

**GPIB Command Syntax
for
Fast Switching**

E1987A Fast Switching Test Application Rev. A.04

**E6785C/T GSM/GPRS_W-CDMA Lab Application (Fast Switching)
Rev. C.04/T.00**

1000-1925
Print Date: July 2006



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GPIB Syntax for Fast Switching

GPIB Commands that Switch Formats

For a detailed description of GPIB commands that are used for format switching, see:
“SYSTem:APPLication:FORMat[:NAME]” on page 5

GPIB Commands for the Applications in Fast Switching Formats

GPIB command syntax for the fast switching applications is identical to the syntax for the test and lab applications. For details on a specific format’s syntax, tab to the GPIB commands section for that format.

For example, to locate the GPIB commands for the 1xEV-DO test application that is included in the E1987A fast switching application, tab to the 1xEV-DO (E1966A) technology.

GPIB Commands with Format Mnemonics

Some GPIB commands are common to more than one technology in a fast switching application. To specify a technology when using these commands the test set accepts a format mnemonic at the end of the command (:SElected, :GSM, :GPRS, :TA136, :DIGital136, :DIGital95, :DIGital2000, :TA2000, :DIGital856, :TA856, :FDD and :WCDMA).

For a listing of the GPIB commands that are common to multiple technologies, see:
“GPIB Commands with Format Mnemonics” on page 1

If you do not add a format mnemonic to a common command, the command is applied to the currently active technology.

Diagram Conventions

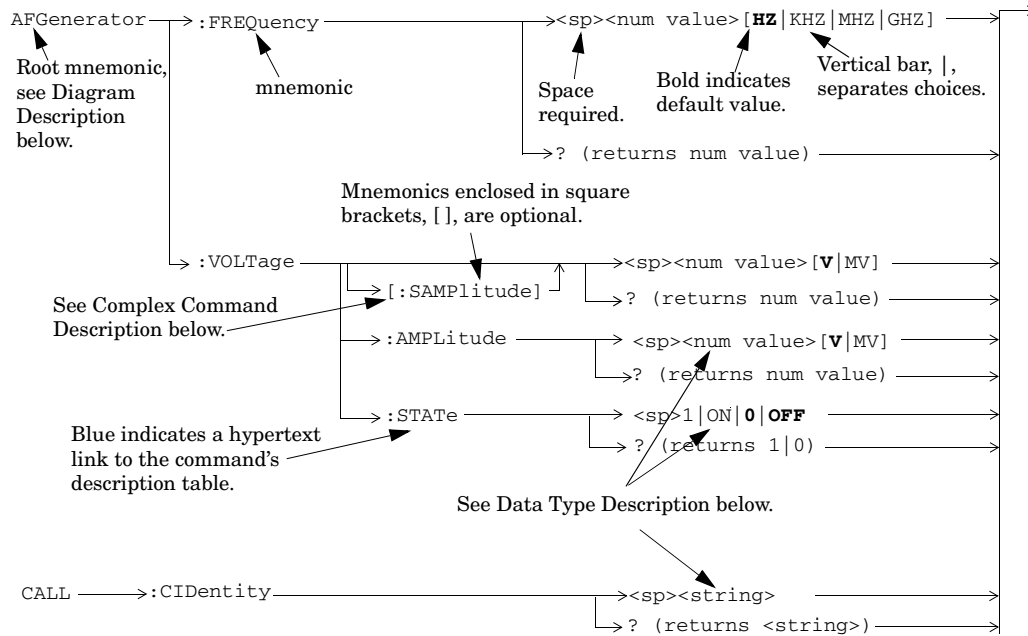


Diagram Description Mnemonics are connected by lines. Each line can be followed in only one direction, as indicated by the arrow at the end of the line. Any combination of mnemonics that can be generated by starting at the root mnemonic and following the line in the direction of the arrow is syntactically correct.

The drawings show the proper use of spaces. Where spaces are required they are indicated by `<sp>`, otherwise no spaces are allowed between mnemonics.

Complex Command Description A complex command sets the state of the parameter to ON, and is used to set a value for that parameter. These parameters; amplitude, frequency, gain, number, time, and value can be used as a complex command. Refer to the specific command for the parameter that applies.

