 15
Availability:
        Operating Mode:Generate, Duplex
        Menu:DMR
Typical Completion Time:100 ms

Name:Burst
Tag:DMR:Burst
Commands:GET, SET
Data Type:LIST
List Values: A, B, C, D, E, F
Availability:
```

```
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:100 ms


Name:BER Test
Tag:DMR:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:500 ms


Name:Modulation Mode
Tag:DMR:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
        Operating Mode:Generate, Duplex
        Menu:DMR
Typical Completion Time:500 ms


Name:Test Pattern
Tag:DMR:Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1031 Hz Tone, Calibration (O.153 1%) [Operating Mode=Generate or
Operating Mode=Duplex], O.153, Silence [Operating Mode=Generate or Operating
Mode=Duplex], BS Busy [Operating Mode=Generate or Operating Mode=Duplex], BS
Idle [Operating Mode=Generate or Operating Mode=Duplex]
Availability:
        Operating Mode:Generate, Duplex
        Menu:DMR
Typical Completion Time:100 ms


Name:Symbol Deviation (Hz)
Tag:DMR:Symbol Deviation
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms


Name:
Tag:DMR:FSK Error
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms
```

```
Name:
Tag:DMR:Magnitude Error
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms


Name:Symbol Rate Error (mHz)
Tag:DMR:Sym Rate Err
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms


Name:
Tag:DMR:BER Result
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:DMR
Typical Completion Time:0 ms


Name:DMR Library Version
Tag:DMR:Version
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DMR
Typical Completion Time:0 ms


Name:UUT Configuration
Tag:DMR:UUT_Cfg
Commands:GET, SET
Data Type:LIST
List Values: MS Test, BS Test, Repeater Live [Option=R8-DMR_RPTR]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:DMR
Typical Completion Time:100 ms


Name:Eye Diagram Data
Tag:DMR:Eye Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
```

```
        Menu:DMR
Typical Completion Time:100 ms

Name:
Tag:P25:BER Result
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Menu:P25
Typical Completion Time:0 ms

Name:Symbol Deviation (Hz)
Tag:P25:Symbol Deviation
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:0 ms

Name:Symbol Rate Error (mHz)
Tag:P25:Symbol Rate Error
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:0 ms

Name:
Tag:P25:EVM
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:0 ms

Name:
Tag:P25:Modulation Fidelity
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:0 ms

Name:Mon Test Pattern
Tag:P25:Mon Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1011 Hz Tone, Calibration (Tone 5%), Standard Tx (O.153/V.52),
Silence, Modified 1011 Hz
Availability:
```

```
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Gen Test Pattern
Tag:P25:Gen Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1011 Hz Tone, Calibration (Tone 5%), Standard Tx (O.153/V.52),
Silence, Symbol Rate [Operating Mode=Generate], Low Deviation [Operating
Mode=Generate], C4FM Mod Fidelity [Operating Mode=Generate]
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Generate Modulation Type
Tag:P25:Modulation Type
Commands:GET, SET
Data Type:LIST
List Values: FM [Test Mode=Standard], AM [Test Mode=Standard], USB [Test
Mode=Standard and Option=R8-SSB], LSB [Test Mode=Standard and Option=R8-SSB],
4FSK [Test Mode=DMR or Test Mode=DPMR or Test Mode=NXDN], GMSK~ [Test
Mode=PTC-ACSES], C4FM [Test Mode=PROJECT 25 or Test Mode=P25 Trunk], LSM
[Test Mode=PROJECT 25 or Test Mode=P25 Trunk], WCQPSK [Test Mode=PROJECT 25
or Test Mode=P25 Trunk], pi/4 DQPSK [Test Mode=PTC-ITCR or Test Mode=TETRA
DMO or Test Mode=TETRA TMO or Test Mode=TETRA BST], HCPM [Test Mode=P25 II],
HDQPSK [Test Mode=P25 II and Operating Mode=Monitor or Test Mode=P25 II and
Operating Mode=Generate]
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Modulation Mode
Tag:P25:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25
Typical Completion Time:500 ms


Name:NAC (Hex)
Tag:P25:NAC
Commands:GET, SET
Data Type:STRING
Format:0x000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Monitor Modulation Type
```

```
Tag:P25:Mon Mod Type
Commands:GET, SET
Data Type:LIST
List Values: C4FM, LSM, WCQPSK
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Monitor NAC
Tag:P25:Monitor NAC
Commands:
Data Type:STRING
Format:0x000
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Reset Symbol Rate Error
Tag:P25:Reset SRE
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:BER Test
Tag:P25:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:500 ms


Name:Eye Diagram Data
Tag:P25:Eye Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms


Name:Voice Frame Encoder
Tag:P25:P25_VFENCODE Table
Commands:GO
Data Type:SUBMENU
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25
Typical Completion Time:2000 ms
```

```
Name:Voice Frame Data
Tag:P25:Voice Frames
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms

Name:Copy NAC to Generator
Tag:P25:Copy NAC to Generator
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25
Typical Completion Time:100 ms

Name:Project 25 Library Version
Tag:P25:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:P25
Typical Completion Time:0 ms

Name:NAC (Hex)
Tag:P25_VFENCODE:NAC
Commands:GET, SET
Data Type:STRING
Format:0x000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms

Name:Key ID (Hex)
Tag:P25_VFENCODE:KID
Commands:GET, SET
Data Type:STRING
Format:0x0000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms

Name:Algorithm ID (Hex)
Tag:P25_VFENCODE:ALGID
Commands:GET, SET
Data Type:STRING
Format:0x00
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
```

```
Typical Completion Time:100 ms

Name:Status Symbols
Tag:P25_VFENCODE:SS
Commands:GET, SET
Data Type:LIST
List Values: 0 - Unknown Talkaround, 1 - Busy, 2 - Unknown In/Out, 3 - Idle
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms

Name:Low Speed Data (Hex)
Tag:P25_VFENCODE:LSD
Commands:GET, SET
Data Type:STRING
Format:0x00000000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms

Name:Talk Group ID (Hex)
Tag:P25_VFENCODE:Group Address
Commands:GET, SET
Data Type:STRING
Format:0x0000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms

Name:MFID (Hex)
Tag:P25_VFENCODE:MFID
Commands:GET, SET
Data Type:STRING
Format:0x00
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms

Name:Raw (Hex)
Tag:P25_VFENCODE:Raw
Commands:GET, SET
Data Type:STRING
Format:0x000000000000000000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE:Subzone=Raw
Typical Completion Time:100 ms

Name:Link Control Opcode
Tag:P25_VFENCODE:Subzone
Commands:GET, SET
```

```
Data Type:LIST
List Values: Raw, 0 - LC_GRP_V_CH_USR, 3 - LC_U2U_V_CH_USR
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:100 ms


Name:SF - MFID Format
Tag:P25_VFENCODE:SF
Commands:GET, SET
Data Type:LIST
List Values: 0 - Explicit Format, 1 - Standard MFID
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE:Subzone=0 - LC_GRP_V_CH_USR, 3 - LC_U2U_V_CH_USR
Typical Completion Time:100 ms


Name:Service Options (Hex)
Tag:P25_VFENCODE:Service Options
Commands:GET, SET
Data Type:STRING
Format:0x00
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE:Subzone=0 - LC_GRP_V_CH_USR, 3 - LC_U2U_V_CH_USR
Typical Completion Time:100 ms


Name:S - Explicit Source ID
Tag:P25_VFENCODE:S
Commands:GET, SET
Data Type:LIST
List Values: 0 - Not Required, 1 - Required
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE:Subzone=0 - LC_GRP_V_CH_USR
Typical Completion Time:100 ms


Name:Target Address (Hex)
Tag:P25_VFENCODE:Target Address
Commands:GET, SET
Data Type:STRING
Format:0x000000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE:Subzone=3 - LC_U2U_V_CH_USR
Typical Completion Time:100 ms


Name:Source Address (Hex)
Tag:P25_VFENCODE:Source Address
Commands:GET, SET
Data Type:STRING
Format:0x000000
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE:Subzone=0 - LC_GRP_V_CH_USR, 3 - LC_U2U_V_CH_USR
```

Typical Completion Time:100 ms

Name:Reset to Defaults
Tag:P25_VFENCODE:Reset
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_VFENCODE
Typical Completion Time:200 ms

Name:Subzone
Tag:P25_TRUNK:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Alert/Dispatch, BER
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK
Typical Completion Time:100 ms

Name:Generate Modulation Type
Tag:P25_TRUNK:Modulation Type
Commands:GET, SET
Data Type:LIST
List Values: FM [Test Mode=Standard], AM [Test Mode=Standard], USB [Test
Mode=Standard and Option=R8-SSB], LSB [Test Mode=Standard and Option=R8-SSB],
4FSK [Test Mode=DMR or Test Mode=DPMR or Test Mode=NXDN], GMSK~ [Test
Mode=PTC-ACSES], C4FM [Test Mode=PROJECT 25 or Test Mode=P25 Trunk], LSM
[Test Mode=PROJECT 25 or Test Mode=P25 Trunk], WCQPSK [Test Mode=PROJECT 25
or Test Mode=P25 Trunk], pi/4 DQPSK [Test Mode=PTC-ITCR or Test Mode=TETRA
DMO or Test Mode=TETRA TMO or Test Mode=TETRA BST], HCPM [Test Mode=P25 II],
HDQPSK [Test Mode=P25 II and Operating Mode=Monitor or Test Mode=P25 II and
Operating Mode=Generate]
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK
Typical Completion Time:100 ms

Name:Modulation Mode
Tag:P25_TRUNK:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=BER
Typical Completion Time:500 ms

Name:NAC (Hex)
Tag:P25_TRUNK:NAC
Commands:GET, SET
Data Type:STRING
Format:0x000
Availability:

