Pro
Series

raditeq
Product Manual

Raditeq

Programming manual

Raditeq products

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Raditeq Programming Manual

This product manual pertains to the following Raditeq product series.

RadiSense® Series | E-Field Probes
RadiPower® Series | RF Power Meters
RadiCentre® Series | Modular Test Systems
RadiLink® Series | RF Optical Links
RadiField® Series | E-Field Generator
RadiGen® Series | Signal Generator
RadiSwitch® Series | Coaxial Switch cards
RadiAmp® Series | Amplifier

This manual is created to help engineers program and command the Raditeq product range. Please keep this manual close at hand when you operate your new Raditeq product(s).

Note that all specifications are noted in the respective data sheet of the product. All product data sheets can be found on https://www.raditeq.com/downloads/

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Command prefix for plug-in cards

All commands intended for plug-in cards, must be preceded by the slot number of the card. If a card has multiple ports, such as the USB1004A card for RadiPower®, the port number must also be included in the predecessor of the command.

Example 1 - In order to request the identifier of the RadiSwitch® card in slot 3, the following command must be used:

3*IDN?

Example 2 - To get an E-field reading from the RadiSense® card in slot 1, the following command must be used:

1D2

Example 3 - To get a power value from the RadiPower® connected to port B of the card in slot 2, the following command must be used:

2BPOWER?

Please note that every command has to be terminated with a carriage return (CR).

The following table shows the general commands for the Raditeq products. Please refer to the chapters of the plug-in cards for device specific commands.

Command	Reply	Description
'*IDN?'	<value> for example: 'Raditeq, RadiCentre CTR1009B, version 4.1.0'	Get the identification of the RadiCentre®
'STATUS?'	'OK' or <error>	Get the status of the RadiCentre® Reply is device specific
'LOCAL'	'OK' or <error>	Returns the instrument to local mode. This enables manual control of the device using the RadiCentre® touchscreen
'REBOOT SYSTEM'	No reply	Reboots the system

Hardware failure replies

When a device returns a reply which indicates hardware failure, the equipment needs to be repaired under return material authorisation (RMA). This can be done through the (local) reseller, or the Raditeq website. Contact the reseller to initiate the RMA Procedure. For more information on the RMA process go to:

https://www.raditeq.com/return-material-authorization-rma/

Generic commands

The commands described in this chapter are the generic commands, which are applicable for all instruments. Next to these generic commands, there is a set of instrument specific commands. The normal operation reply is specified in the 'Reply' column of the table. If case of an <error> situation, the reply will give an <error>.

REMARK: All commands are not case sensitive

Command	Reply	Description
*IDN?	Raditeq, <product name>, <product code>, <embedded software version>. For example: Raditeq, RadiPower RPR2006P, 2.1.8	Returns the identifier string (ID) of the plug-in card or device
ID_NUMBER?	<value> For example: 1.58.95.146.21.0.0.124	Returns the unique identifier number
LOCAL	'OK' or <error>	Returns the instrument to local mode This enables manual control of the device using the RadiCentre® touch-screen
RESET	'OK' or <error>	Resets the device and clears all <error>s
CLEAR	'OK' or <error>	Clears any internal <error>
VERSION_HW?	<value> For example: 2	Returns the hardware version of the plug-in card or device
BUSADDRESS?	<value> For example: 2	Returns the slot number of the CTR1004S, CTR1009S or CTR2008A in which the plug-in card is placed.

RadiSense® 2000 series | (RSS20xxx) commands

The following table shows the general commands for the RadiSense® E-field sensors, 2000 series. Beside these commands, the generic commands are also applicable.

Command	Reply	Description
D3	<value> For example: ':D10.04;10.15;10.03_V_'	Get (single) field measurement from the RadiSense®. The reply format is: ':Dxx.xx;yy.yy;zz.zz_V_' Where xx.xx, yy.yy and zz.zz are 4 digit floating point values of the electrical field measured by that axis.