GPIB Syntax for Fast Switching

Developing Code

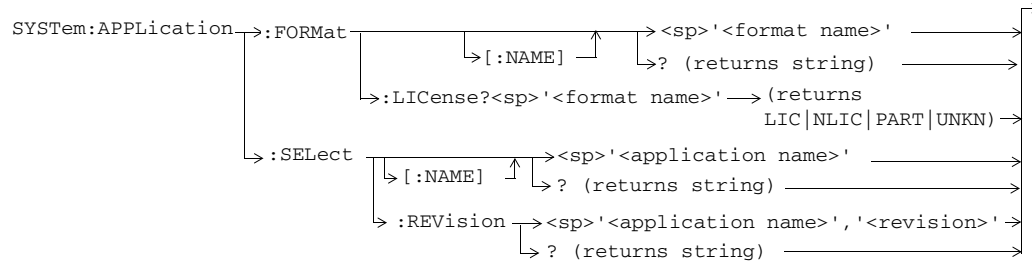
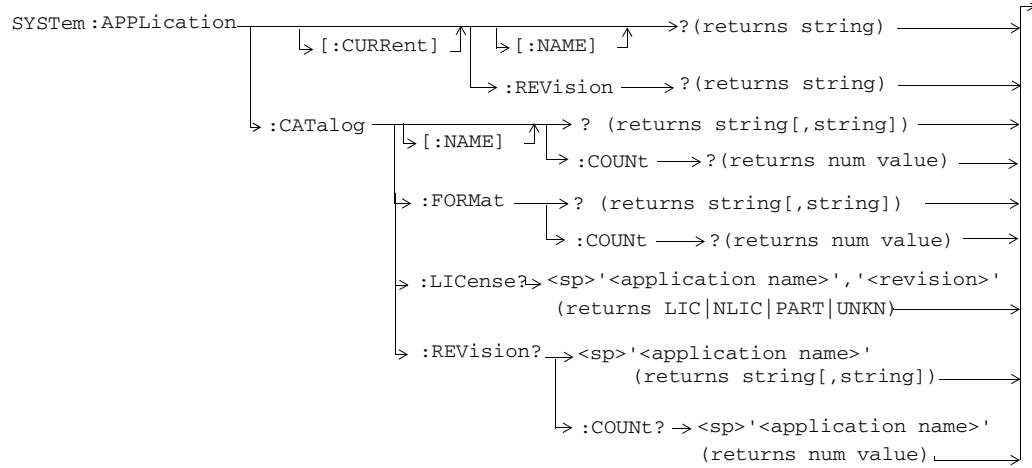
It is recommended that you set the test set's operating environment to debug. When debug mode is on, the error message displayed on the test set's front panel when incorrect GPIB syntax is sent to the test set is enhanced with additional information to help you correct the syntax error. To set the test set debug mode to "ON" use the following syntax:

```
SYSTem:COMMunicate:GPIB:DEBug ON
```

Data Type Description

num value	Integer, float or scientific values. For example, CALL:POWer -55.5 CALL:POWer -5.55E+001 CALL:CHANnel 525
string	Characters. The string will often need to be enclosed in single or double quotes, depending upon your programming environment. For example, CALL:UPLink:PRACHannel:ASUBchannels '111111111111' The string returned by the test set is enclosed by double quotes.
choice1 choice2 choice3	Specific character choices. For example, CALL:OPERating:MODE D2KTest SYSTem:COMMunicate:GPIB:DEBug ON

SYSTem:APPLication



GPIB Syntax for Fast Switching

GPIB Commands with Format Mnemonics

Some of the GPIB commands are common to multiple technologies in a fast switching application. To send a command that specifies a particular technology an extension is added to the command. It is called a format mnemonic.

Using format mnemonics is optional unless you want to send a command that is directed to a technology that is not currently active.

If you do not use a format mnemonic, or if you append the optional [:SElected] format mnemonic, the command is applied to the technology that is currently active.

The following format mnemonics can be appended to the commands listed in the table below.

- [:SElected] (the format that is currently active).
- :GSM (GSM/GPRS/EGPRS).
- :TA136 (AMPS/136).
- :DIGital136 (AMPS/136).
- :WCDMa (W-CDMA).
- :FDD (Frequency Division Duplex system in the W-CDMA format).
- :CW (CW system).
- :DIGital856 (IS-856 system in the IS-856 1xEV-DO format).
- :TA856 (IS-856 1xEV-DO format).
- :AMPS (AMPS system in the cdma2000/IS-95/AMPS format).
- :TA2000 (cdma2000/IS-95/AMPS format).
- :DIGital95, this selects the IS-95 system in the cdma2000/IS-95/AMPS format, whether the format is active or not.
- :DIGital2000 (cdma2000 system in the cdma2000/IS-95/AMPS format).