```
        Operating Mode:Duplex
        Menu:P25_TRUNK
Typical Completion Time:100 ms


Name:Voice Call
Tag:P25_TRUNK:Voice Call
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Send Call Alert
Tag:P25_TRUNK:Call Alert
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:WACN ID (Hex)
Tag:P25_TRUNK:WACN ID
Commands:GET, SET
Data Type:STRING
Format:0x00000
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:SYSTEM ID (Hex)
Tag:P25_TRUNK:SYSTEM ID
Commands:GET, SET
Data Type:STRING
Format:0x000
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:WUID (Hex)
Tag:P25_TRUNK:WUID
Commands:GET, SET
Data Type:STRING
Format:0x000000
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:RFSS ID (Hex)
Tag:P25_TRUNK:RFSS ID
```

```
Commands:GET, SET
Data Type:STRING
Format:0x00
Availability:
       Operating Mode:Duplex
       Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:WGID (Hex)
Tag:P25_TRUNK:WGID
Commands:GET, SET
Data Type:STRING
Format:0x0000
Availability:
       Operating Mode:Duplex
       Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:SITE ID (Hex)
Tag:P25_TRUNK:SITE ID
Commands:GET, SET
Data Type:STRING
Format:0x00
Availability:
       Operating Mode:Duplex
       Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Bandplan Table
Tag:P25_TRUNK:BANDPLAN Table
Commands:GO
Data Type:SUBMENU
Availability:
       Operating Mode:Duplex
       Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:2000 ms


Name:Identifier Update
Tag:P25_TRUNK:Iden Up
Commands:GET, SET
Data Type:BOOLEAN
List Values: OFF, ON
Availability:
       Operating Mode:Duplex
       Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Control Chnl TX Frequency
Tag:P25_TRUNK:CCTx
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
       Operating Mode:Duplex
```

```
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Control Chnl RX Frequency
Tag:P25_TRUNK:CCRx
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:CCTx Channel
Tag:P25_TRUNK:CCTx Chnl
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 4095
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:CCRx Channel
Tag:P25_TRUNK:CCRx Chnl
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 4095
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Voice Chnl TX Frequency
Tag:P25_TRUNK:VCTx
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Voice Chnl RX Frequency
Tag:P25_TRUNK:VCRx
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms
```

```
Name:VCTx Channel
Tag:P25_TRUNK:VCTx Chnl
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 4095
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:VCRx Channel
Tag:P25_TRUNK:VCRx Chnl
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 4095
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Reset Symbol Rate Error
Tag:P25_TRUNK:Reset SRE
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK
Typical Completion Time:100 ms


Name:BER Test
Tag:P25_TRUNK:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK
Typical Completion Time:500 ms


Name:Test Pattern
Tag:P25_TRUNK:Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1011 Hz Tone, Calibration (Tone 5%), Standard Tx (O.153/V.52),
Silence
Availability:
        Operating Mode:Duplex
        Menu:P25_TRUNK:Subzone=BER
Typical Completion Time:100 ms


Name:BS Mode
Tag:P25_TRUNK:P25_EXP
Commands:GET, SET
Data Type:LIST
```

```
List Values: Implicit, Explicit
Availability:
        Operating Mode:Duplex
        Option:R8-P25_EXP
        Menu:P25_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Band
Tag:BANDPLAN:Band
Commands:GET, SET
Data Type:LIST
List Values: 800 MHz, 700 MHz, UHF/VHF
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
Typical Completion Time:100 ms


Name:Set Band Plan to Defaults
Tag:BANDPLAN:Band Defaults
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
Typical Completion Time:200 ms


Name:Bandwidth
Tag:BANDPLAN:Bandwidth
Commands:GET, SET
Data Type:LIST
List Values: 6.25 kHz, 12.5 kHz
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
Typical Completion Time:100 ms


Name:Base Frequency
Tag:BANDPLAN:Base Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
Typical Completion Time:100 ms


Name:Channel Spacing (kHz)
Tag:BANDPLAN:Chnl Spacing
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 512
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
```

Typical Completion Time:100 ms

Name:Transmit Offset (MHz)
Tag:BANDPLAN:TX Offset
Commands:GET, SET
Data Type:FLOAT
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
Typical Completion Time:100 ms

Name:Channel Identifier
Tag:BANDPLAN:Channel Id
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 16
Availability:
        Operating Mode:Duplex
        Menu:BANDPLAN
Typical Completion Time:100 ms

Name:
Tag:NXDN:BER Result
Commands:GET
Data Type:FLOAT
Range: 0 to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:0 ms

Name:Symbol Deviation (Hz)
Tag:NXDN:Symbol Deviation
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:0 ms

Name:
Tag:NXDN:Modulation Fidelity
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:0 ms

Name:Bit Rate (bps)
Tag:NXDN:Bit Rate
Commands:GET, SET
Data Type:BOOLEAN
List Values: 4800, 9600
Availability:

```
        Operating Mode:Monitor, Generate, Duplex
        Menu:NXDN
Typical Completion Time:100 ms


Name:
Tag:NXDN:Monitor RAN
Commands:GET
Data Type:STRING
Availability:
        Menu:NXDN
Typical Completion Time:0 ms


Name:Copy RAN to Generator
Tag:NXDN:Copy RAN to Generator
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:100 ms


Name:RAN(encode)
Tag:NXDN:Generate RAN
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 63
Availability:
        Operating Mode:Generate, Duplex
        Menu:NXDN
Typical Completion Time:100 ms


Name:Mon Test Pattern
Tag:NXDN:Mon Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1031 Hz Tone [NXDN:Bit Rate=4800], 1031 Hz Tone [NXDN:Bit
Rate=9600], 1011 Hz Tone [NXDN:Bit Rate=9600], Calibration (O.153 2%), 511
(O.153/PN9)
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:100 ms


Name:Gen Test Pattern
Tag:NXDN:Gen Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1031 Hz Tone [NXDN:Bit Rate=4800], 1031 Hz Tone [NXDN:Bit
Rate=9600], 1011 Hz Tone [NXDN:Bit Rate=9600], Calibration (O.153 2%), 511
(O.153/PN9), 511 (O.153/FSW+PN9) [Operating Mode=Generate], Interference
[Operating Mode=Generate], Max Freq Deviation [Operating Mode=Generate], 1/3
Freq Deviation [Operating Mode=Generate]
Availability:
        Operating Mode:Generate, Duplex
        Menu:NXDN
```

```
Typical Completion Time:100 ms

Name:Generate Modulation Mode
Tag:NXDN:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst
Availability:
        Operating Mode:Generate, Duplex
        Menu:NXDN
Typical Completion Time:500 ms

Name:BER Test
Tag:NXDN:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:500 ms

Name:Eye Diagram Data
Tag:NXDN:Eye Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:NXDN
Typical Completion Time:100 ms

Name:NXDN Library Version
Tag:NXDN:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:NXDN
Typical Completion Time:0 ms

Name:Subzone
Tag:NXDN_TRUNK:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Alert/Dispatch, BER
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK
Typical Completion Time:100 ms

