



# **G7M Signal Generator**

SCPI Command Reference

VERSION 2.6

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Micran, Research & Production Company

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# 1. SCPI Basics

## 1.1 Introduction

The Standard Commands for Programmable Instruments (SCPI) defines a set of standard programming commands for use by all SCPI compatible instruments. This section describes the general use of the SCPI language for the Micran instruments.

For additional information refer to the SCPI Consortium or IEEE (IEEE Standard 488.2).

## 1.2 Command Structure

All SCPI commands, except the common commands, are organized in a hierarchical structure similar to the inverted tree file structure used in most computers. The command keywords that correspond to the major instrument control functions are located at the top of the command tree. All SCPI commands, except the ABORt command, have one or more subcommands (keywords) associated with them to further define the instrument function to be controlled. The subcommand keywords may in turn also have one or more associated subcommands (keywords). Each subcommand level adds another layer to the command tree. The command keyword and its associated subcommand keywords form a portion of the command tree called a command subsystem. The :INITiate command subsystem is shown below.

```

:INITiate
    :CONTinuous
        <bool>
    :[:IMMEDIATE]

```

## 1.3 Subsystems

Subsystem commands are distinguished by the colon (:). The colon is used at the beginning of a command statement and between keywords. For example:

```
:SYSTem:ERRor:COUNT?
```

"COUNT" is the query of the "ERRor" subsystem contained in the "SYSTem" top command tree.

## 1.4 Mnemonic Generation Rules

Each instrument-control header or keyword has both a long and a short form. A SCPI instrument shall accept only the exact short and the exact long forms. Sending a header that is not the short form, nor the complete long form to a SCPI instrument shall cause it to generate an error. For example:

:INPut:ATTenuation

command can be typed as:

:INP:ATT

Incorrect command notation listed below:

:INPU:ATTenuation

## 1.5 Letter case

Lowercase and uppercase letters are considered equivalent:

:INP:ATTenuation and :inP:AtT

## 1.6 Parameters

A typical command is made up of keywords prefixed with colons (:). The keywords are followed by parameters. There is a separating space (white space) between the command and its parameter. Few parameters should be separated using commas (','). Example:

:FREQ:LIST 1000 MHz, 2000 MHz, 3000 MHz, 4000 MHz

### 1.6.1 Numeric formats (<numeric>)

Numeric parameters are used in both common and subsystem commands. They accept all commonly used decimal representations of numbers including optional signs, decimal points, and scientific notation.

The following syntax conventions are used for numeric data parameters:

- <NR1> - a signed integer without a decimal point (implied radix point), e.g.: 12, +23, -656;
- <NR2> - a signed number with an explicit radix point, e.g.: 12.571;
- <NR3> - a scaled explicit decimal point numeric value with radix and exponent

(e.g., floating point number), such as 12.451E4 (equals 124510).

Extended numeric parameters also include the following special parameters:

- DEFault - resets the parameter to its default value;
- UP - increments the parameter;
- DOWN - decrements the parameter;
- MINimum - sets the parameter to the smallest possible value;
- MAXimum - sets the parameter to the largest possible value.

### 1.6.2 Unit Suffixes

Numeric parameters may be followed by an optional suffix:

Suffix	Multiplier
A	1e-18
F	1e-15
P	1e-12
N	1e-9
U	1e-6
M*	1e-3
K	1e3
MA	1e6
G	1e9
T	1e12
PE	1e15
EX	1e18

\* - suffix M relates to 1e6 instead of 1e-3 when using MHZ or OHM units.

If the suffix is omitted, default units are used. Various frequency parameters may contain following suffixes:

Suffix	Multiplier
Hz	1e
KHz	1e3
MHz	1e6

GHz	1e9
-----	-----

### 1.6.3 Boolean Parameters (<boolean>)

Boolean parameters represent a single binary condition that is either true or false. The two-state boolean parameter has four arguments. The following list shows the arguments for the two-state boolean parameter:

- ON or 1 – boolean true;
- OFF or 0 – boolean false.

Boolean parameters are always returned as 1 or 0 by query commands, e.g.:

```
[SENSe]:AVERage[:STATe] ON|1|OFF|0
```

will respond with 0 or 1.

### 1.6.4 Discrete Parameters (<character\_data>)

Discrete parameters use mnemonics to represent each valid setting. They have a long and a short form, just like command mnemonics. You can mix upper and lower case letters for discrete parameters:

```
TRIGger:SOURce {BUS|INTernal|IMMEDIATE|EXTernal}
```

"BUS", "INTernal", "IMMEDIATE", "EXTernal" are allowed values.