Format Mnemonics

The table shown below, "GPIB Commands using Format Mnemonics", lists the commands with format mnemonics. If you are running the 1987A, which includes all technologies, any of these commands could apply to your needs. If you are running any of the other fast switching applications, use the following key to determine which commands apply to your application:

- B = E1985B GSM/GPRS_AMPS/136_W-CDMA Mobile Test Fast Switching
- C = E1985C GSM/GPRS_cdma2000/IS-95/AMPS Mobile Test Fast Switching
- E = E1985E cdma2000/IS-95/AMPS_1xEV-DO Mobile Test Fast Switching
- L = E6785B GSM/GPRS_W-CDMA Lab Application Fast Switching

Table 1. GPiB Commands using Format Mnemonics

Command	[: S E L e c t e d]	: G S M	: T A 1 3 6	: D I G i t a l 1 3 6	: W C D M a	: F D D	: C W	: A M P S	: T A 8 5 6	: D I G i t a l 8 5 6	: T A 2 0 0 0	: D I G i t a l 2 0 0 0	: D I G i t a l 9 5
ABORt:DPOWer	B	B		B									
ABORt:IQTuning	B	B		B									
CALL:AWGNoise:POWer: AMPLitude	E									E		E	E
CALL:AWGNoise:POWer[: SAMPlitude]	E									E		E	E
CALL:AWGNoise:POWer: STATe	E									E		E	E
CALL[:CELL]:BAND	C,E	C								E		C,E	C,E
CALL[:CELL]:CLPContro l:REVerse:MODE	E								E		E		
CALL[:CELL]:LACode	B,L	B,L			B,L								
CALL[:CELL]:MCCode	B,C, E,L	B,C, L		B	B,L				E		C,E		
CALL[:CELL]:MNCODE	C	C									C		
CALL[:CELL]:POWer:AM PLitude	B,C, E,L	B,C, L	B			B,L	B,C, E,L	C,E		E		C,E	C,E
CALL[:CELL]:POWer[:SA MPlitude]	B,C, E,L	B,C, L	B		L	B,L	B,C, E,L	C,E		E		C,E	C,E
CALL[:CELL]:POWer:ST ATe	B,C, E,L	B,C, L	B		L	B,L	B,C, E,L	C,E		E		C,E	C,E
CALL[:CELL]:RACode	B,L	B,L			B,L								
CALL[:CELL]:RFGenerat or:FREQuency	B	B	B										
CALL:CHANnel	E			E								E	E

GPIO Syntax for Fast Switching

Table 1. GPIO Commands using Format Mnemonics

Command	[: S E L e c t e d]	: G S M	: T A 1 3 6	: D I G i t a l 1 3 6	: W C D M a	: F D D	: C W	: A M P S	: T A 8 5 6	: D I G i t a l 8 5 6	: T A 2 0 0 0	: D I G i t a l 2 0 0 0	: D I G i t a l 9 5
CALL:CONNeCted:DRoP: TiMEr[:STATe]	E								E		E		
CALL:CONNeCted:LiMiT[: STATe]	E								E		E		
CALL:MS:REPorted:IMEI	B,L	B,L			B,L								
CALL:MS:REPorted:IMSI	B,L	B,L			B,L								
CALL:MS:REPorted:ONU Mber	B	B	B										
CALL:MS:REPorted:PCL ass	B,L	B,L	B		B,L								
CALL:MS:REPorted:REVi sion[:DIGital]	B	B	B										
CALL:MS:REPorted:MCC ode	C	C									C		
CALL:MS:REPorted:MNC ode	C	C									C		
CALL:MS:REPorted:PCL ass	C	C									C		
CALL:PAGing:IMSI	B,L	B,L	B		B,L								
CALL:PAGing:REPeat[:S TATe]	B,L	B,L	B		B,L								
CALL:SETup:BAND	E									E		E	E
CALL:SETup:CHANnel	E									E		E	E
CALL:STATus:AWGNoise: POWer[:AMPLitude]	E									E		E	E

Table 1. GPiB Commands using Format Mnemonics

Command	[: S E L e c t e d]	: G S M	: T A 1 3 6	: D I G i t a l 1 3 6	: W C D M a	: F D D	: C W	: A M P S	: T A 8 5 6	: D I G i t a l 1 8 5 6	: T A 2 0 0	: D I G i t a l 2 0 0	: D I G i t a l 1 9 5
CALL:STATus:AWGNoise: POWer:STATe	E									E		E	E
CALL:STATus:CELL:PO Wer[:AMPLitude]	E									E		E	E
CALL:STATus:CELL:PO Wer:STATe	E						E	E	E	E	E	E	E
CALL:STATus:TOTal:PO Wer[:AMPLitude]	E									E		E	E
CALL:STATus:TOTal:PO Wer:STATe	E									E		E	E
CALL:TOTal:POWer[:AM PLitude	E						E	E	E	E	E	E	E
CALL:TOTal:POWer:STA Te	E						E	E	E	E	E	E	E
CALL:TRIGger[:OUTPut]: TYPE	E		E								E		
FETCh:DPOWer:ICount?	B	B		B									
FETCh:DPOWer:INTEgrit y[:RANGE1]?	B	B		B									
FETCh:DPOWer:NUMBer [:RANGE1]?	B	B		B									
FETCh:DPOWer:POWer[: RANGE1]?	B	B		B									
FETCh:DPOWer[:ALL][:R ANGE1]?	B	B		B									
FETCh:IQTuning:ICount ?	B	B		B									