Name:Modulation Mode
Tag:NXDN_TRUNK:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
```

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```
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=BER
Typical Completion Time:500 ms


Name:Voice Call
Tag:NXDN_TRUNK:Voice Call
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Test Pattern
Tag:NXDN_TRUNK:Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1031 Hz Tone [NXDN_TRUNK:Bit Rate=4800], 1031 Hz Tone
[NXDN_TRUNK:Bit Rate=9600], 1011 Hz Tone [NXDN_TRUNK:Bit Rate=9600],
Calibration (O.153 2%), 511 (O.153/PN9)
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=BER
Typical Completion Time:100 ms


Name:BER Test
Tag:NXDN_TRUNK:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK
Typical Completion Time:500 ms


Name:Send Status Inquiry
Tag:NXDN_TRUNK:Status Inquiry
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:CCTx Channel
Tag:NXDN_TRUNK:CCTx Chnl
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 1023
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms
```

```
Name:VCTx Channel
Tag:NXDN_TRUNK:VCTx Chnl
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 1023
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Control Chnl TX Frequency
Tag:NXDN_TRUNK:CCTx
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Voice Chnl TX Frequency
Tag:NXDN_TRUNK:VCTx
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Transmit Offset (MHz)
Tag:NXDN_TRUNK:Tx Off
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:System Code
Tag:NXDN_TRUNK:SYSTEM ID
Commands:GET, SET
Data Type:STRING
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Availability:
        Operating Mode:Duplex
        Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms


Name:Site Code
Tag:NXDN_TRUNK:SITE ID
Commands:GET, SET
```

```
Data Type:STRING
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Availability:
       Operating Mode:Duplex
       Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms

Name:Unit ID
Tag:NXDN_TRUNK:WUID
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 65535
Availability:
       Operating Mode:Duplex
       Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms

Name:Group ID
Tag:NXDN_TRUNK:WGID
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 65535
Availability:
       Operating Mode:Duplex
       Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms

Name:Category
Tag:NXDN_TRUNK:Category
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 2
Availability:
       Operating Mode:Duplex
       Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
Typical Completion Time:100 ms

Name:Bit Rate (bps)
Tag:NXDN_TRUNK:Bit Rate
Commands:GET, SET
Data Type:LIST
List Values: 4800, 9600
Availability:
       Operating Mode:Duplex
       Menu:NXDN_TRUNK:Subzone=Alert/Dispatch, BER
Typical Completion Time:100 ms

Name:Voice Playback
Tag:NXDN_TRUNK:Voice Playback
Commands:GET, SET
Data Type:BOOLEAN
List Values: OFF, ON
Availability:
       Operating Mode:Duplex
       Menu:NXDN_TRUNK:Subzone=Alert/Dispatch
```

```
Typical Completion Time:100 ms

Name:Constellation Data
Tag:TETRA:Constellation Data
Commands:GET
Data Type:ARRAY
Availability:
        Menu:TETRA
Typical Completion Time:100 ms

Name:
Tag:TETRA:Modulation Spectrum
Commands:GET
Data Type:ARRAY
Availability:
        Menu:TETRA
Typical Completion Time:100 ms

Name:Reset Averaging
Tag:TETRA:Reset RX
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:100 ms

Name:Measurement Averaging
Tag:TETRA:Measurement Averaging
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 250
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:100 ms

Name:Unwanted Power in Slot 3
Tag:TETRA:Unwanted Active
Commands:GET, SET
Data Type:BOOLEAN
List Values: No, Yes
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:100 ms

Name:
Tag:TETRA:Symbol Deviation
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:0 ms
```

```
Name:
Tag:TETRA:EVM RMS
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:0 ms


Name:
Tag:TETRA:EVM Peak
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:0 ms


Name:
Tag:TETRA:Unwanted Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:0 ms


Name:
Tag:TETRA:Residual Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:TETRA
Typical Completion Time:0 ms


Name:Test Pattern
Tag:TETRA:Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: 1000 Hz Tone, Silence
Availability:
        Operating Mode:Generate
        Menu:TETRA
Typical Completion Time:100 ms


Name:Modulation Mode
Tag:TETRA:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
        Operating Mode:Generate
        Menu:TETRA
```

```
Typical Completion Time:500 ms

Name:TETRA DMO Library Version
Tag:TETRA:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:TETRA
Typical Completion Time:0 ms

Name:
Tag:TETRA_TMO:HORZ MENU
Commands:GET, SET
Data Type:LIST
List Values: Call Mobile, Channel Plan, TX Test, RX Test, PLC Test, T1 Test,
Main Screen
Availability:
        Menu:TETRA_TMO
Typical Completion Time:0 ms

Name:Graphical Displays
Tag:TETRA_TMO:Graphical Displays
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Call Type
Tag:TETRA_TMO:Call Type
Commands:GET, SET
Data Type:LIST
List Values: Individual Duplex, Individual Simplex, Group, Phone, Emergency,
SDS/DTMF/DGNA, Ambient Listening
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Select Group
Tag:TETRA_TMO:Select Group
Commands:GET, SET
Data Type:LIST
List Values: No Selection
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Voice Loopback
Tag:TETRA_TMO:Voice Loopback
Commands:GET, SET
Data Type:LIST
List Values: Voice, 2.4kHz, 1.6kHz, 1kHz, 800Hz, 400Hz, Off
```

```
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:RF Output Level
Tag:TETRA_TMO:RF Output Level
Commands:GET, SET
Data Type:FLOAT
Range: 0 dBm to 0 dBm
Units: dBm
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:1000 ms

Name:Attenuation
Tag:TETRA_TMO:Attenuation
Commands:GET, SET
Data Type:LIST
List Values: 0 dB, 2 dB, 4 dB, 6 dB, 8 dB, 10 dB, 12 dB, 14 dB, 16 dB, 18 dB,
20 dB, 22 dB, 24 dB, 26 dB, 28 dB, 30 dB, 32 dB, 34 dB, 36 dB, 38 dB, 40 dB,
42 dB, 44 dB, 46 dB, 48 dB, 50 dB, 52 dB, 54 dB, 56 dB, 58 dB, 60 dB, 62 dB
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Average Readings
Tag:TETRA_TMO:Average Readings
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 100
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Test Limits
Tag:TETRA_TMO:Test Limits
Commands:DO
Data Type:FUNCTION
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Sync
Tag:TETRA_TMO:Sync
Commands:DO
Data Type:FUNCTION
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:4000 ms
```

```
Name:Command Registration
Tag:TETRA_TMO:Command Registration
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:1000 ms


Name:
Tag:TETRA_TMO:RF Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_TMO:Unwanted Output Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_TMO:Residual Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_TMO:Freq Error
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_TMO:EVM RMS
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms
```

```
Name:
Tag:TETRA_TMO:EVM Peak
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_TMO:Frame Alignment
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:Bar Charts
Tag:TETRA_TMO:Bar Charts
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Spectrum
Tag:TETRA_TMO:Spectrum
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Power Profile
Tag:TETRA_TMO:Power Profile
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Constellation
Tag:TETRA_TMO:Constellation
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Upper Mini Graph
```

```
Tag:TETRA_TMO:UpperGraph
Commands:GET, SET
Data Type:LIST
List Values: Spectrum, Power Profile, Symbols, Trajectories
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Lower Mini Graph
Tag:TETRA_TMO:LowerGraph
Commands:GET, SET
Data Type:LIST
List Values: Spectrum, Power Profile, Symbols, Trajectories, Bar Graphs
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Frequency
Tag:TETRA_TMO:CPFrequency
Commands:GET, SET
Data Type:FLOAT
Range: 250000 Hz to 1000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Band
Tag:TETRA_TMO:Band
Commands:GET, SET
Data Type:LIST
List Values: 100 MHz, 300 MHz, 400 MHz, 450 MHz, 800 MHz, 900 MHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:MCCH
Tag:TETRA_TMO:MCCH
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10000
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:TS
Tag:TETRA_TMO:TS
Commands:GET, SET
Data Type:LIST
List Values: 2, 3, 4
```

```
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Channel Offset
Tag:TETRA_TMO:Channel Offset
Commands:GET, SET
Data Type:LIST
List Values: 0 Hz, 6.250 kHz, -6.25 kHz, 12.500 kHz, -12.500 kHz
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Duplex Offset
Tag:TETRA_TMO:Duplex Offset
Commands:GET, SET
Data Type:LIST
List Values: 1.6 MHz [TETRA_TMO:Band=100 MHz], 4.5 MHz [TETRA_TMO:Band=100
MHz], 5 MHz [TETRA_TMO:Band=400 MHz or TETRA_TMO:Band=450 MHz], 10 MHz
[TETRA_TMO:Band=300 MHz or TETRA_TMO:Band=400 MHz or TETRA_TMO:Band=450 MHz],
45 MHz [TETRA_TMO:Band=800 MHz or TETRA_TMO:Band=900 MHz]
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Operating Mode
Tag:TETRA_TMO:Operating Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Reverse
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:Connection Mode
Tag:TETRA_TMO:Connection Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Fallback
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_TMO
Typical Completion Time:500 ms

Name:MCC
Tag:TETRA_TMO:MCC
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 500
Availability:
       Operating Mode:Monitor, Duplex
```

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        Menu:TETRA_TMO
Typical Completion Time:500 ms


Name:MNC
Tag:TETRA_TMO:MNC
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10000
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms


Name:BCC
Tag:TETRA_TMO:BCC
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms


Name:Larea
Tag:TETRA_TMO:Larea
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms


Name:Limits Default
Tag:TETRA_TMO:Limits Default
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:500 ms


Name:Power Class
Tag:TETRA_TMO:Power Class
Commands:GET, SET
Data Type:LIST
List Values: 2 (10W), 2L (5.6W), 3 (3W), 3L (1.8W), 4 (1W), 4L (0.56W)
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Unwanted Power
Tag:TETRA_TMO:Unwanted Power
Commands:GET, SET
```

```
Data Type:INTEGER
Range: 0 to 0
Availability:
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Residual Carrier Power
Tag:TETRA_TMO:Residual Carrier Power
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Frequency Error
Tag:TETRA_TMO:Frequency Error
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 200
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:RMS Vector
Tag:TETRA_TMO:RMS Vector
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 50
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Peak Vector
Tag:TETRA_TMO:Peak Vector
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 50
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Frame Align Symbols
Tag:TETRA_TMO:Frame Align Limit
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 1
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms
```