Discrete parameters are always returned in short upper case form.

### 1.6.5 String Parameters (<string>)

String parameters allow ASCII strings to be sent as parameters. Single or double quotes are used as delimiters, e.g.:

```
MEMory:ADC:SElect "table_1"
```

## 1.7 Queries

All commands, unless otherwise noted, have an additional query form. As defined in IEEE 488.2, a query is a command header with a question mark symbol appended. When a query form of a command is received, the current setting associated with the command is placed in the output buffer. The command and associated query are listed below:



:INP:ATT 20  
:INP:ATT?

## 1.8 Program Message Terminator

LF (0x0A, new line, «\n») symbol (ASCII) is using as program message terminator. «\r\n» (0x0D, 0x0A - new line + carriage return) may be used too, but LF is always returned in query commands.

## 1.9 The Syntax Conventions

The syntax conventions that are used for all SCPI command keywords and data parameter descriptions in this manual are described below:

- Angle brackets (< >) around a word (or words) indicate they are not to be used literally in the command. They represent the needed item.
- A vertical stroke ( | ) between keywords or parameters indicates alternative choices. For parameters, the effect of the command varies depending on the choice.
- Square brackets ( [ ] ) indicate that the enclosed keywords or parameters are optional when composing the command. These implied keywords or parameters will be executed even if they are omitted.
- Braces ( { } ) indicate that parameters can optionally be used in the command once, several times, or not at all.

## 2. IEEE 488 Common Commands

### 2.1. Команда \*CLS

(Write-only) Clears the instrument status byte by emptying the error queue and clearing all event registers. Also cancels any preceding \*OPC command or query.

### 2.2. Команда \*ESR?

(Read-only) The Standard Event Status Register (ESR) query returns the value of the Standard Event Status Register.

#### Standard Event Status Register Bits

Bits	Bit name	Description
0	Operation Complete	A "1" in this bit position indicates that all pending signal generator operations were completed following execution of the *OPC command.
1	Request Control	This bit is always set to "0".
2	Query Error	A "1" in this bit position indicates that a query error has occurred. Query errors have instrument error numbers from -499 to -400.
3	Device Dependent Error	A "1" in this bit position indicates that a device dependent error has occurred. Device dependent errors have instrument error numbers from -399 to -300 and 1 to 32767.
4	Execution Error	A "1" in this bit position indicates that an execution error has occurred. Execution errors have instrument error numbers from -299 to -200.
5	Command Error	A "1" in this bit position indicates that a command error has occurred. Command errors have instrument error numbers from -199 to -100.
6		Unused.
7	Power On	A "1" in this bit position indicates RF output state. Also both pressed out RF switch and unleveled power reset this bit to "0".

### 2.3. Команда \*IDN?

(Read-only) This query requests an identification string from the signal generator. The IDN string consists of the following information: *Micran,<model number>,<serial number>,<software version>*.

## 2.4. Команда \*OPC?

(Read-only) Returns an ASCII "+1" when all pending overlapped operations have been completed.

## 2.5. Команда \*RST

(Write-only) Resets most parameters to factory-defined values.

## 2.6. Команда \*STB?

(Read-only) This command reads the decimal sum of the bits set in the Status Byte register.

## 2.7. Команда \*TRG

(Write-only) The Trigger (TRG) command triggers the device if BUS is the selected trigger source, otherwise, \*TRG is ignored. For more information on triggers; refer to [TRIGger\[:SEQuence\]:SOURce](#).

### 3. ABORt commands

(Write-only) This command causes the List or Step sweep in progress to abort. If [INITiate:CONTinuous\[:ALL\]](#) is set to ON, the sweep will immediately re-initiate. The pending operation flag affecting [\\*OPC?](#) will undergo a transition once the sweep has been reset.

## 4. INITiate commands

### 4.1. Команда INITiate:CONTinuous

#### 4.1.1. Команда INITiate:CONTinuous[:ALL] <bool>

(Write or Read) This command selects either a continuous or single List or Step sweep. Execution of this command does not affect a sweep in progress.

##### Parameters

<bool>                      Allowed values:

- ON
- OFF

### 4.2. Команда INITiate[:IMMediate]

#### 4.2.1. Команда INITiate[:IMMediate][:ALL]

(Write-only) This command arms a single sweep when BUS, EXternal is the trigger source selection, or arms and starts a single sweep when trigger mode is IMMediate.