RadiSense® 2000 series | (RSS20xxx) commands Continued (2)

Command	Reply	Description
D5	<value> For example: ':D10.04;10.15;10.03;10.07 V'	Get (single) field (long notation) measurement from the RadiSense®. The reply format is: ':Dxx.xx;yy.yy;zz.zz;cc.cc_V_' Same as D3 where cc.cc is the 4 digit floating point value of the isotropic field.
D6	<value> or <error> For example: '23.85'	Get (single) isotropic value
J3[space]<freq in kHz>	<value> or <error> For example: ':J2.764;7453.;623.5_V_'	Set the frequency in kHz and when set read the Probe data. The reply format is: :Jx.xxx;yy.yy;zzz.z_V_ xxxx, yyyy, zzzz = 4-digit axis values with floating decimal point.
J5[space]<freq in kHz>	<value> or <error> For example: :J2.764;7453.;623.5;9234._V_'	Set the frequency in kHz and when set read the Probe data. The reply format is: ':Jx.xxx;yy.yy;zzz.z;cccc._V_' Same as J3 where cc.cc is the 4 digit floating point value of the isotropic field.
J6[space]<freq in kHz>	<value> or <error> For example: '23.85'	Set the frequency in kHz and when set get the isotropic value
BURST[space]<n>	Returns n number of field measurements in D6 format, separated by ';'. For example: '23.85;23.56;23.45;23.65;23.75' (burst of 5 measurements)	Get multiple readings from the RadiSense® Where n is the number of field measurements. Minimum 1 and maximum 60.000
MEASMODE[space] <mode>	'OK' or <error>	Set the measurement mode of the RadiSense® Where mode is: 0 for buffered measurements 1 for triggered measurements (Default) **Buffered mode:** a buffered sample is returned. Depending on the filter the sample can be older on by the highest filter. **Triggered mode:** The measurement is started after receiving the command. For field leveling routines, it is better to use triggered mode. Triggered measurements help avoid the risk of using old field data for leveling.

RadiSense® | 2000 series (RSS20xx) commands continued (3)

Command	Reply	Description
MEASMODE?	'0' or '1' or <error>	Requests the measurement mode of the RadiSense®
FILTER[space]<filter>	'OK' or <error>	Sets the filter / averaging factor of the RadiSense® Where <filter> is value for: • DYN = dynamic (Filter 3 - 5 depending on the field strength) • 1 = 4 times average • 2 = 8 times average • 3 = 16 times average • 4 = 32 times average • 5 = 64 times average • 6 = 128 times average In version 2.4.0 the following filters are added: • 7 = 256 times averaging • 8 = 512 times averaging • 9 = 1024 times averaging • 10 = 2048 times averaging • 11 = 4096 times averaging • 12 = 8192 times averaging
FILTER?	<value> For example: '3'	Requests the current filter setting
ZERO	'OK' or <error>	Zeros the RadiSense®
STATUS?	'LASERON' or 'STANDBY' or <error>	Requests the status of the RadiSense®
TC	<value> For example: 'T35.75'	Requests the temperature of the RadiSense® in degrees Celsius
TF	Where nn.nn is the temperature value in degrees Celcius	Requests the temperature of the RadiSense® in degrees Fahrenheit
B	:B<voltage> or <error> the replied value is :B06.23	Gets the sensor supply voltage of the RadiSense® Where nn.nn is a 4 digit number representing the supply voltage in the sensor (typically around 6 Volt)
FREQ[space] <frequency>	'OK' or <error>	Sets probe to requested frequency. Valid frequency range is dependent on model and/or user correction data. Frequency is set in Hz.
FREQ?	<frequency> or (project) <error> For example: '4000000'	Requests the frequency setting of the RadiSense® Returns the frequency in Hz
FREQ?[space]MIN	'OK' or <error>	Returns the minimum frequency of the RadiSense® in Hz
FREQ?[space]MAX	<value> For example: '100000000' for 100 MHz	Returns the maximum frequency of the RadiSense® in Hz
CAL ON	'OK' or <error>	Turns ON the user correction factors inside the RadiSense®
CAL OFF	'OK' or <error>	Turns OFF the user correction factors inside the RadiSense®
CAL?	'ON' is active 'OFF' is not active	Queries the user correction settings of the RadiSense®

RadiSense® 3000 series (RSS30xx) commands

The following table shows the general commands for the RadiSense® E-field sensors, model RSS3018X. Beside these commands, the generic commands are also applicable.

