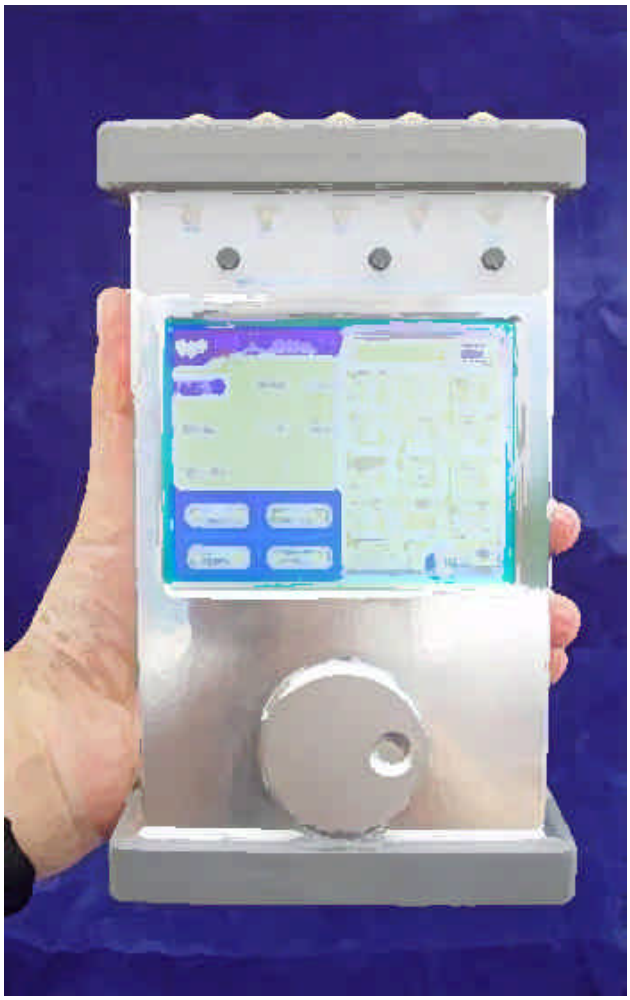
Simptronik

Control Command Set and Programmer's Guide



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Introduction

Thank you for choosing Simptronik Technologies' SK series pulse/pattern generator.

This document explains the remote command set which can be used to control the instrument with a PC through a RS232 connection.

Control Commands

Change Frequency

"FREQxxxxx\10"

To change system frequency, use the above command. "xxxxx" represents the new frequency setting. It can be a real number. For example, "FREQ10.5\10" set the frequency to 10.5MHz. To change frequency to 200MHz, simply send "FREQ200\10'. '\10' is ascii 10, which is a line feed character. This character is absolutely needed to end every command. The system won't respond to any command that is not properly terminated with this character.

This command is specific to Internal PLL mode. If the system is in External Reference Mode, there is no need to set frequency.

Change Delay

"DELYxx\10"

To change delay between channel 1 and channel 2, use command "DELY" with any integer number. For example, to change the delay to 7.5ns, simply send "DELY7.5\10". The value is in the unit of ns (nano second). The resolution, change step, is 50ps. Maximum value is 16ns.

Change Amplitude

"AMP1xxxx\10"
"AMP2xxxx\10"

To change amplitude of channel 1 (Clock channel), please use "AMP1". Use "AMP2" to change amplitude of channel 2 (Data channel). To set channel 1 amplitude to 2500mV, simply send "AMP12500\10". Please always send amplitude in terms of mV. The resolution step is 10mV. Only numeric numbers are allowed to follow AMP1 and AMP2.

Change Offset

"VOF1xxxx\10"
"VOF2xxxx\10:

To change offset of channel 1 (Clock channel), use "VOF1"; use "VOF2" for channel 2 (Data channel), offset change. To set offset of channel 1 to 1.25V, simply send "VOF11250\10". Always send offset in terms of mV. The resolution step is 10mV. Only numeric numbers are allowed to follow VOF1 and VOF2.

Change Channel 2 (Data channel) Data Pattern Selection

"DATAx\10"

x is an integer from 0 to 7.
To change the data pattern to PRBS7 on channel 2, simply send "DATA3\10". Please refer to the following table for the integer and the pattern it represents.

DATA0	Built-in Clock Pattern (NRZ)
DATA1	32-bit User Defined Data Pattern
DATA2	PRBS7
DATA3	PRBS10
DATA4	PRBS15
DATA5	PRBS23
DATA6	PRBS31
DATA7	4096-bit User Defined Data Pattern (Download thru UART)

Update 32-bit User Defined Data

"LCDDxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx\10"

Use this command to update the 32-bit user defined data pattern. "xxxxx…xxx" are 32 bits (or less) in binary format, in other word, only 0 and 1 will be recognized as valid parameter. If the system encounters invalid character, it will exit the command without touching current settings.

Turn On/Off Channels

"C1ON\10"
"C2ON\10"
"C1OF\10"
"C2OF\10"

To turn channel 1 on, please send “C1ON\10”; to turn channel 1 off, send “C1OF\10”.
To turn channel 2 on, please send “C2ON\10”; to turn channel 2 off, send “C2OF\10”.

Switch to External Reference Mode

“EXTM\10”

This command is specific to Internal PLL mode. If the system is in Internal PLL mode, and user wants to switch to external reference mode, simply send “EXTM\10”. This is will set the system to external reference mode where user has to provide a reference clock signal to the SK pulse generator, and the generator tracks this clock. All the other settings, such as amplitude, offset and delay will be carried over to the external reference mode.

Switch to Internal PLL Mode

“INTM\10”

This command is specific to External Reference Mode. If the system is in external reference mode, and user wants to switch to internal PLL mode, simply send “INTM\10”. This is will set the system to internal pll mode where the system generates its own clock. All the other settings, such as amplitude, offset and delay will be carried over to the external reference mode.