## 5. OUTPut commands

The output control of the microwave.

### 5.1.1. Команда OUTPut:RFSWitch[:STATe]?

(Read-only) Returns RF switch state on the front panel.

### 5.2. Команда OUTPut[:STATe] <bool>

(Write or Read) This command enables or disables the RF output.

#### Parameters

<bool>                      Output state.

Allowed values:

- **ON**
- **OFF**

Default value: **OFF**

## 6. SOURce commands

Controls the settings of the source.

### 6.1. Команда [SOURce]:FREQuency

Controls the settings of the source frequency.

#### 6.1.1. Команда [SOURce]:FREQuency[:CW|FIXed] <num>

**(Write-only)** This command sets the signal generator output frequency for the CW frequency mode.

##### Parameters

<num> Fixed frequency

Supported units: Hz(default), kHz, MHz, GHz

Allowed values:

- MINimum
- MAXimum

#### 6.1.2. Команда [SOURce]:FREQuency:CENTer <freq>

**(Write or Read)** This command sets the center frequency of sweep.

##### Parameters

<freq> Supported units: Hz(default), kHz, MHz, GHz

Allowed values:

- MINimum
- MAXimum

#### 6.1.3. Команда [SOURce]:FREQuency:MODE <char>

**(Write or Read)** This command sets the frequency mode of the signal generator.

##### Parameters

<char> The frequency mode of the signal generator.

Allowed values:

- **CW** - fixed frequency mode
- **FIXed** - fixed frequency mode (same as CW)
- **SWEEp** - stepped frequency sweep
- **LIST** - frequency list sweep

Default value: **CW**

#### 6.1.4. Команда [SOURce]:FREQuency:SPAN <freq>

(Write or Read) This command sets the frequency span of sweep.

##### Parameters

<freq> Supported units: Hz(default), kHz, MHz, GHz

Allowed values:

- **MINimum**
- **MAXimum**

#### 6.1.5. Команда [SOURce]:FREQuency:STARt <num>

(Write or Read) This command sets the start frequency of sweep.

##### Parameters

<num> Start frequency.

Supported units: Hz(default), kHz, MHz, GHz

Allowed values:

- **MINimum**
- **MAXimum**

#### 6.1.6. Команда [SOURce]:FREQuency:STOP <num>

(Write or Read) This command sets the stop frequency of sweep.



## Parameters

<num> Stop frequency.

Supported units: Hz(default), kHz, MHz, GHz

Allowed values:

- **MINimum**
- **MAXimum**

## 6.2. Команда [SOURce]:LIST

Subsystem specifies the list sweep parameters.

### 6.2.1. Команда [SOURce]:LIST:DWELL <num>

(Write or Read) This command sets the dwell time for points in the current list sweep. Supports one point only.

## Parameters

<num> Dwell time.

Supported units: s, ms, us, ns(default)

#### 6.2.1.1. Команда [SOURce]:LIST:DWELL:POINTS?

(Read-only) This command queries the signal generator for the number of dwell points.

### 6.2.2. Команда [SOURce]:LIST:MODE <char>

(Write or Read) This command sets the operating mode for the current list or step sweep.

## Parameters

<char> Allowed values:

- **AUTO** - enables the selected sweep type to perform a sweep of all points
- **MANual** - enables you to select an individual sweep point, generator moves to next point after trigger event only

### 6.2.3. Команда [SOURce]:LIST:FREQuency <num> ,<...>

(Write-only) This command sets the frequency values for the current list sweep points.

#### Parameters

<num>	Frequency
<...>	Next frequencies

#### 6.2.3.1. Команда [SOURce]:LIST:FREQuency:POINts?

(Read-only) This command queries the current list sweep file for the number of frequency points.

### 6.2.4. Команда [SOURce]:LIST:POWer <num> ,<...>

(Write-only) This command sets the amplitude for the current list sweep points.

#### Parameters

<num>	Power value
<...>	Next power values

#### 6.2.4.1. Команда [SOURce]:LIST:POWer:POINts?

(Read-only) This command queries the number of power points in the current list sweep file.

## 6.3. Команда [SOURce]:POWer

Subsystem of management of source signal power.

### 6.3.1. Команда [SOURce]:POWer[:LEVel]

#### 6.3.1.1. Команда [SOURce]:POWer[:LEVel][:IMMediate]

##### 6.3.1.1.1. Команда [SOURce]:POWer[:LEVel][:IMMediate][:AMPLitude] <num>

(Write or Read) Sets the power source level.

