

SATHUNTER

REMOTE CONTROL COMMANDS

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REMOTE CONTROL COMMANDS

SATHUNTER

1 COMMUNICATIONS PROTOCOL

Communication parameters are 115200 dB, 8 bits, no parity and 1 bit STOP. The communication is done via the USB port.

The communication protocol is:

1. **SATHUNTER** periodically sends the code XON (11H) to indicate that it is ready to receive a new command.
2. At this moment, it can be sent a stream. Each stream consists of:
 - a. Stream beginning: '*' (2AH).
 - b. If the command is interrogative: '?' (3FH).
 - c. Character set forming the remote command.
 - d. CARRIAGE RETURN indicating the end of the message: (0DH).
3. Once the stream has been sent, it is received an XOFF (13H) indicating to stop the transmission.
4. Once completed the command, it is sent an ACKNOWLEDGE (06H) code in the case that the command had been interpreted correctly or a NOT ACKNOWLEDGE (15H) otherwise.
5. If the sent message requires response, that one is sent after the ACKNOWLEDGE. The answer should be finish by a CARRIAGE RETURN (0DH)
6. After this command, the **SATHUNTER** will send a XON (11H) meaning that is ready to receive another command.
7. It turns to step 2.



Example:

	COMPUTER		SATHUNTER
1)		<-----	XON
2)	*?NAM<CR>	----->	
3)		<-----	XOFF
4)		<-----	ACK
5)		<-----	*NAMSATHUNTER<CR>
6)	WAIT...		
7)		<-----	XON

(all characters are transmitted in ASCII code).

Next are described the set of commands that SATHUNTER accepts. All commands are transmitted in ASCII code.



1.1 Remote commands index

Remote Command	Brief Description
NAM	Provides the name of the equipment.
VER	Provides the firmware version of the FPGA and the equipment.
IPN	Provides the internal product number.
USR	Provides / configures the name of the equipment user.
CMP	Provides / configures the name of the company.
OFF	Turns off the equipment.
KEY	Simulates the equipment's keys.
MPO	Reads / configures the auto power off.
LNB	Reads / configures the LNB status (voltage plus 22 kHz).
RST	Reboots the equipment.
PWR	Reads the power rate and the maximum power rate.
POW	Provides the current test point power.
MER	Provides the current test point MER.
CBR	Provides the current test point CBER.
VBR	Provides the current test point VBER / LBER.
TMP	Provides the internal temperature of the demodulator.
FRS	Provides / configures the tuner frequency of the current test point.
TPO	Provides / changes the current test point.
TPS	Changes the current test point name.
TPN	Provides the number of valid test points.
CRA	Provides / configures the code rate of the current test point.
SRA	Provides / configures the symbol rate of the current test point.
STN	Provides / configures standard communication of the current test point.
CON	Provides / configures the current test point constellation.
LOC	Indicates whether the demodulator has been locked.
SLN	Provides the number of captured services.
SLS	Provides the name of the indicated service.



Remote Command	Brief Description
NET	Provides the network name of the current test point.
SOP	Provides the orbital position of the current test point.
LCD	Adjusts the LCD contrast.
FVE	Provides the firmware version of the FPGA.
NIT	Provides NIT from current test point.
SND	Provides / Configures Mute of the instruments.
IOS	Provides / Configures the spectral inversion of the current test point.



1.2 Remote commands description

*NAM	
Provides the equipment's name.	
COMMAND:	*?NAM<CR>
RESPONSE:	*NAMs...s<CR> where s...s is the name of the equipment.

*VER	
Provides the equipment firmware version.	
COMMAND:	*?VER<CR>
RESPONSE:	*VERx.xx.xxx.yy<CR> where x.xx.xxx is the firmware version of the equipment. where yy is the firmware version of the FPGA.

*IPN	
Provides the internal product number (IPN).	
COMMAND:	*?IPN<CR>
RESPONSE:	*IPNxxxxxxxxx<CR> where xxxxxxxxxx is the IPN.

*USR	
Provides / Configuration the user's name.	
COMMAND:	*?USR<CR> where s...s is the new user's name.
COMMAND:	*?USR<CR>
RESPONSE:	*IPNxxxxxxxxx<CR> where s...s is the user's name.

*CMP	
Provides the company's name.	
COMMAND:	*CMPs...s<CR> where s...s is the new company's name.
COMMAND:	*?CMP<CR>
RESPONSE:	*CMPs...s<CR> where s...s is the company's name.