Command	Reply	Description
D3	<value> For example: ':D10.04;10.15;10.03_V_'	Get (single) field measurement from the RadiSense®. The reply format is: ':Dxx.xx;yy.yy;zz.zz_V_' Where xx.xx, yy.yy and zz.zz are 4 digit floating point values of the electrical field measured by that axis.
D5	<value> For example: ':D10.04;10.15;10.03;10.07 V'	Get (single) field (long notation) measurement from the RadiSense®. The reply format is: ':Dxx.xx;yy.yy;zz.zz;cc.cc_V_' Same as D3 where cc.cc is the 4 digit floating point value of the isotropic field.
D6	<value> or <error> For example: '23.85'	Get (single) isotropic value
J3[space]<freq in kHz>	<value> or <error> For example: ':J2.764;7453.;623.5_V_'	Set the frequency in kHz and when set read the Probe data. The reply format is: :Jx.xxx;yy.yy;zzz.z_V_ xxxx, yyyy, zzzz = 4-digit axis values with floating decimal point.
J5[space]<freq in kHz>	<value> or <error> For example: :J2.764;7453.;623.5;9234._V_'	Set the frequency in kHz and when set read the Probe data. The reply format is: ':Jx.xxx;yy.yy;zzz.z;cccc._V_' Same as J3 where cc.cc is the 4 digit floating point value of the isotropic field.
J6[space]<freq in kHz>	<value> or <error> For example: '23.85'	Set the frequency in kHz and when set get the isotropic value
MEASMODE?	1 or <error>	Returns the measure mode. • 1 = Triggered
MEASMODE[space]<mode>	'OK' or <error>	Set the measure mode. <mode> can be: • 0 = Buffered • 1 = Triggered Note: Command is implemented for backwards compatibility. **The measurement mode is always automatically (re)set to triggered mode.**

RadiSense® 3000 series (RSS3018) commands continued

Command	Reply	Description
FILTER[space]<filter>	'OK' or <error>	<filter> can be: • DYN = depending on the range of the axis with the highest field: Range 200-1500 V/m: filter 3 Range 10 – 199.99 V/m: filter 4 Range 2 – 10 V/m: filter 5 Range 0 – 1.99 V/m: filter 6 • 1 = 2 MHz (No Averaging) • 2 = 500 kHz (4x averaging) • 3 = 100 kHz (20x averaging) • 4 = 25 kHz (80x averaging) • 5 = 10 kHz (200x averaging) • 6 = 1 kHz (2000x averaging) • 7 = 500 Hz (4000x averaging) • 8 = 250 Hz (8000x averaging) • 9 = 100 Hz (20000x averaging) • 10 = 10 Hz (2e5x averaging) • 11 = 1 Hz (2e6x averaging)
FILTER?	<filter> For example '1'	Question the current filter.
FILTER?[space]MIN	1	Question the minimum filter.
FILTER?[space]MAX	11	Question the maximum filter.
STATUS?	<status> or <error>	Question the status of the laser. The reply can be: • 'LASERON' • 'STANDBY' (laser is off) • <error>, will not be cleared. Use clear for clearing <error>.
ZERO	'OK' or <error>	Zero the RadiSense®
T<temp>	<value> For example: 'T35.75'	Read average temperature of probe, where <temp> is the unit: • C for degrees Celsius • F for degrees Fahrenheit
B	:B06.23	This command is added for backwards compatibility only.