#### Parameters

**<num>** Source power.

Supported units: dBm(default), W

Allowed values:

- **MINimum**
- **MAXimum**

Default value: **-20**

## 6.3.2. Команда [SOURce]:POWER:ALC

### 6.3.2.1. Команда [SOURce]:POWER:ALC[:STATE] <bool>

**(Write or Read)** This command enables or disables the automatic leveling control (ALC) circuit. G7M doesn't allow to disable ALC circuit, -224 (Illegal parameter value) error will be raised if user attempts set OFF.

#### Parameters

**<bool>** ALC state.

Allowed values:

- **ON**
- **OFF**

Default value: **ON**

### 6.3.3. Команда [SOURce]:POWER:CENTer <num>

**(Write or Read)** Sets the power sweep center power.

#### Parameters

**<num>** Center power.

Supported units: dBm(default)

Allowed values:

- **MINimum**
- **MAXimum**

### 6.3.4. Команда [SOURce]:POWER:MODE <state>

(Write or Read) This command sets the power mode.

#### Parameters

<state> Power mode.

Allowed values:

- **FIXed** - fixed power mode
- **SWEep** - stepped power sweep
- **LIST** - power list sweep

Default value: **FIXed**

### 6.3.5. Команда [SOURce]:POWER:SPAN <num>

(Write or Read) Sets the power sweep span power.

#### Parameters

<num> Span power. Actual achievable leveled power depends on frequency.

Supported units: dB(default)

Allowed values:

- **MINimum**
- **MAXimum**

### 6.3.6. Команда [SOURce]:POWER:START <num>

(Write or Read) This command sets the signal power of the first sweep point.

#### Parameters

<num> Start power.

Supported units: dBm(default)

Allowed values:

- **MINimum**

## MAXimum

### 6.3.7. Команда [SOURce]:POWER:STOP <num>

(Write or Read) This command sets the signal power of the last sweep point.

#### Parameters

<num> Stop power.

Supported units: dBm(default)

Allowed values:

- MINimum
- MAXimum

### 6.4. Команда [SOURce]:PULM

Determines the parameters of the modulation.

#### 6.4.1. Команда [SOURce]:PULM:POLarity <char>

(Write or Read) This command selects the polarity of the output pulse signal.

#### Parameters

<char> Pulse polarity.

Allowed values:

- NORMal - without inversion
- INVerted - inverted

Default value: **NORMal**

#### 6.4.2. Команда [SOURce]:PULM:STATE <bool>

(Write or Read) This command enables or disables pulse modulation for the selected path.

#### Parameters

<bool> Modulation state.

Allowed values:

- **ON**
- **OFF**

Default value: **OFF**

### 6.4.3. Команда [SOURce]:PULM:SOURce <char>

(Write or Read) This command sets the source for pulse modulation.

#### Parameters

<char> Pulse modulation source.

Allowed values:

- **INTernal** - internal source
- **EXTernal** - external source

### 6.4.4. Команда [SOURce]:PULM:INTernal

This subsystem sets parameters of pulse signal.

#### 6.4.4.1. Команда [SOURce]:PULM:INTernal:PERiod <num>

(Write or Read) This command sets the pulse period for the internally generated pulse.

#### Parameters

<num> Period.

Supported units: s, ms, us(default), ns

Value range: **40ns ÷ 4s**

#### 6.4.4.2. Команда [SOURce]:PULM:INTernal:PWIDth <num>

(Write or Read) This command sets the pulse width for the internally generated pulse signal.

#### Parameters

<num> Width.

Supported units: s, ms, us(default), ns

Value range: **20ns ÷ 4s**

## 6.5. Команда [SOURce]:ROSCillator

Reference oscillator settings.

### 6.5.1. Команда [SOURce]:ROSCillator:SOURce <char>

(Write or Read) Defines source of the reference frequency.

#### Parameters

<char>                      Reference oscillator's type.

Allowed values:

- **INTernal** - internal
- **EXTernal** - external

Default value: **INTernal**

### 6.5.2. Команда [SOURce]:ROSCillator:EXTernal

#### 6.5.2.1. Команда [SOURce]:ROSCillator:EXTernal:FREQuency <num>

(Write or Read) Tells the analyzer the frequency of the external reference.

#### Parameters

<num>                      External reference frequency.

Default value: **10 MHz**

## 6.6. Команда [SOURce]:SWEep

Sweep parameters.

### 6.6.1. Команда [SOURce]:SWEep:DWELL <num>

(Write or Read) This command sets the dwell time for a step sweep.

