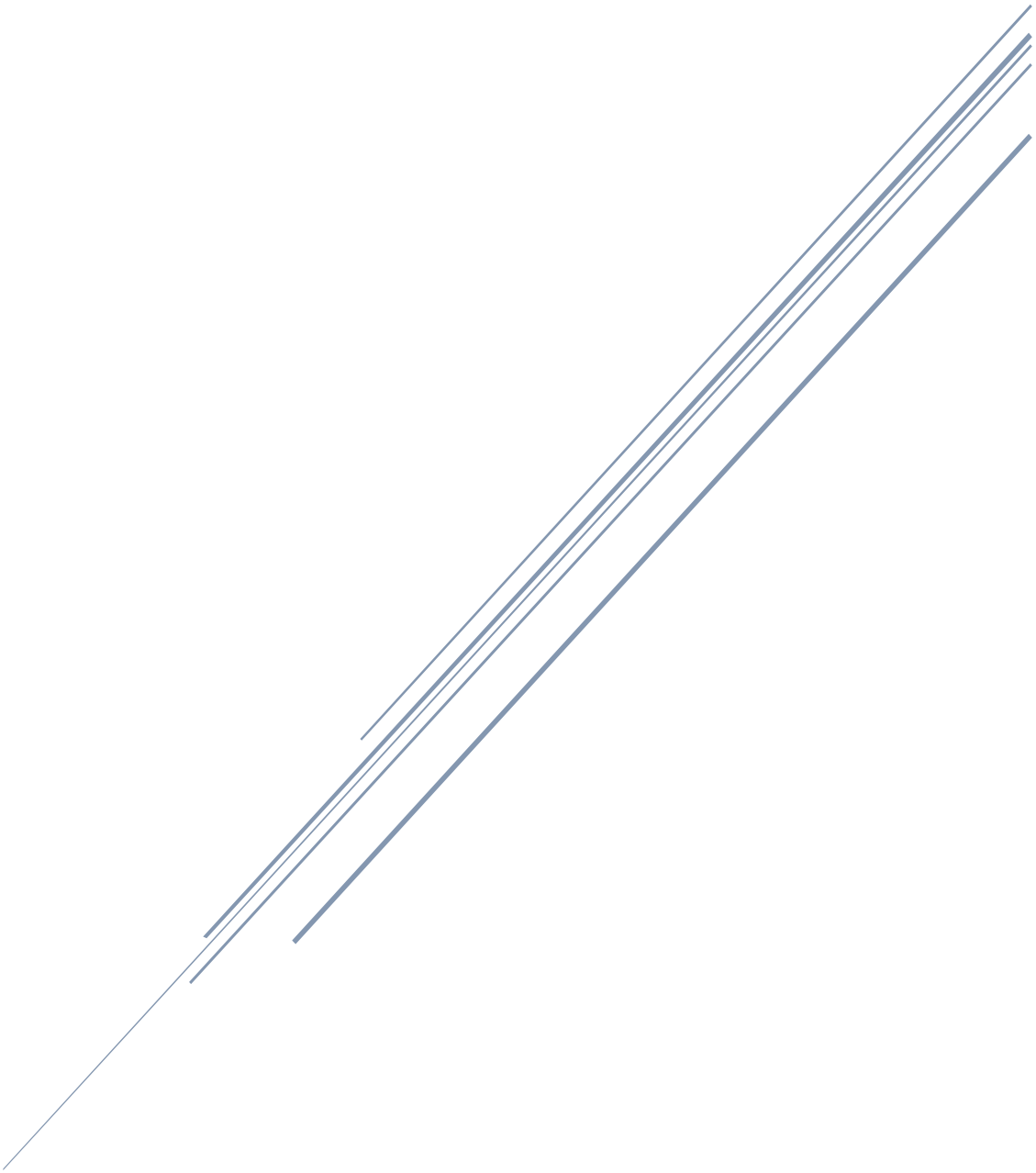
UTG1000L&UTG9000C-II Series Signal Source

Programming Manual



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Version

Version	Modified Item
V1.0	Official version

Introduction

This document is the command description of signal source, interface refer to 《UCI Help Document》.
If the command cannot work properly, please contact with technical support.