*OFF	
Switches off the equipment.	
COMMAND:	*?OFF<CR>

*KEY	
Simulates a equipment's key.	
COMMAND:	*KEYx<CR> where x is the value of the key to simulate. 1 -> DETECT 2 -> IDENTIFY 3 -> ADJUST

*MPO	
Provides / configures the auto power off mode.	
COMMAND:	*MPOx<CR> where x is: 0 to enable the auto power off mode. 1 to disable the auto power off mode.
COMMAND:	*?MPO<CR>
RESPONSE:	*MPOx where x is: 0 to enable the the auto power off mode 1 to disable the auto power off mode

*LNB	
Provides / configures the LNB value.	
COMMAND:	*LNBx <CR> where x is: 0 for LNB off 1 for LNB on 2 for LNB 13 V 3 for LNB 13 V + 22 KHz 4 for LNB 18 V 5 for LNB 18 V + 22 KHz
COMMAND:	*?LNB<CR>
RESPONSE:	*LNBx where x is: 0 for LNB off 2 for LNB 13 V 3 for LNB 13 V + 22 KHz 4 for LNB 18 V 5 for LNB 18 V + 22 KHz



*RST	
Reboots the equipment.	
COMMAND:	*RST<CR>

*PWR	
Provides the power rate measurement and the maximum power rate.	
COMMAND:	*?PWR<CR>
RESPONSE:	*PWRxxyy<CR> where xx is the current power rate (in hexadecimal notation) 00 minimum <-> 100 maximum. where yy is the maximum power rate (in hexadecimal notation) 00 minimum <-> 100 maximum.

*POW	
Provides the measurement of the power rate with the measure units selected on the current test point configuration. With the SPC order, conversion of units may be cancelled and the POW order will always return dBµV.	
COMMAND:	*?POW<CR>
RESPONSE:	*POWyxxxx<CR> donde y indica si la medida satura por abajo o por encima del margen permitido. "<" la medida es más pequeña que el mínimo medible. ">" la medida es más grande que el máximo medible. " " la medida está dentro del margen de medida. donde xxxx es la potencia medida en décimas de dBµV.

*MER	
Provides MER measurement of the current test point.	
COMMAND:	*?MER<CR>
RESPONSE:	*MERYxxxx<CR> where y indicates whether the measurement floods above or below the allowed margin. "<" the measurement is smaller than the minimum measurable. ">" the measurement is larger than the maximum measurable. " " the measurement is within the measurement margin. where xxxx is MER measured in tenths of dB.



*CBR	
Provides CBER measurement of the current test point.	
COMMAND:	*?CBR<CR>
RESPONSE:	*CBRyx.xxEyy<CR> where y indicates whether the measurement floods above or below the allowed margin. "<" the measurement is smaller than the minimum measurable. ">" the measurement is larger than the maximum measurable. " " the measurement is within the measurement margin. where x.xx is the mantissa of the measured CBER. where yy is the exponent of the measured CBER.

*VBR	
Provides VBER measurement in DVB-S and LBER measurement in DVB-S2 of the current test point.	
COMMAND:	*?VBR<CR>
RESPONSE:	*VBRyx.xxEyy<CR> where y indicates whether the measurement floods above or below the allowed margin. "<" the measurement is smaller than the minimum measurable. ">" the measurement is larger than the maximum measurable. " " the measurement is within the measurement margin. where x.xx is the mantissa of the measured VBER. where yy is the exponent of the measured VBER.

*TMP	
Provides the internal temperature of the equipment.	
COMMAND:	*?TMP<CR>
RESPONSE:	*TMPxxxx<CR> where xxxx is the internal temperature of the equipment in tenths of Celsius degree.

*FRS	
Provides / configures the frequency of the current test point. The configured value is not stored in the E2P, therefore when the test point changes, the configuration changes.	
COMMAND:	*FRSxxxxxxx <CR> where xxxxxxxx is the new frequency in kHz.
COMMAND:	*?FRS<CR>
RESPONSE:	*FRS xxxxxxxx <CR> where xxxxxxxx is the frequency in kHz of the current test point.



*TPO	
Provides / changes the test point.	
COMMAND:	*TPOxx<CR> where xx is the index of the new test point (in hexadecimal notation).
COMMAND:	*?TPO<CR>
RESPONSE:	*TPOxx<CR> where xx is the index of the current test point (in hexadecimal notation).

*TPS	
Provides the name of the current test point.	
COMMAND:	*?TPS<CR>
RESPONSE:	*TPSs...s<CR> where s...s is the name of the current test point.