## Parameters

<num> Dwell time.

Allowed values:

- **MINimum**
- **MAXimum**

Default value: **0**

### 6.6.2. Команда [SOURce]:SWEep:STEP <num>

(Write or Read) This command sets frequency step. Relates with SPAN and POINTs values by means  $STEP = SPAN / (POINTS - 1)$  expression.

## Parameters

<num> Frequency step.

Supported units: Hz(default), kHz, MHz, GHz

Allowed values:

- **MINimum**
- **MAXimum**

### 6.6.3. Команда [SOURce]:SWEep:POINTs <num>

(Write or Read) This command enables to define the number of points in a step sweep.

## Parameters

<num> Points number.

Allowed values:

- **MINimum**
- **MAXimum**

Value range: **1 ÷ 5001**

Default value: **501**



## 7. SYSTem commands

Controls and queries settings that affect the G7M system.

### 7.1. Команда SYSTem:ERRor

#### 7.1.1. Команда SYSTem:ERRor[:NEXT]?

(Read-only) This query returns the most recent error message from the signal generator error queue.

### 7.2. Команда SYSTem:VERSion?

(Read-only) This command returns the SCPI version number with which the signal generator complies.

## 8. TRIGger commands

Subsystem is used for trigger configuration.

### 8.1. Команда TRIGger:AUXiliary

#### 8.1.1. Команда TRIGger:AUXiliary:DURation <num>

(Write or Read) Specifies the width of the output pulse, which is the time that the aux trigger output will be asserted.

##### Parameters

<num> Duration value in microseconds.

Supported units: s, ms, us(default), ns

Value range: **1 us ÷ 255 us**

Default value: **10 us**

#### 8.1.2. Команда TRIGger:AUXiliary:INTerval <char>

(Write or Read) Defines when (on what event) the signal of synchronization is formed at the synchronization output.

##### Parameters

<char> Trigger OUT mode.

Allowed values:

- **POINT** - PLL lock
- **SWEEP** - sweep start
- **AUXiliary** - relay TRIGGER IN
- **PULSE** - pulse gen

Default value: **POINT**

#### 8.1.3. Команда TRIGger:AUXiliary:OPOLarity <char>

(Write or Read) Sets polarity of a signal at the synchronization output.

##### Parameters

&lt;char&gt;

Allowed values:

- **NEGative**
- **POSitive**

Default value: **POSitive**

#### 8.1.4. Команда TRIGger:AUXiliary[:OUTPut]

Configuration of the auxiliary trigger outputs.

##### 8.1.4.1. Команда TRIGger:AUXiliary[:OUTPut][:ENABLE] <bool>

(Write or Read) Turns ON / OFF the trigger output. Trigger interval is configured by [TRIGger:AUXiliary:INTerval](#).

##### Parameters

&lt;bool&gt;

Allowed values:

- **ON**
- **OFF**

Default value: **OFF**

#### 8.1.5. Команда TRIGger:AUXiliary:PULSe

Interanal pulse generator settings.

##### 8.1.5.1. Команда TRIGger:AUXiliary:PULSe:PERiod <num>

(Write or Read) Sets the pulse-period (high + low level widths) for the pulse generator

##### Parameters

&lt;num&gt;

Pulse period in nanoseconds.

Supported units: s, ms, us, ns(default)

##### 8.1.5.2. Команда TRIGger:AUXiliary:PULSe:WIDTH <num>

(Write or Read) Sets the pulse width (high level width).

##### Parameters

<num> Pulse width in nanoseconds.

Supported units: s, ms, us, ns(default)

### 8.2.1. Команда TRIGger[:SEQuence][:IMMediate]

(Write-only) Command provides a single-pass round of waiting signal start. If the device is not in a start waitstate, the error -211, «Trigger ignored» will be created.

### 8.2.2. Команда TRIGger[:SEQuence]:SLOPe <char>

(Write or Read) This command sets the polarity of an external signal at the TRIG IN connector.

#### Parameters

<char> External trigger pulse polarity.

Allowed values:

- **NEGative**
- **POSitive**

Default value: **POSitive**

### 8.2.3. Команда TRIGger[:SEQuence]:SOURce <char>

(Write-only) This command sets the sweep trigger source for a List or Step sweep.

#### Parameters

<char> Trigger source.

Allowed values:

- **BUS** - enables source triggering using the \*TRG
- **IMMediate** - internal source sends continuous trigger signals (trigger IN disabled)
- **EXTernal** - auxiliary trigger IN

Default value: **IMMediate**

## 9. UNIT commands

Units of measure of device parameters.