```
Name:RX Sensitivity
Tag:TETRA_TMO:RX Sensitivity
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 0
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:MS T1 BER
Tag:TETRA_TMO:MS T1 BER
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:MS T1 MER
Tag:TETRA_TMO:MS T1 MER
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Burst Samples
Tag:TETRA_TMO:Burst Samples
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 1000000
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Start Test
Tag:TETRA_TMO:Start Test
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:RX Test
Tag:TETRA_TMO:RX Test
Commands:
Data Type:BOOLEAN
List Values:
```

```
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Start Level
Tag:TETRA_TMO:Start Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 0
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Step Level
Tag:TETRA_TMO:Step Level
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Start RX Test
Tag:TETRA_TMO:Start RX Test
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:
Tag:TETRA_TMO:RXSensitivityResult
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:Start PLC Test
Tag:TETRA_TMO:Start PLC Test
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms

Name:
Tag:TETRA_TMO:PL1
Commands:GET
```

```
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:
Tag:TETRA_TMO:PL2
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:
Tag:TETRA_TMO:PL3
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:
Tag:TETRA_TMO:PL4
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:
Tag:TETRA_TMO:PL5
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:
Tag:TETRA_TMO:PL6
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:T1 Burst Type
Tag:TETRA_TMO:T1 Burst Type
Commands:GET, SET
Data Type:LIST
```

```
List Values: TCH/7.2, SCH/F, BSCH+SCH/HD
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:MS Mode
Tag:TETRA_TMO:T1 MS Mode
Commands:GET, SET
Data Type:LIST
List Values: MS TX Test, MS RX Test, RF Loopback
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:RF Output Level
Tag:TETRA_TMO:T1 RF Level
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 0
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:1000 ms


Name:Start Test
Tag:TETRA_TMO:Start T1 Test
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:Stop Test
Tag:TETRA_TMO:Stop T1 Test
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:ETSI Test
Tag:TETRA_TMO:ETSI T1 Test
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:100 ms


Name:
Tag:TETRA_TMO:T1 BER
```

```
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_TMO:T1 MER
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:TETRA TMO Library Version
Tag:TETRA_TMO:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:TETRA_TMO
Typical Completion Time:0 ms


Name:
Tag:TETRA_BST:HORZ MENU
Commands:GET, SET
Data Type:LIST
List Values: Channel Plan, TX Test, Test Limits, , , , Main Screen
Availability:
        Menu:TETRA_BST
Typical Completion Time:0 ms


Name:Graphical Displays
Tag:TETRA_BST:Graphical Displays
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Test Mode
Tag:TETRA_BST:BSMode
Commands:GET, SET
Data Type:LIST
List Values: Monitor Mode, T1 Mode
Availability:
        Operating Mode:Monitor, Duplex
        Option:R8-TETRA_BST1
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:BS OEM
Tag:TETRA_BST:BS OEM
```

```
Commands:GET, SET
Data Type:LIST
List Values: User Defined, Cassidian TB3, Motorola Dimetra, Motorola MTS 1,
Rohill TetraNode
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:500 ms


Name:Downlink Frequency
Tag:TETRA_BST:Downlink Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 380000000 Hz to 400000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:1000 ms


Name:Attenuation
Tag:TETRA_BST:Attenuation
Commands:GET, SET
Data Type:LIST
List Values: 0 dB, 2 dB, 4 dB, 6 dB, 8 dB, 10 dB, 12 dB, 14 dB, 16 dB, 18 dB,
20 dB, 22 dB, 24 dB, 26 dB, 28 dB, 30 dB, 32 dB, 34 dB, 36 dB, 38 dB, 40 dB,
42 dB, 44 dB, 46 dB, 48 dB, 50 dB, 52 dB, 54 dB, 56 dB, 58 dB, 60 dB, 62 dB
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Average Readings
Tag:TETRA_BST:Averaging
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Cable Offset (dB)
Tag:TETRA_BST:RF In/Out Offset
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 99
Availability:
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Gen Offset (dB)
Tag:TETRA_BST:RF Gen Out Offset
Commands:GET, SET
Data Type:FLOAT
```

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```
Range: 0  to 99
Availability:
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:RF Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:Residual Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:Freq Error
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:EVM RMS
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:EVM Peak
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Uplink Signal Mode
Tag:TETRA_BST:Uplink Signal Mode
Commands:GET, SET
Data Type:LIST
```

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```
List Values: Auto, TX On, Transmit, Receive, Loopback, Manual Transmit,
Manual Receive, Manual Loopback, Downlink T2 (No Scrambling)
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:500 ms


Name:Uplink Signal Type
Tag:TETRA_BST:Uplink Signal Type
Commands:GET, SET
Data Type:LIST
List Values: Auto, TCH/7.2, SCH/F, STCH+STCH, SCH/HU+SCH/HU, TCH/S, TCH/2.4
N=1, TCH/4.8 N=1
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:500 ms


Name:RF Output Level (dBm)
Tag:TETRA_BST:RF Output Level
Commands:GET, SET
Data Type:FLOAT
Range: 0 dBm to 0 dBm
Units: dBm
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:1000 ms


Name:Codec Tones
Tag:TETRA_BST:Codec Tones
Commands:GET, SET
Data Type:LIST
List Values: 400 Hz, 800 Hz, 1000 Hz, 1600 Hz, 2400 Hz
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:100 ms


Name:
Tag:TETRA_BST:DllMNC
Commands:GET
Data Type:INTEGER
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:100 ms


Name:
Tag:TETRA_BST:DllMCC
Commands:GET
Data Type:INTEGER
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
```

Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:DllBCC
Commands:GET
Data Type:INTEGER
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:DllLA
Commands:GET
Data Type:INTEGER
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:Downlink BER
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:Downlink MBR
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:Uplink BER
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:
Tag:TETRA_BST:Uplink MER
Commands:GET
Data Type:STRING
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

```
Name:Gen Port
Tag:TETRA_BST:Generate Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Gen Out
Availability:
        Operating Mode:Duplex
        Menu:TETRA_BST
Typical Completion Time:1000 ms


Name:Monitor Port
Tag:TETRA_BST:Monitor Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Antenna
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:1000 ms


Name:Pre-Amp
Tag:TETRA_BST:PreAmp On
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:1000 ms


Name:Sync
Tag:TETRA_BST:Sync
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:5000 ms


Name:Bar Charts
Tag:TETRA_BST:Bar Charts
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Spectrum
Tag:TETRA_BST:Spectrum
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
```

```
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Power Profile
Tag:TETRA_BST:Power Profile
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Constellation
Tag:TETRA_BST:Constellation
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Upper Mini Graph
Tag:TETRA_BST:UpperGraph
Commands:GET, SET
Data Type:LIST
List Values: Spectrum, Power Profile, Symbols, Trajectories
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Lower Mini Graph
Tag:TETRA_BST:LowerGraph
Commands:GET, SET
Data Type:LIST
List Values: Spectrum, Power Profile, Symbols, Trajectories, Bar Graphs
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Channel
Tag:TETRA_BST:Channel
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 40000
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Band
Tag:TETRA_BST:Band
Commands:GET, SET
Data Type:LIST
```

```
List Values: 100 MHz, 300 MHz, 400 MHz, 450 MHz, 800 MHz, 900 MHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Channel Offset
Tag:TETRA_BST:Channel Offset
Commands:GET, SET
Data Type:LIST
List Values: 0 Hz, 6.250 kHz, -6.25 kHz, 12.500 kHz, -12.500 kHz
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Duplex Offset
Tag:TETRA_BST:Duplex Offset
Commands:GET, SET
Data Type:LIST
List Values: 1.6 MHz [TETRA_BST:Band=100 MHz], 4.5 MHz [TETRA_BST:Band=100
MHz], 5 MHz [TETRA_BST:Band=400 MHz or TETRA_BST:Band=450 MHz], 10 MHz
[TETRA_BST:Band=300 MHz or TETRA_BST:Band=400 MHz or TETRA_BST:Band=450 MHz],
45 MHz [TETRA_BST:Band=800 MHz or TETRA_BST:Band=900 MHz]
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Operating Mode
Tag:TETRA_BST:Operating Mode
Commands:GET, SET
Data Type:LIST
List Values: Normal, Reverse
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:MCC
Tag:TETRA_BST:MCC
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 500
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:MNC
Tag:TETRA_BST:MNC
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10000
Availability:
```

```
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:BCC
Tag:TETRA_BST:BCC
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Limits Default
Tag:TETRA_BST:Limits Default
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:1000 ms


Name:RF Power Lower Limit
Tag:TETRA_BST:RFPLLLimit
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 200
Availability:
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:RF Power Upper Limit
Tag:TETRA_BST:RFPLULimit
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 200
Availability:
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Residual Carrier Power
Tag:TETRA_BST:Residual Carrier Power
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Frequency Error
Tag:TETRA_BST:Frequency Error
Commands:GET, SET
Data Type:INTEGER
```

