

RC-USB6B Manual

Remote Control

RC-USB6B can be remote controlled via its USB interface. To the host it presents itself as a composite device with a USBTMC and a CDC (serial) interface.

CDC (serial) communication

These are the steps to get started with serial communication:

- Find the serial port of the device. On Windows you can open Device Manager, observe the list of serial devices and see which one pops up when you plug in the device to the USB port.
- Open your favourite terminal program (e.g. Tera Term or Hercules) and open a session to this port (parameters no not care).
- Type in `*IDN?` and press Return
- You should now see a reply like `"RC-USB6B-895909,1.3.1"` with the device's serial number and the firmware version

USBTMC communication

- To communicate via USBTMC you need a Visa library. Install a Visa library from one of the manufacturers e.g. from [Rohde&Schwarz](#) or [NI](#) .
- If you have the R&S Visa: Open RsVisaTester (Tester64) and enter the device's Visa resource string into the Resource field. (You can find the resource string on the device's USB screen.) Alternatively use the Find Resource function on RsVisaTester to get its resource string.
- Click Connect, enter `*IDN?` into the command field and click Query.
- You should now see a reply like `"RC-USB6B-240565,1.4.1"` with the device's serial number and the firmware version
- If you are using the NI Visa: NI-MAX has functions similar to the ones described here.

Registration

The RC-USB6B firmware has a time limitation. After 30 minutes hardware settings are no longer possible and you have to restart the firmware to continue. This limitation can be removed by entering a registration key. To enter the key use either command *SYSTem:REGistration:KEY* or enter it manually on the Registration screen. The key can be obtained by sending the device type (RC-USB6B) and its serial number to info@mcu-projects.de. See the About screen for these informations.

SCPI Command Set

*CLS

*ESE?

*ESR?

*IDN?

*OPC?

*SAV

*STB?

*SRE?

*RCL

*RST

FORMat:BORDer?

FORMat:DATA?

NPORTs?

PORT<idx>:NAME?

PORT<idx>[:STATe]?

PORT<idx>[:STATe]:TOGGle

PORT<idx>:DATA[:STATe]?

PORT<idx>:OCURrent[:STATE]?

PORT<idx>:OCURrent:CLR

PPATtern?

SOURce:RESistance:STAGe

STATus:PRESet

STATus:DEVice:CONDition?

STATus:OPERation:CONDition?

STATus:DEVice:EVENT?

STATus:OPERation:EVENT?

STATus:DEVice:ENAB?

STATus:OPERation:ENAB?

STATus:DEVice:NTRansition?

STATus:OPERation:NTRansition?

STATus:DEVice:PTRansition?

STATus:OPERation:PTRansition?

SYSTem:BOOTloader

SYSTem:ERRor:COUNT?

SYSTem:ERRor:ALL?

SYSTem:ERRor[:NEXT]?

SYSTem:FPReset

SYSTem:HELP:HEADers?

SYSTem:REGistration:KEY

SYSTem:REStart

SWITching:BEHavior?

SWITching:CONTroller?

SWITching:EXTernal:ACTion?

SWITching:EXTernal:LOGic?

USB:HOST:CONNector?

Details

Command	*CLS
Type	-
Default	-

Range	-
R/W	W
Persistent	N
Resettable	N
Description	Clear status byte

Command	*ESE?
Type	-
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Return the value of the Standard Event Status Enable Register.

Command	*ESR?
Type	-
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Return the value of the Standard Event Status Register.

Command	*IDN?
Type	string
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Output an identifying string,

Command	*OPC?
Type	string
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Returns the ASCII character 1 when all pending operations have finished

Command	*SAV
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Save device state.

Command	*STB?
Type	numeric
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Read the Status Byte.

Command	*SRE?
Type	numeric
Default	0

Range	0-255
R/W	RW
Persistent	N
Resettable	N
Description	Value of the Service Request Enable Register.

Command	*RCL
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Recall device state.

Command	*RST
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Put device in its default state.

Command	FORMat:BORDER?
Type	mnemonic
Default	NORMal
Range	NORMal SWAPped
R/W	RW
Persistent	N
Resettable	N
Description	Set/get byte order of numeric data.