### 9.1. Команда UNIT:POWer <char>

(Write or Read) This command selects units of measure for a power values.

#### Parameters

<char>                      Units.

Allowed values:

- **dBm** - dBm
- **W** - Watts

Default value: **dBm**

# SCPI Errors Description

Error Code	Error String	Description
(+)0	"No error"	No error
-108	"Parameter not allowed"	More parameters were received than expected for the command. You may have entered an extra parameter, or added a parameter to a command that does not accept a parameter
-109	"Missing parameter"	Fewer parameters were received than expected for the command. You may have omitted one or more parameters that are required for this command
-113	"Undefined header"	A command was received that is not valid for the instrument. You may have misspelled the command, it may not be a valid command, or you may have the wrong interface selected. If you are using the short form of the command, remember that it may contain up to four letters
-121	"Invalid character in number"	Indicates an invalid character for the data type being parsed was encountered. For example, an alpha in a decimal numeric or a "9" in octal data.
-123	"Exponent too large"	Indicates the magnitude of an exponent was greater than 32000, see IEEE 488.2, 7.7.2.4.1.
-128	"Numeric data not allowed"	Indicates that a legal numeric data element was received, but the device does not accept one in this position for the header.
-131	"Invalid suffix"	A suffix was incorrectly specified for a numeric parameter. You may have misspelled the suffix. For example, SENS:FREQ 200KZ
-138	"Suffix not allowed"	A suffix was received following a numeric parameter which does not accept a suffix. For example, INIT:CONT 0Hz
-211	"Trigger ignored"	Indicates that GET, *TRG or TRIG:IMM was received but was ignored because the device was not in the wait-for-trigger state
-213	"Initiation ignored"	Init ignored.
-221	"Settings conflict"	This message means that command has been received and processed successfully, but will be ignored due to conflicting settings
-222	"Data out of range"	A numeric parameter value is outside the valid range for the command

-224	"Illegal parameter value"	Illegal parameter value. A discrete parameter was received which was not a valid choice for the command. You may have used an invalid parameter choice. For example, TRIG:SOUR EX
-226	"List not same length"	This occurs when frequency and dwell time lists do not correspond in length, for example
-310	"System error"	System error
-350	"Queue overflow"	The error queue is full and another error has occurred which could not be recorded
-365	"Time out error"	Operation timeout.
104	"Ethernet connection is closed"	Ethernet connection is closed
106	"Source power unlevel"	Source power is not stabilized
109	"ADC overload"	ADC overload
117	"Specified power is not reached"	Specified power is not reached
120	"Not enough frequency resolution"	Not enough frequency resolution
206	"Read timeout"	Read timeout
207	"Write timeout"	Write timeout
223	"Unknown software error"	Unknown software error
225	"Operation canceled"	Operation canceled
226	"Connection lost"	Device connection lost
306	"PLD error"	PLD error
307	"LO1 no PLL"	LO1 no phase lock loop
310	"Digital synchronization timeout"	Digital synchronization timeout

311	"Synthesizer timeout"	Synthesizer timeout
315	"EPROM error"	Electrically Erasable Programmable Read-Only Memory error
316	"EPROM mismatch"	Electrically Erasable Programmable Read-Only Memory mismatch
319	"LVDS timeout"	Low-voltage differential signaling timeout
320	"LVDS device missing"	Low-voltage differential signaling device missing
321	"LVDS device register missing"	Low-voltage differential signaling device register missing
324	"Invalid file format"	Invalid file format
325	"LVDS packets duplication"	Low-voltage differential signaling packets duplication
326	"Synthesizer mode error"	Synthesizer mode error
328	"External reference oscillator lock detect failed"	External reference oscillator lock detect failed
329	"Synthesizer lock detect failed"	Synthesizer lock detect failed
556	"Internal request failed"	Internal request failed
557	"File system error"	File system error
558	"Path not found"	Path not found
559	"File name not found"	File name not found
560	"Read file error"	Read file error
561	"Write file error"	Write file error



562	"Access denied"	Access denied
563	"CRC error"	Cyclic Redundancy Check error
565	"Not enough space"	Not enough space
566	"File size is too small"	File size is too small
568	"XML node not found"	XML node not found
573	"Out of memory"	Out of memory
575	"Device load interrupt"	Device load interrupt
577	"Internal request timeout"	Internal request timeout
579	"Invalid frequency"	Invalid frequency