Reference File：

1、UTG4162.h ：
The basic definition of signal source
2、UCI file：
See 《UCI Help Document》

The basic format of command string：

Command is communicated with device through character string, the basic format of command string：
{Filed name：command file value...；}
including：
‘:’ character string before colon mark presents command name；
‘:’ character string after colon mark presents filed value；
‘;’ presents the end of a command
The detailed format see《UCI Help Document》

Term： SG - short name of signal source

Common Command

IDN?

Acquire the device name

Data Format ： displayed name % internal information #SN serial number

Data size is 54 bytes.

For example：

UTG9005C-II%**#SN005

Keypad：

Command Name	Command Parameter	Command Parameter Type
KEY	Key value	See the following key code table

KEY	Character Encoding	KEY	Character Encoding	KEY	Character Encoding
System	sys	Noise	wns	7	7
Freq	freq	Ramp	wrp	8	8
Ampl	amp	DC/Ext	wdc	9	9
Offset	offset	Vpp/MHz	vppm	.	.
Phase	phase	Vrms/mHz	vrmsm	+/-	SIGN
Duty	duty	mVpp/KHz	vppk	Count	cnt
STD/MOD	sm	mVrms/s	vrmss	Mode	mod
↑	FKNL	dbm/Hz	dBmHz	Sync	SYNC
↓	FKNR	° %/ms	ohms	OutPut	Output
←	L	0	0	Long push System key	sysLongpress
→	R	1	1	Long push OK key	FKNLongpress
OK	FKN	2	2	Long push OutPut key	OutputLongpress
Backspace	BK	3	3		
Sine	wsn	4	4		
Arb	warb	5	5		
Pulse	wps	6	6		

Notes：Long push System key to view system information; long push OK key to reset system; long push OutPut key to switch the front/back terminal output.

Attribute Name	Meaning	IO	Data
Lock	Lock key	W	NoneData
Unlock	Unlock key	W	NoneData
Lock?	Query key lock status	R	Integer<4Bytes>: 0 – unlock; 1 –locked
Led?	Query LED staus	R	Integer<4Bytes>: 0 – off light; 1 – on light（green）;

For example:

"KEY:c1;" -- CH1
"KEY:c2;" -- CH2
"KEY:c2@lock;" -- CH2 key lock
"KEY:c2@unlock;" -- CH2 unlock key
"KEY:c2@lock?;" -- query whether key is locked
"KEY:c2@led?;" -- query LED status, same as command "LED;"

Notes:

Refer to the description of uci_FormatWrite in 《UCI Help Document》.
Command with question mark need use interface uci_Read to read. It can get it through buffer area or return value by interface.

In addition:

The command for query key lock status:

Command Name	Command Parameter	Data Format
lock?	None	64 bit integer, 0x086FFF FFFFFFFF presents locked full qwerty

Use interface uci_Read get data, call interface IsKeyLocked（see UTG4162.h）to acquire single key status.

Switch Local/Remote Status:

Command Name	Command Parameter	Command Parameter Type
local	Status encoding	Enum(Integer<4Bytes>):0/1{remote status/local status}
Local?	None	Enum(Integer<4Bytes>):0/1{remote status/local status}

For example:

"local:0;" -- remote status, lock full qwerty
"local:1;" -- local status, unlock full qwerty

"local?;" -- query status

Notes:

Refer to the description of uci_FormatWrite in 《UCI Help Document》.

Command with question mark need use interface uci_Read to read. It can get it through buffer area or return value by interface.

Read and Write Configuration File

Command Name	Command Parameter	Command Parameter Type
dconfig	None	None

For example:

"dconfig;"

Notes:

Use interface uci_ReadToFile to read configuration file, Use interface uci_WriteFromFile to write configuration file, the file suffix is ".set", please make sure the suffix is always ".set" when reading and saved file.

Version:

Command Name	Command Parameter	Command Parameter Type
Ver?;	None	None

For example:

"Ver?;"

Interface:

Use interface uci_Read to read data.

Data size is 54 bytes.