*TPN	
Provides the first and last valid test point.	
COMMAND:	*?TPN<CR>
RESPONSE:	*TPNxxyy<CR> where xx is the first valid index in hexadecimal notation. where yy is the last valid index in hexadecimal notation.

*CRA	
Provides / configures the code rate of the current test point. The configured value is not stored in the E2P, therefore when changing the test point, the configuration changes.	
COMMAND:	*CRAxx <CR> where xx is the code of the new code rate: 00 -> 1/2 01 -> 2/3 02 -> 3/4 03 -> 4/5 04 -> 5/6 05 -> 6/7 06 -> 7/8 07 -> 1/4 08 -> 1/3 09 -> 2/5 0A -> 3/5 0B -> 8/9 0C -> 9/10
COMMAND:	*?CRA<CR>
RESPONSE:	*CRAxx<CR> where xx is the code rate indicated before.



*SRA	
Provides / configures the symbol rate of the current test point. The configured value is not stored in the E2P, therefore when changing the test point, configuration changes.	
COMMAND:	*SRAxxxxx <CR> where xx is the code of the new symbol rate (in decimal notation).
COMMAND:	*?SRA<CR>
RESPONSE:	*SRAxxxxx<CR> where xxxxx is the symbol rate of the current test point.

*STN	
Provides / configures the standard of the current test point. The configured value is not stored in the E2P, therefore when changing the test point, the configuration changes.	
COMMAND:	*STNx<CR> where x is the code of the new standard: 0 -> DVB-S 1 -> DVB-S2
COMMAND:	*?STN<CR>
RESPONSE:	*STNx<CR> where x is the standard code of the current test point.

*LOC	
Indicates whether the demodulator is locked.	
COMMAND:	*?LOC<CR>
RESPONSE:	*LOCx<CR> where x is: F -> NO LOCKED 0 -> DVB-S 1 -> DVB-S2



*CON	
Provides / configures the constellation of the current test point. The configured value is not stored in the E2P, therefore when changing, the configuration changes.	
COMMAND:	*CONx<CR> where x is the code of the new constellation: 0 -> QPSK 1 -> 8PSK
COMMAND:	*?CON<CR>
RESPONSE:	*CONx<CR> where x is the code of the current test point.

*SLN	
Provides the number of services captured at the current test point.	
COMMAND:	*?SLN<CR>
RESPONSE:	*SLNxx<CR> Provides the number of services captured at the current test point.

*SLS	
Provides the service's name of the provided index (the first service is 00, and the last one is the number indicated by *SLN less 1).	
COMMAND:	*?SLSxx<CR> where xx is the number of the service that you are asking for its name.
RESPONSE:	*SLSs...s<CR> where s...s is the name of the service with the indicated index.

*NET	
Provides the network name of the current test point.	
COMMAND:	*?NET<CR>
RESPONSE:	*NETs...s<CR> where s...s is the network's name of the current test point.



*SOP	
Provides the orbital position of the current test point.	
COMMAND:	*?SOP<CR>
RESPONSE:	*SOPs...s<CR> where s...s is the orbital position of the current test point.

*LCD	
Provides / adjusts the LCD contrast.	
COMMAND:	*LCDx<CR> where x is: 0 starts the LCD (it does an internal reboot of the LCD). 1 <—> F adjust value.
COMMAND:	*?LCD<CR>
RESPONSE:	*LCDx<CR> where x is the contrast value between 1 and F.

*FVE	
Provides the firmware version of the FPGA.	
COMMAND:	*?FVE<CR>
RESPONSE:	*FVExx<CR> where xx is the firmware version of the FPGA.

*NIT	
Provides NIT from current test point.	
COMMAND:	*?NIT<CR>
RESPONSE:	*NITxxxx<CR> where xxxx is the ID network in hexadecimal notation.

*SND	
Provides / Configures MUTE of the instruments.	
COMMAND:	*SNDx<CR> where x is: 0 -> Sound OFF. 1 -> Sound ON.
COMMAND:	*?SND<CR>
RESPONSE:	*?SNDx<CR> where x is: 0 -> Sound OFF. 1 -> Sound ON.



*IQS	
Provides / configures the spectral inversion of the current test point. The new value is not saved so when test point changes, settings also change.	
COMMAND:	*IQSx<CR> where "x" is: 0 -> spectral inversion OFF. 1 -> spectral inversion ON.
COMMAND:	*?IQS<CR>
RESPONSE:	*IQSx<CR> where "x" is: 0 -> spectral inversion OFF. 1 -> spectral inversion ON.



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