```
Range: 0 to 200
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:RMS Vector
Tag:TETRA_BST:RMS Vector
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 50
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Peak Vector
Tag:TETRA_BST:Peak Vector
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 50
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Uplink BER
Tag:TETRA_BST:UplinkBERLimit
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Uplink MER
Tag:TETRA_BST:UplinkMERLimit
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms


Name:Downlink BER
Tag:TETRA_BST:DownlinkBERLimit
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
        Operating Mode:Monitor, Duplex
        Menu:TETRA_BST
Typical Completion Time:100 ms
```

```
Name:Downlink MBR
Tag:TETRA_BST:DownlinkMBRLimit
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Burst Samples
Tag:TETRA_BST:Burst Samples
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 1000000
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:100 ms

Name:Start Test
Tag:TETRA_BST:Start TX Test
Commands:DO
Data Type:FUNCTION
Availability:
       Operating Mode:Monitor, Duplex
       Menu:TETRA_BST
Typical Completion Time:100 ms

Name:TETRA BSM Library Version
Tag:TETRA_BST:Version
Commands:GET
Data Type:STRING
Availability:
       Menu:TETRA_BST
Typical Completion Time:0 ms

Name:TETRA BST1 Library Version
Tag:TETRA_BST:Version1
Commands:GET
Data Type:STRING
Availability:
       Menu:TETRA_BST
Typical Completion Time:0 ms

Name:
Tag:OPTIONS:Enabled
Commands:GET
Data Type:STRING
Typical Completion Time:0 ms

Name:Calibrate Now
Tag:CALIBRATION:Start Cal
Commands:DO
```

```
Data Type:FUNCTION
Availability:
        Menu:CALIBRATION
Typical Completion Time:0 ms

Name:RF Input Status
Tag:CALIBRATION:RF Input Cal Status
Commands:GET
Data Type:INTEGER
Availability:
        Menu:CALIBRATION
Typical Completion Time:0 ms

Name:RF Output Cal Status
Tag:CALIBRATION:RF Output Cal Status
Commands:GET
Data Type:INTEGER
Availability:
        Menu:CALIBRATION
Typical Completion Time:0 ms

Name:Synth Mode
Tag:POCSAG:Synth Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst [AUDIO:Format=A/B Sequence or
AUDIO:Format=5/6 Tone or AUDIO:Format=POCSAG or AUDIO:Format=General
Sequence], Disconnect Tone [AUDIO:Format=DPL or AUDIO:Format=DPL Invert]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:500 ms

Name:Capcode
Tag:POCSAG:Capcode
Commands:GET, SET
Data Type:STRING
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms

Name:Function Bits
Tag:POCSAG:Function Bits
Commands:GET, SET
Data Type:LIST
List Values: 00, 01, 10, 11
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms

Name:POCSAG Message
Tag:POCSAG:POCSAG Message
```

```
Commands:GET, SET
Data Type:LIST
List Values: Tone Only, NumericNum, NumericSet, AlphaNumUC, AlphaNumLC,
AlphaNumSP, NumericCust, AlphaNumCust
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms


Name:Edit Message
Tag:POCSAG:NumericCust Message
Commands:GET, SET
Data Type:STRING
Format:(POCSAGCustom)
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, U,  , -, ], [
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms


Name:Edit Message
Tag:POCSAG:AlphaNumCust Message
Commands:GET, SET
Data Type:STRING
Format:(POCSAGCustom)
char set:!, ", #, $, %, ', (, ), *, +, -, ., /, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9,
, :, ;, <, =, >, ?, @, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R,
S, T, U, V, W, X, Y, Z, ], \, [, ^, _, `, a, b, c, d, e, f, g, h, i, j, k, l,
m, n, o, p, q, r, s, t, u, v, w, x, y, z, {,
, }, ~
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms


Name:Message Length
Tag:POCSAG:Message Length
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 60
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms


Name:Data Rate
Tag:POCSAG:Data Rate
Commands:GET, SET
Data Type:INTEGER
Range: 400 to 4800
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms
```

```
Name:Polarity
Tag:POCSAG:Polarity
Commands:GET, SET
Data Type:LIST
List Values: Normal, Inverted
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms


Name:Error Bit
Tag:POCSAG:Error Bit
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 2200
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:POCSAG
Typical Completion Time:100 ms


Name:Record Results
Tag:AUTOSCRIPT:Reporting
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Menu:AUTOSCRIPT
Typical Completion Time:500 ms


Name:
Tag:DPMR:BER Result
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Monitor
        Menu:DPMR
Typical Completion Time:0 ms


Name:Symbol Deviation (Hz)
Tag:DPMR:Symbol Deviation
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:DPMR
Typical Completion Time:0 ms


Name:
Tag:DPMR:Modulation Fidelity
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor
        Menu:DPMR
```

```
Typical Completion Time:0 ms

Name:Test Pattern
Tag:DPMR:Test Pattern
Commands:GET, SET
Data Type:LIST
List Values: Calibration (O.153 2%), 511 (O.153/PN9), Interference [Operating
Mode=Generate], Max Freq Deviation [Operating Mode=Generate], 1/3 Freq
Deviation [Operating Mode=Generate]
Availability:
        Operating Mode:Monitor, Generate
        Menu:DPMR
Typical Completion Time:100 ms

Name:Modulation Mode
Tag:DPMR:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst
Availability:
        Operating Mode:Generate
        Menu:DPMR
Typical Completion Time:500 ms

Name:BER Test
Tag:DPMR:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor
        Menu:DPMR
Typical Completion Time:500 ms

Name:Ideal Sym Dev (Hz)
Tag:DPMR:Ideal Symbol Deviation
Commands:GET, SET
Data Type:INTEGER
Range: 800 to 2400
Availability:
        Operating Mode:Monitor, Generate
        Menu:DPMR
Typical Completion Time:100 ms

Name:Filter
Tag:DPMR:Filter
Commands:GET, SET
Data Type:LIST
List Values: ETSI, PDR
Availability:
        Operating Mode:Monitor, Generate
        Menu:DPMR
Typical Completion Time:100 ms

Name:Eye Diagram Data
```

```
Tag:DPMR:Eye Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor
        Menu:DPMR
Typical Completion Time:100 ms


Name:dPMR Library Version
Tag:DPMR:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:DPMR
Typical Completion Time:0 ms


Name:
Tag:P25_II:BER Result
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25_II
Typical Completion Time:0 ms


Name:Symbol Deviation (Hz)
Tag:P25_II:Symbol Deviation
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25_II
Typical Completion Time:0 ms


Name:
Tag:P25_II:Modulation Fidelity
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25_II
Typical Completion Time:0 ms


Name:Symbol Rate Error (mHz)
Tag:P25_II:Sym Rate Err
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25_II
Typical Completion Time:0 ms