Command	FORMat:DATA?
Type	mnemonic
Default	ASCii
Range	ASCii PACKed
R/W	RW
Persistent	N
Resettable	N
Description	Set/get format of numeric data

Command	NPORts?
Type	numeric
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Returns the number of ports (6)

Command	PORT<idx>:NAME?
Type	string
Default	-
Range	-
R/W	RW
Persistent	Y
Resettable	N
Description	Set/get the port's name

Command	PORT<idx>[:STATe]?
Type	mnemonic

Default	0
Range	OFF 0 ON 1
R/W	R
Persistent	N
Resettable	N
Description	Set/get a port's state

Command	PORT<idx>[:STATe]:TOGGle
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Toogle a port's state between ON and OFF

Command	PORT<idx>:DATA[:STATe]?
Type	mnemonic
Default	0
Range	0 1 ON OFF
R/W	RW
Persistent	Y
Resettable	Y
Description	Set/get state of a port's data lines

Command	PORT<idx>:OCURrent[:STATE]?
Type	mnemonic
Default	0
Range	0 1 ON OFF
R/W	R
Persistent	N
Resettable	N

Description	Get a port's overcurrent state
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Command	PORT<idx>:OCURrent:CLR
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Clear a port's overcurrent state

Command	PPATtern?
Type	List of mnemonics
Default	-
Range	0 1 ON OFF T ,X (T = toggle, X = unchanged)
R/W	R
Persistent	Y
Resettable	Y
Description	Set port states together: e.g. PPATT 0,1,X,T turns off port1, turns on port2, leaves port3 unchanged, toggles port4

Command	SWITching:BEHavior?
Type	mnemonic
Default	ARBitrary
Range	ARBitrary EXCLusive
R/W	RW
Persistent	Y
Resettable	Y
Description	Set/get switching behavior. ARBitrary: All ports can be set independently EXCLusive: Setting one port switches all others off

Command	SWITching:CONTRoller?
Type	mnemonic
Default	EXTernal
Range	CMD EXTernal
R/W	RW
Persistent	Y
Resettable	Y
Description	Set/get enable external switching control. EXTernal: enabled. Control by remote commands or external pins CMD: disabled. Control only by remote commands

Command	SWITching:EXTernal:LOGic?
Type	mnemonic
Default	LOW
Range	LOW HIGH
R/W	RW
Persistent	Y
Resettable	Y
Description	Set/get switching logic. High/low active

Command	SWITching:EXTernal:ACTion?
Type	mnemonic
Default	TOGGle
Range	SET TOGGle
R/W	RW
Persistent	Y
Resettable	Y
Description	Set/get action when external pin is asserted

Command	USB:HOST:CONNector?
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Type	mnemonic
Default	HST1
Range	HST1 HST2
R/W	RW
Persistent	Y
Resettable	Y
Description	Set/get selected host

Command	SYSTem:BOOTloader
Type	
Default	
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Puts device into Bootloader mode. Use this command to initiate a firmware update. The USB connection must be via connector Ctrl.

Command	SYSTem:ERRor:COUNT?
Type	numeric
Default	0
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Return number of entries in the error queue

Command	SYSTem:ERRor:ALL?
Type	string
Default	-

Range	-
R/W	R
Persistent	N
Resettable	N
Description	Return all error messages from the error queue.

Command	SYSTem:ERRor[:NEXT]?
Type	string
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Return next error message from the error queue.

Command	SYSTem:HELP:HEADers?
Type	binary block with ASCII data
Default	-
Range	-
R/W	R
Persistent	N
Resettable	N
Description	Return list of commands.

Command	SYSTem:REStart
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Restart device

Command	SYSTem:FPRreset
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Restore device to factory state.

Command	SYSTem:REGistration:KEY
Type	numeric
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Enter registration key to remove FW time limitation.

Command	STATus:PRESet
Type	-
Default	-
Range	-
R/W	W
Persistent	N
Resettable	N
Description	Reset status registers.

Commands	STATus:DEVice:CONDition? STATus:OPERation:CONDition?
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Type	numeric
Default	-
Range	0-65535
R/W	R
Persistent	N
Resettable	N
Description	Return condition part of the Device/Operation status register

Commands	STATus:DEVIce:EVEnt? STATus:OPERation:EVEnt?
Type	numeric
Default	-
Range	0-65535
R/W	R
Persistent	N
Resettable	N
Description	Return event part of the Device/Operation status register

Commands	STATus:DEVIce:ENAB? STATus:OPERation:ENAB?
Type	numeric
Default	-
Range	0-65535
R/W	RW
Persistent	N
Resettable	N
Description	Set/get enable part of the Device/Operation status register

Commands	STATus:DEVIce:NTRansition? STATus:OPERation:NTRansition?
Type	numeric
Default	-

Range	0-65535
R/W	R
Persistent	N
Resettable	N
Description	Set/get ntransition part of the Device/Operation status register

Commands	STATus:DEVice:PTRansition? STATus:OPERation:PTRansition?
Type	numeric
Default	-
Range	0-65535
R/W	R
Persistent	N
Resettable	N
Description	Set/get ptransition part of the Device/Operation status register

Command	SOURce:RESistance:STAGe
Type	numeric
Default	0
Range	0-999999999
R/W	W
Persistent	N
Resettable	N
Description	

Document Revision:

Revision	Date	FW	Remark
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1	5.5.2026	1.4.1	