Communication Protocol Version:

Query version number of system information, to check protocol interface whether support

Command Name	Command Parameter	Command Parameter Type
CVer?;	None	None

For example:

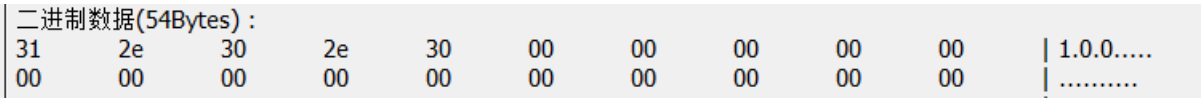
"CVer?;"

Interface:

Use interface uci_Read to read data.

Data size is 54 bytes.

Data:



Read Parameter:

Command Name	Command Parameter	Command Parameter Type
rp	None	None

Attribute Name	Meaning	IO	Data
CH	Channel number	W	Enum(Integer) : 0/1{ CH1/ CH2 }
addr	Parameter address	W	Enum(ERemoteMessage): see the definition in Parameter address

For example:

“rp@CH:0@addr:0x8009;” - read frequency of CH1;

Notes:

UCIInterface 对应： uci_Read， the corresponding data size is 8 bytes, double type!

Interface:

Read parameter interface use uci_Read or uci_ReadX;

Write Parameter:

Command Name	Command Parameter	Command Parameter Type
wp	None	None

Attribute Name	Meaning	IO	Data
CH	Channel number	W	Enum(Integer) : 0/1{ CH1/ CH2 }
addr	Parameter address	W	Enum(ERemoteMessage): see the definition in Parameter address
v	Parameter 值	W	Physical unit please refer to parameter definition

For example:

"wp@CH:0@addr:0x8009@v:2000;" - set CH1 frequency as 2kHz;

Notes:

UCI interface corresponding to: uci_Write , data type is double type, 8 bytes.

Interface:

Read parameter use interface uci_Write , uci_WriteX or uci_FormatWrite ;

Appendix：

Definition of Parameter Address

Functional Name	Parameter Address Number	Parameter Value
Operating mode	0x8000	NORMAL = 0 （fundamental mode） MODULATE = 1 （modulating mode） SCAN = 2 (sweep mode)
Channel switch	0x8001	0：off 1：（front panel channel on, rear panel channel off） 2：（rear panel channel on，front panel channel off） -----if there is power output module
Sync switch	0x8002	0：off 1：on
Channel load impedance	0x8004	Impedance range 50 or 1000000
Fundamental mode	0x8008	SINE = 0 （sine wave） RAMP = 1 （ramp wave） PULSE = 2 （pulse wave） ARB = 3 （arbitrary wave） NOISE = 4 （nosie） DC = 5 （DC）
Fundamental frequency	0x8009	unit Hz
Fundamental phase	0x800A	unit °，range[-360,360]
Fundamental amplitude-peak-to-peak value	0x800B	unit Vpp，range[1mV, 11.5V]
Fundamental amplitude - effective value	0x800C	unitVrms
Fundamental amplitude - power value	0x800D	unitdBm
Fundamental offset	0x800E	unit V，range[-10V,10V]
Fundamental duty ratio	0x8011	range[0,100]
Pulse wave rise time	0x8012	read only，it cannot be set, return double data 8 bytes in s unit
Pulse wave fall time	0x8013	read only，it cannot be set, return double data 8 bytes

		in s unit
Modulating Mode	0x8100	AM：0（modulating amplitude） PM：1（modulating frequency） FM：2（modulating phase） FSK：3（phase shift keying）
Modulating waveform	0x8101	SINE = 0 （sine wave） PULSE= 1 （pulse wave） ARB= 2 （arbitrary wave） NOISE= 3 （noise）
Modulating waveform frequency	0x8102	unit Hz
Modulating depth	0x8104	unit%
Modulating source	0x8105	0：internal 1：external
FM frequency difference	0x8106	unit Hz
PM phase difference	0x8107	unit °
FSK frequency hopping	0x8108	unit Hz
Sweep frequency mode	0x8200	0：logarithm 1：linear
Sweep frequency trigger source	0x8201	0：internal 1：external
Sweep frequency time	0x8202	units
Sweep frequency initial frequency	0x8203	unit Hz
Sweep frequency stop frequency	0x8204	unit Hz
Sync output trigger frequency	0x8205	unit Hz