Name:Test Pattern
Tag:P25_II:Test Pattern
```

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```
Commands:GET, SET
Data Type:LIST
List Values: 1031 Hz Tone, Calibration (Tone 5%), Silence, High Deviation
[Operating Mode=Generate], Low Deviation [Operating Mode=Generate],
Interference [Operating Mode=Generate]
Availability:
        Operating Mode:Monitor, Generate, Duplex
        Menu:P25_II
Typical Completion Time:100 ms

Name:Generate Modulation Type
Tag:P25_II:Modulation Type
Commands:GET, SET
Data Type:LIST
List Values: FM [Test Mode=Standard], AM [Test Mode=Standard], USB [Test
Mode=Standard and Option=R8-SSB], LSB [Test Mode=Standard and Option=R8-SSB],
4FSK [Test Mode=DMR or Test Mode=DPMR or Test Mode=NXDN], GMSK~ [Test
Mode=PTC-ACSES], C4FM [Test Mode=PROJECT 25 or Test Mode=P25 Trunk], LSM
[Test Mode=PROJECT 25 or Test Mode=P25 Trunk], WCQPSK [Test Mode=PROJECT 25
or Test Mode=P25 Trunk], pi/4 DQPSK [Test Mode=PTC-ITCR or Test Mode=TETRA
DMO or Test Mode=TETRA TMO or Test Mode=TETRA BST], HCPM [Test Mode=P25 II],
HDQPSK [Test Mode=P25 II and Operating Mode=Monitor or Test Mode=P25 II and
Operating Mode=Generate]
Availability:
        Operating Mode:Generate
        Menu:P25_II
Typical Completion Time:100 ms

Name:Monitor Modulation Type
Tag:P25_II:Mon Mod Type
Commands:GET, SET
Data Type:LIST
List Values: HCPM [Operating Mode=Monitor or Operating Mode=Generate], HDQPSK
Availability:
        Operating Mode:Monitor
        Menu:P25_II
Typical Completion Time:100 ms

Name:Modulation Mode
Tag:P25_II:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous, Burst [Operating Mode=Monitor or Operating
Mode=Generate]
Availability:
        Operating Mode:Generate, Duplex
        Menu:P25_II
Typical Completion Time:500 ms

Name:LCH (logical channel)
Tag:P25_II:Gen LCH
Commands:GET, SET
Data Type:LIST
List Values: 0, 1
Availability:
```

```
        Operating Mode:Generate, Duplex
        Menu:P25_II
Typical Completion Time:100 ms


Name:BER Test
Tag:P25_II:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25_II
Typical Completion Time:500 ms


Name:Eye Diagram Data
Tag:P25_II:Eye Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:Monitor, Duplex
        Menu:P25_II
Typical Completion Time:100 ms


Name:P25 Phase 2 Library Version
Tag:P25_II:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:P25_II
Typical Completion Time:0 ms


Name:PTC-ACSES Library Version
Tag:PTC_ACSES:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:PTC_ACSES
Typical Completion Time:0 ms


Name:Mon Symbol Rate (sps)
Tag:PTC_ITCR:Mon Sym Rate
Commands:GET, SET
Data Type:BOOLEAN
List Values: 8000, 16000
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:100 ms


Name:Gen Symbol Rate (sps)
Tag:PTC_ITCR:Gen Sym Rate
Commands:GET, SET
Data Type:BOOLEAN
List Values: 8000, 16000
Availability:
```

```
        Operating Mode:Generate, Duplex
        Menu:PTC_ITCR
Typical Completion Time:100 ms


Name:BER Test
Tag:PTC_ITCR:BER Test
Commands:GET, SET
Data Type:LIST
List Values: Stop, Start
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:500 ms


Name:Modulation Mode
Tag:PTC_ITCR:Gen Mod Mode
Commands:GET, SET
Data Type:LIST
List Values: Off, Continuous
Availability:
        Operating Mode:Generate, Duplex
        Menu:PTC_ITCR
Typical Completion Time:500 ms


Name:Packet Sync Status
Tag:PTC_ITCR:Sync
Commands:GET
Data Type:BOOLEAN
List Values:
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:
Tag:PTC_ITCR:BER Result
Commands:GET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:Average Power (dBm)
Tag:PTC_ITCR:Average Power
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:Peak Power (dBm)
Tag:PTC_ITCR:Peak Power
```

```
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms

Name:EVM (%)
Tag:PTC_ITCR:EVM
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms

Name:IQ Imbalance (dB)
Tag:PTC_ITCR:IQ Imbalance
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms

Name:Phase Err (deg)
Tag:PTC_ITCR:Phase Err
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms

Name:Mag Err (%)
Tag:PTC_ITCR:Mag Err
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms

Name:
Tag:PTC_ITCR:PAR
Commands:GET
Data Type:FLOAT
Availability:
        Operating Mode:Monitor, Duplex
        Menu:PTC_ITCR
Typical Completion Time:0 ms

Name:
Tag:PTC_ITCR:Packet Count
Commands:GET
```

```
Data Type:INTEGER
Availability:
       Operating Mode:Monitor, Duplex
       Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:
Tag:PTC_ITCR:Header Resync Count
Commands:GET
Data Type:INTEGER
Availability:
       Operating Mode:Monitor, Duplex
       Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:
Tag:PTC_ITCR:Last Packet Index
Commands:GET
Data Type:INTEGER
Availability:
       Operating Mode:Monitor, Duplex
       Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:Eye Diagram Data
Tag:PTC_ITCR:Eye Data
Commands:GET
Data Type:ARRAY
Availability:
       Operating Mode:Monitor, Duplex
       Menu:PTC_ITCR
Typical Completion Time:100 ms


Name:PTC-ITCR Library Version
Tag:PTC_ITCR:Version
Commands:GET
Data Type:STRING
Availability:
       Menu:PTC_ITCR
Typical Completion Time:0 ms


Name:Radio/Source ID
Tag:DMR_BS_LIVE:RadioID
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 16777216
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms


Name:Emergency
Tag:DMR_BS_LIVE:Emergency
Commands:GET, SET
Data Type:BOOLEAN
```

```
List Values: Off, On
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms


Name:Priority
Tag:DMR_BS_LIVE:Priority
Commands:GET, SET
Data Type:LIST
List Values: 0, 1, 2, 3
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms


Name:Slot#
Tag:DMR_BS_LIVE:Slot
Commands:GET, SET
Data Type:LIST
List Values: 1, 2
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms


Name:Slot to Analyse
Tag:DMR_BS_LIVE:SlotToAnalyse
Commands:GET, SET
Data Type:LIST
List Values: 0, 1, 2
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms


Name:Target/Call Address
Tag:DMR_BS_LIVE:TargetAddress
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 16777215
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms


Name:Reset to Defaults
Tag:DMR_BS_LIVE:BS Live Defaults
Commands:DO
Data Type:FUNCTION
Availability:
       Operating Mode:Generate, Duplex
       Menu:DMR_BS_LIVE
Typical Completion Time:100 ms
```

```
Name:Select Signal
Tag:AVIONICS:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Localizer, Glide Slope, Markers, NDB/ADF, VOR, Selcal
Availability:
        Operating Mode:Generate
        Menu:AVIONICS
Typical Completion Time:500 ms


Name:RF Frequency
Tag:AVIONICS:LocalizerChannel
Commands:GET, SET
Data Type:LIST
List Values: 108.1 MHz, 108.15 MHz, 108.3 MHz, 108.35 MHz, 108.5 MHz, 108.55
MHz, 108.7 MHz, 108.75 MHz, 108.9 MHz, 108.95 MHz, 109.1 MHz, 109.15 MHz,
109.3 MHz, 109.35 MHz, 109.5 MHz, 109.55 MHz, 109.7 MHz, 109.75 MHz, 109.9
MHz, 109.95 MHz, 110.1 MHz, 110.15 MHz, 110.3 MHz, 110.35 MHz, 110.5 MHz,
110.55 MHz, 110.7 MHz, 110.75 MHz, 110.9 MHz, 110.95 MHz, 111.1 MHz, 111.15
MHz, 111.3 MHz, 111.35 MHz, 111.5 MHz, 111.55 MHz, 111.7 MHz, 111.75 MHz,
111.9 MHz, 111.95 MHz
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Localizer
Typical Completion Time:0 ms


Name:RF Frequency (kHz)
Tag:AVIONICS:NDB_Channel
Commands:GET, SET
Data Type:FLOAT
Range: 250  to 1750
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=NDB/ADF
Typical Completion Time:10000 ms


Name:RF Frequency
Tag:AVIONICS:VORChannel
Commands:GET, SET
Data Type:LIST
List Values: 108.00 MHz, 108.05 MHz, 108.20 MHz, 108.25 MHz, 108.40 MHz,
108.45 MHz, 108.60 MHz, 108.65 MHz, 108.80 MHz, 108.85 MHz, 109.00 MHz,
109.05 MHz, 109.20 MHz, 109.25 MHz, 109.40 MHz, 109.45 MHz, 109.60 MHz,
109.65 MHz, 109.80 MHz, 109.85 MHz, 110.00 MHz, 110.05 MHz, 110.20 MHz,
110.25 MHz, 110.40 MHz, 110.45 MHz, 110.60 MHz, 110.65 MHz, 110.80 MHz,
110.85 MHz, 111.00 MHz, 111.05 MHz, 111.20 MHz, 111.25 MHz, 111.40 MHz,
111.45 MHz, 111.60 MHz, 111.65 MHz, 111.80 MHz, 111.85 MHz, 112.00 MHz,
112.05 MHz, 112.10 MHz, 112.15 MHz, 112.20 MHz, 112.25 MHz, 112.30 MHz,
112.35 MHz, 112.40 MHz, 112.45 MHz, 112.50 MHz, 112.55 MHz, 112.60 MHz,
112.65 MHz, 112.70 MHz, 112.75 MHz, 112.80 MHz, 112.85 MHz, 112.90 MHz,
112.95 MHz, 113.00 MHz, 113.05 MHz, 113.10 MHz, 113.15 MHz, 113.20 MHz,
113.25 MHz, 113.30 MHz, 113.35 MHz, 113.40 MHz, 113.45 MHz, 113.50 MHz,
113.55 MHz, 113.60 MHz, 113.65 MHz, 113.70 MHz, 113.75 MHz, 113.80 MHz,
113.85 MHz, 113.90 MHz, 113.95 MHz, 114.00 MHz, 114.05 MHz, 114.05 MHz,
114.10 MHz, 114.15 MHz, 114.20 MHz, 114.25 MHz, 114.30 MHz, 114.35 MHz,
```

```
114.40 MHz, 114.45 MHz, 114.50 MHz, 114.55 MHz, 114.60 MHz, 114.65 MHz,
114.70 MHz, 114.75 MHz, 114.80 MHz, 114.85 MHz, 114.90 MHz, 114.95 MHz,
115.00 MHz, 115.05 MHz, 115.10 MHz, 115.15 MHz, 115.20 MHz, 115.25 MHz,
115.30 MHz, 115.35 MHz, 115.40 MHz, 115.45 MHz, 115.50 MHz, 115.55 MHz,
115.60 MHz, 115.65 MHz, 115.70 MHz, 115.75 MHz, 115.80 MHz, 115.85 MHz,
115.90 MHz, 115.95 MHz, 116.00 MHz, 116.05 MHz, 116.10 MHz, 116.15 MHz,
116.20 MHz, 116.25 MHz, 116.30 MHz, 116.35 MHz, 116.40 MHz, 116.45 MHz,
116.50 MHz, 116.55 MHz, 116.60 MHz, 116.65 MHz, 116.70 MHz, 116.75 MHz,
116.80 MHz, 116.85 MHz, 116.90 MHz, 116.95 MHz, 117.00 MHz, 117.10 MHz,
117.15 MHz, 117.20 MHz, 117.25 MHz, 117.30 MHz, 117.35 MHz, 117.40 MHz,
117.45 MHz, 117.50 MHz, 117.55 MHz, 117.60 MHz, 117.65 MHz, 117.70 MHz,
117.75 MHz, 117.80 MHz, 117.85 MHz, 117.90 MHz, 117.95 MHz,
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms

Name:RF Frequency (MHz)
Tag:AVIONICS:SELCAL_RF_Channel
Commands:GET, SET
Data Type:FLOAT
Range: 117  to 157
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Selcal
Typical Completion Time:10000 ms

Name:Gen Port
Tag:AVIONICS:Generate Port
Commands:GET, SET
Data Type:BOOLEAN
List Values: RF In/Out, Gen Out
Availability:
        Operating Mode:Generate
        Menu:AVIONICS
Typical Completion Time:500 ms

Name:150 Hz Tone
Tag:AVIONICS:ILS150Hz
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Localizer, Glide Slope
Typical Completion Time:1000 ms

Name:90 Hz Tone
Tag:AVIONICS:ILS90Hz
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Localizer, Glide Slope
```

```
Typical Completion Time:1000 ms

Name:SDM (%)
Tag:AVIONICS:SDM_Localizer
Commands:GET, SET
Data Type:FLOAT
Range: 30  to 50
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Localizer
Typical Completion Time:1000 ms

Name:SDM (%)
Tag:AVIONICS:SDM_Glider
Commands:GET, SET
Data Type:FLOAT
Range: 70  to 90
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Glide Slope
Typical Completion Time:1000 ms

Name:DDM (%)
Tag:AVIONICS:DDM_Localizer
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 40
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Localizer
Typical Completion Time:1000 ms

Name:DDM (%)
Tag:AVIONICS:DDM_Glider
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 80
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Glide Slope
Typical Completion Time:1000 ms

Name:DDM Presets
Tag:AVIONICS:DDMPresetsLocalizer
Commands:GET, SET
Data Type:LIST
List Values: -20.0, -15.5, -9.3, 0, 9.3, 15.5, 20.0
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Localizer
Typical Completion Time:1000 ms

Name:DDM Presets
Tag:AVIONICS:DDMPresetsGlideSlope
Commands:GET, SET
```

```
Data Type:LIST
List Values: -40.0, -17.5, -9.1, 0, 4.5, 9.1, 17.5, 40.0
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=Glide Slope
Typical Completion Time:1000 ms


Name:Flag Test
Tag:AVIONICS:FlagTest
Commands:DO
Data Type:FUNCTION
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=Localizer, Glide Slope
Typical Completion Time:0 ms


Name:Ident On/Off
Tag:AVIONICS:IdentOnOff
Commands:DO
Data Type:FUNCTION
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=Localizer, Glide Slope, VOR
Typical Completion Time:0 ms


Name:AM Modulation Depth (%)
Tag:AVIONICS:NDB_AMDepth
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=NDB/ADF
Typical Completion Time:50000 ms


Name:Modulation Tone Frequency(Hz)
Tag:AVIONICS:NDB_ModTone
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 2040
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=NDB/ADF
Typical Completion Time:10000 ms


Name:Repeat Cycle
Tag:AVIONICS:NDB_RepeatCycle
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=NDB/ADF
Typical Completion Time:1000 ms
```

```
Name:Marker Off
Tag:AVIONICS:OffMarker
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Markers
Typical Completion Time:1000 ms


Name:Outer Marker
Tag:AVIONICS:OuterMarker
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Markers
Typical Completion Time:1000 ms


Name:Middle Marker
Tag:AVIONICS:MiddleMarker
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Markers
Typical Completion Time:1000 ms


Name:Inner Marker
Tag:AVIONICS:InnerMarker
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Markers
Typical Completion Time:1000 ms


Name:Active Beacon
Tag:AVIONICS:BeaconChannel
Commands:GET, SET
Data Type:INTEGER
Range: 0 to 3
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Markers
Typical Completion Time:1000 ms


Name:AM Modulation Depth
Tag:AVIONICS:BeaconAmDepth
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=Markers
Typical Completion Time:1000 ms
```

```
Name:Bearing
Tag:AVIONICS:Bearing
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 360
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms


Name:Bearing Slew Off/On
Tag:AVIONICS:BearingSlew
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:0 ms


Name:Bearing Slew Slow/Fast
Tag:AVIONICS:BearingSlewRate
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:0 ms


Name:To/From
Tag:AVIONICS:ToFromFlag
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms


Name:VAR On/Off
Tag:AVIONICS:30HzVariableOnOff
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms


Name:REF Off/UnMod/On
Tag:AVIONICS:VORRefEnable
Commands:GET, SET
Data Type:LIST
List Values: Off, Un-Modulated, On
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
```