GPIB Syntax for Fast Switching

Table 1. GPIB Commands using Format Mnemonics

Command	[: S E L e c t e d]	: G S M	: T A 1 3 6	: D I G i t a l 1 1 3 6	: W C D M a	: F D D	: C W	: A M P S	: T A 8 5 6	: D I G i t a l 1 8 5 6	: T A 2 0 0 0	: D I G i t a l 2 0 0 0	: D I G i t a l 9 5
FETCh:IQTuning:INTEgri ty?	B	B		B									
FETCh:IQTuning:POWer[:ALL]?	B	B		B									
FETCh:IQTuning:REFere nce:FREQuency?													
FETCh:IQTuning:SPUR:POWer?	B	B		B									
FETCh:IQTuning[:ALL]?	B	B		B									
INITiate:DONE:FLAG:DP OWer	B	B		B									
INITiate:DONE:FLAG:IQ Tuning	B	B		B									
INITiate:DPOWER:OFF	B	B		B									
INITiate:DPOWER[:ON]	B	B		B									
INITiate:IQTuning:OFF	B	B		B									
INITiate:IQTuning[:ON]	B	B		B									
READ:DPOWER[:ALL]	B	B		B									
READ:IQTuning[:ALL]	B	B		B									
RFANalyzer:AUTO:POWe r	E									E		E	E
RFANalyzer:MANual:PO Wer	B,C, E,L					B,L				E		E,C	E,C
SETup:DPOWER:CONTInu ous	B	B		B									
SETup:DPOWER:COUNT: NUMBer	B	B		B									

Table 1. GPiB Commands using Format Mnemonics

Command	[: S E L e c t e d]	: G S M	: T A 1 3 6	: D I G i t a l 1 3 6	: W C D M a	: F D D	: C W	: A M P S	: T A 8 5 6	: D I G i t a l 1 8 5 6	: T A 2 0 0	: D I G i t a l 2 0 0	: D I G i t a l 1 9 5
SETup:DPOWer:EMDiffer ence	B	B		B									
SETup:DPOWer:TIMEout[:STIME]	B	B		B									
SETup:DPOWer:TIMEout: STATe	B	B		B									
SETup:DPOWer:TIMEout: TIME	B	B		B									
SETup:IQTuning:CONTin uous	B	B		B									
SETup:IQTuning:COUNT[:SNUMber]	B	B		B									
SETup:IQTuning:COUNT: NUMBer	B	B		B									
SETup:IQTuning:COUNT: STATe	B	B		B									
SETup:IQTuning:OFFSet: FREQuency	B			B									
SETup:IQTuning:OFFSet: POINts	B			B									
SETup:IQTuning:REFere nce[:MANual][:FREQuenc y]	B	B		B									
SETup:IQTuning:SPUR[:S FREQuency]	B	B		B									
SETup:IQTuning:SPUR:F REQuency	B	B		B									
SETup:IQTuning:SPUR:S TATe	B	B		B									

GPIB Syntax for Fast Switching

Table 1. GPIB Commands using Format Mnemonics

Command	[: S E L e c t e d]	: G S M	: T A 1 3 6	: D I G i t a l 1 3 6	: W C D M a	: F D D	: C W	: A M P S	: T A 8 5 6	: D I G i t a l 8 5 6	: T A 2 0 0 0	: D I G i t a l 2 0 0 0	: D I G i t a l 9 5
SETup:IQTuning:TIMEout [:STime]	B	B		B									
SETup:IQTuning:TIMEout :STATe	B	B		B									
SETup:IQTuning:TIMEout :TIME	B	B		B									
SETup:IQTuning:TRIGger :DELay	B	B		B									
SETup:IQTuning:TRIGger :SOURce	B	B		B									
SYSTem:FTRigger:STATe	B	B		B									
SYSTem:FTRigger:TSLot	B	B		B									

NOTE If you use the [:SElected] node in a format that does not support that particular command then you will receive an undefined header message.

GPIB Syntax for Fast Switching