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Typical Completion Time:1000 ms

Name:VAR Frequency(Hz)
Tag:AVIONICS:30HzVariableFreq
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 40
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:0 ms

Name:VAR AM Modulation Depth
Tag:AVIONICS:30HzVariableDepth
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 40
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:0 ms

Name:REF Frequency
Tag:AVIONICS:30HzRefFreq
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 40
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms

Name:REF FM Sub Carrier Frequency
Tag:AVIONICS:SubCarrierFreq
Commands:GET, SET
Data Type:FLOAT
Range: 8964  to 10956
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms

Name:REF FM Deviation
Tag:AVIONICS:30HzRefDeviation
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 500
Availability:
        Operating Mode:Generate
        Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms

Name:REF AM Modulation Depth
Tag:AVIONICS:SubCarrierDepth
Commands:GET, SET
```

```
Data Type:FLOAT
Range: 20  to 40
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=VOR
Typical Completion Time:1000 ms


Name:AM Modulation Depth  (%)
Tag:AVIONICS:Selcal_AMDepth
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 100
Availability:
       Operating Mode:Generate
       Menu:AVIONICS:Subzone=Selcal
Typical Completion Time:50000 ms


Name:AVIONICS Library Version
Tag:AVIONICS:Version
Commands:GET
Data Type:STRING
Availability:
       Menu:AVIONICS
Typical Completion Time:0 ms


Name:
Tag:CABLE_SWEEP:Subzone
Commands:GET
Data Type:LIST
List Values: Table, Two Points, Multiple Points
Availability:
       Menu:CABLE_SWEEP
Typical Completion Time:100 ms


Name:
Tag:CABLE_SWEEP:Cable Sweep Files
Commands:GET, SET
Data Type:LIST
List Values:
Availability:
       Menu:CABLE_SWEEP:Subzone=Table
Typical Completion Time:0 ms


Name:Enable
Tag:CABLE_SWEEP:Cable Sweep State
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
       Menu:CABLE_SWEEP:Subzone=Table
Typical Completion Time:100 ms


Name:
Tag:CABLE_SWEEP:Data
Commands:GET
```

```
Data Type:ARRAY
Availability:
        Menu:CABLE_SWEEP
Typical Completion Time:0 ms


Name:
Tag:CABLE_SWEEP:Timestamp
Commands:GET
Data Type:STRING
Availability:
        Menu:CABLE_SWEEP
Typical Completion Time:0 ms


Name:100MHz Loss (dB)
Tag:CABLE_SWEEP:100MHz Point
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 0
Availability:
        Menu:CABLE_SWEEP:Subzone=Two Points
Typical Completion Time:0 ms


Name:1GHz Loss (dB)
Tag:CABLE_SWEEP:1GHz Point
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 0
Availability:
        Menu:CABLE_SWEEP:Subzone=Two Points
Typical Completion Time:0 ms


Name:Save File As
Tag:CABLE_SWEEP:Save
Commands:GET, SET
Data Type:STRING
char set:0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, G, H, I, J, K, L, M,
N, O, P, Q, R, S, T, U, V, W, X, Y, Z,  , ., _, (, )
Availability:
        Menu:CABLE_SWEEP:Subzone=Two Points, Multiple Points
Typical Completion Time:100 ms


Name:Select Display
Tag:VNA:Subzone
Commands:GET, SET
Data Type:LIST
List Values: Return Loss/VSWR, Distance To Fault, Calibration, Smith Chart
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms


Name:
Tag:VNA:Temperature
Commands:GET
Data Type:FLOAT
```

```
Availability:
        Menu:VNA
Typical Completion Time:100 ms

Name:Response Type
Tag:VNA:DTF Response
Commands:GET, SET
Data Type:LIST
List Values: Bandpass, Lowpass Impulse, Lowpass Step
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Maximum Length
Tag:VNA:Maximum Length
Commands:GET, SET
Data Type:FLOAT
Range: 0 m to 1000 m
Units: m, ft
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Start Distance
Tag:VNA:Start Distance
Commands:GET, SET
Data Type:FLOAT
Range: 0 m to 100 m
Units: m, ft
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Stop Distance
Tag:VNA:Stop Distance
Commands:GET, SET
Data Type:FLOAT
Range: 1 m to 100 m
Units: m, ft
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Start Frequency
Tag:VNA:Start Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 1000000 Hz to 6000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:VNA
```

```
        Menu:VNA:Subzone=Return Loss/VSWR, Smith Chart
Typical Completion Time:100 ms

Name:Stop Frequency
Tag:VNA:Stop Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 1000000 Hz to 6000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Smith Chart
Typical Completion Time:100 ms

Name:Center Frequency
Tag:VNA:Center Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 1000000 Hz to 6000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:Span
Tag:VNA:Span
Commands:GET, SET
Data Type:FLOAT
Range: 4000 Hz to 5999000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Smith Chart
Typical Completion Time:100 ms

Name:# of Points
Tag:VNA:Points
Commands:GET, SET
Data Type:INTEGER
Range: 101 to 10001
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:IFBW
Tag:VNA:IFBW
Commands:GET, SET
Data Type:LIST
List Values: 10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz, 100
kHz
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
```

```
Typical Completion Time:100 ms

Name:Trigger Mode
Tag:VNA:Trigger Mode
Commands:GET, SET
Data Type:LIST
List Values: Freeze, Single, Auto
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:Toggle with DO RF:RF Power
Tag:VNA:RF Power
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:Output Level
Tag:VNA:Output Level
Commands:GET, SET
Data Type:BOOLEAN
List Values: High, Low
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:Averaging
Tag:VNA:Averaging
Commands:GET, SET
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:Averaging Factor
Tag:VNA:Average Factor
Commands:GET, SET
Data Type:INTEGER
Range: 1 to 999
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms

Name:Smoothing
Tag:VNA:Smoothing
Commands:GET, SET
```

```
Data Type:BOOLEAN
List Values: Off, On
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms


Name:Smoothing Aperture
Tag:VNA:Aperture
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 20
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault, Smith Chart
Typical Completion Time:100 ms


Name:Samples
Tag:VNA:Frequency Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms


Name:Return Loss Samples
Tag:VNA:Return Loss Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms


Name:VSWR Samples
Tag:VNA:VSWR Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms


Name:Return Loss Ref Value (dB)
Tag:VNA:Return Loss Ref Value
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 1000
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms


Name:Return Loss Scale (dB/div)
```

```
Tag:VNA:Return Loss Scale
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 200
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:Return Loss Auto Scale
Tag:VNA:Return Loss Auto Scale
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:VSWR Ref Value
Tag:VNA:VSWR Ref Value
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 10001
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:VSWR Scale
Tag:VNA:VSWR Scale
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 1000
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:VSWR Auto Scale
Tag:VNA:VSWR Auto Scale
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:Distance Points
Tag:VNA:Distance Points
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms
```

```
Name:DTF Samples
Tag:VNA:DTF Data
Commands:GET
Data Type:ARRAY
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Distance Units
Tag:VNA:DTF X-Axis
Commands:GET, SET
Data Type:BOOLEAN
List Values: m, ft
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Ref Value (dB)
Tag:VNA:DTF Ref Value
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 1000
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Scale (dB/div)
Tag:VNA:DTF Scale
Commands:GET, SET
Data Type:FLOAT
Range: 0  to 200
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Auto Scale
Tag:VNA:DTF Auto Scale
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:
Tag:VNA:Cable Name
Commands:GET
Data Type:LIST
List Values: None
Availability:
```

```
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms


Name:Velocity Factor
Tag:VNA:Velocity Factor
Commands:GET
Data Type:FLOAT
Range: 0  to 1
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms


Name:Cable Loss
Tag:VNA:Cable Loss
Commands:GET
Data Type:FLOAT
Range: 0 dB/m to 10 dB/m
Units: dB/m, dB/ft
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms


Name:Cable Loss Frequency
Tag:VNA:Cable Loss Frequency
Commands:GET
Data Type:FLOAT
Range: 1000000 Hz to 10000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms


Name:Active Trace
Tag:VNA:Active Trace
Commands:GET, SET
Data Type:BOOLEAN
List Values: Return Loss, VSWR
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms


Name:Marker Mode
Tag:VNA:Markers
Commands:GET, SET
Data Type:LIST
List Values: Off, Absolute, Delta
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms
```

```
Name:Select Marker
Tag:VNA:Select Marker
Commands:GET, SET
Data Type:LIST
List Values: 1, 2, 3, 4, 5, 6, Ref [VNA:Markers=Delta]
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Marker Frequency
Tag:VNA:Marker Frequency
Commands:GET, SET
Data Type:FLOAT
Range: 1000000 Hz to 6000000000 Hz
Units: Hz, kHz, MHz, GHz
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:Marker Distance
Tag:VNA:Marker Distance
Commands:GET, SET
Data Type:FLOAT
Range: 0 m to 1000 m
Units: m, ft
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Marker On/Off
Tag:VNA:Marker On/Off
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Max Peak
Tag:VNA:Max Peak
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Peak Excursion
Tag:VNA:Peak Excursion
Commands:GET, SET
Data Type:FLOAT
```

```
Range: 0  to 1000
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Peak Left
Tag:VNA:Peak Left
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Peak Right
Tag:VNA:Peak Right
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Min Valley
Tag:VNA:Min Valley
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Valley Left
Tag:VNA:Valley Left
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Valley Right
Tag:VNA:Valley Right
Commands:DO
Data Type:FUNCTION
Availability:
        Operating Mode:VNA
        Menu:VNA:Subzone=Return Loss/VSWR, Distance To Fault
Typical Completion Time:100 ms

Name:Return Loss Markers X
Tag:VNA:RL Markers X
Commands:GET
Data Type:ARRAY
```

```
Availability:
      Operating Mode:VNA
      Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:Return Loss Markers Y
Tag:VNA:RL Markers Y
Commands:GET
Data Type:ARRAY
Availability:
      Operating Mode:VNA
      Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:VSWR Markers X
Tag:VNA:VSWR Markers X
Commands:GET
Data Type:ARRAY
Availability:
      Operating Mode:VNA
      Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:VSWR Y
Tag:VNA:VSWR Markers Y
Commands:GET
Data Type:ARRAY
Availability:
      Operating Mode:VNA
      Menu:VNA:Subzone=Return Loss/VSWR
Typical Completion Time:100 ms

Name:DTF Markers X
Tag:VNA:DTF Markers X
Commands:GET
Data Type:ARRAY
Availability:
      Operating Mode:VNA
      Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:DTF Markers Y
Tag:VNA:DTF Markers Y
Commands:GET
Data Type:ARRAY
Availability:
      Operating Mode:VNA
      Menu:VNA:Subzone=Distance To Fault
Typical Completion Time:100 ms

Name:Smith Chart Samples
Tag:VNA:Smith Data
Commands:GET
Data Type:ARRAY
Availability:
```

```
        Operating Mode:VNA
        Menu:VNA:Subzone=Smith Chart
Typical Completion Time:100 ms

Name:VNA Firmware Version
Tag:VNA:Version
Commands:GET
Data Type:STRING
Availability:
        Menu:VNA
Typical Completion Time:100 ms

Name:
Tag:UTILITY:LastParameter
Commands:GET
Data Type:INTEGER
Availability:
        Option:R8-OEM
        Menu:UTILITY
Typical Completion Time:0 ms
```

R – Updates for 4.3	M. Mullins	DC	9/8/21	0379
Q – Updates for 4.2	M. Mullins	DC	5/14/21	0366
P – Updates for 4.1	M. Mullins	DC	12/7/20	0324
N – Updates for 4.0	M. Mullins	DC	09/21/20	0318
M – Updates for 3.8	M. Mullins	DC	06/02/20	0308
L – Updates for 3.7	C. Mboula	DC	09/18/19	0224
K – Updates for 3.5	D. Bulgrien	DC	12/5/18	0215
J – Updates for 3.4.2	D. Bulgrien	DC	10/30/18	0211
H – Updates for 3.3	D. Bulgrien	DC	6/27/18	0198
G – Updates for 3.1	D. Bulgrien	DC	3/7/18	0167
F – Updates for 3.0.0.0	M. Mullins	DC	11/10/17	0156
E – Updates for 2.3.4.0	D. Bulgrien	DC	5/18/17	0118
D – Updates for 2.2.0.0	D. Bulgrien	DC	1/15/17	0098
C – Updates for 2.1.0.0	M. Mullins	F.Fu	8/18/16	0063
B – Updates for 2.0.0.0	D. Bulgrien	F. Fu	8/17/16	0052
A – Was CG1110; 1.19 updates	M. Mullins	F.Fu	11/5/15	0007
Revision – Change	Requested By	Released By	Date	ECO#