RadiSense® 3000 series (RSS3018) commands continued (2)

Command	Reply	Description
FREQ[space]<frequency in Hz>	'OK' or <error>	Set the operating frequency. The valid <frequency> range is depending on the calibration table, <frequency> can be from the lowest stored frequency to the highest stored frequency which can be questioned with 'FREQ? MIN' and 'FREQ? MAX'. See those command's for more information.
FREQ?	<frequency> or <error> For example: '4000000'	Return the operating frequency in Hz.
FREQ?[space]MIN	<frequency> or <error> For example: '9000'	Return the minimum frequency of the probe in Hz.
FREQ?[space]MAX	<frequency> or <error> For example: '5000000'	Return the maximum frequency of the probe in Hz.

RadiSense® 3000 series (RSS3018) - Pulse measurement commands

Command	Reply	Description
TRGLVL[space]<trigger level>	'OK' or <error>	Set the trigger level for the probe to be. The trigger level is set on the individual axis and not the isotropic field.
TRGLVL?	<Value> or <error>	Get the current configured trigger level.
PULSE?	<Pulse data> or <error>. Example triggered: 12.42;4.32;3.32;1e-3; 1e-4; 1e-4 Example **not** triggered: 0.31;0.32;-1;-1;-1	Querying the PULSE? command will trigger a new measurement with the configured trigger level. The pulse data will be separated by a semicolon in the following sequence: • **Peak**, in V/m (2 digits after the decimal point) • **Average**, in V/m (2 digits after the decimal point) • **RMS**, in V/m (2 digits after the decimal point) • **Pulse duration** (50% to 50% of the max), in seconds as a scientific notation • **Pulse rise** (10% to 90% of full scale) , in seconds as a scientific notation • **Pulse fall time** (90% to 10% of full scale) , in seconds as a scientific notation The peak, average, RMS and pulse duration are the values as calculated over the actual pulse itself, from the start to the end of the pulse. The following fields will return -1 when no trigger has occurred during a period of 1 second. • Pulse duration • Pulse rise time • Pulse fall time

RadiSense® RSS3018 Reverberation statistics Commands

Command	Reply	Description
DATACONFIG[space]<data value>	'OK' or <error>	This command can be used to configure which data is measured and reported in the statistics mode. <data value> is the sum of the values that should be measured and reported. • Xavg = 1 (Bit 0) • Xmin = 2 (Bit 1) • Xmax = 4 (Bit 2) • Xstd = 8 (bit 3) • Yavg = 16 (Bit 4) • Ymin = 32 (Bit 5) • Ymax = 64 (Bit 6) • Ystd = 128 (bit 7) • Zavg = 256 (Bit 8) • Zmin = 512 (Bit 9) • Zmax = 1024 (Bit 10) • Zstd = 2048 (bit 11) • * ETotavg = 4096 (Bit 12) • * ETotmin = 8192 (Bit 13) • * ETotmax = 16384 (Bit 14) • * ETotstd = 32768 (Bit 15) 'max' = the highest measured 'filtered result' during the observation time. 'min' = the lowest measured 'filtered result' during the observation time. 'avg' = the linear (in V/m) averaged value of 'filtered result' during the observation time. 'std' = the sample-standard-deviation of the 'filtered result' (expressed in V/m) during the observation time. Being NaN when only 1 'filtered result' is available during the observation time.

RadiSense® RSS3018 Reverberation statistics commands continued

Command	Reply	Description
OBSERVATIONTIME[space]<value>	'OK' or <error>	Configure the observation time, expressed in seconds. Minimum time is depending on the amount of measured and reported data. The minimum allowed observation time can be retrieved using the 'OBSERVATIONTIME? MIN' command. The number of possible observation is always rounded down. If the filter setting is set to 1 sec. and the observation time to 1.5 then the data is calculated over 1 sec.
OBSERVATIONTIME?	<Value> expressed in seconds.	Returns the current configured observation time.
OBSERVATIONTIME?[space]MIN	<Value> expressed in seconds.	Returns the minimal observation time based on the current selected filter and the DATACONFIG setting, to retrieve a single 'filtered result'. To be able to have standard-deviation result, the observation time needs to be at least 2x larger.
TRGMODE[space]<mode>	'OK' or <error>	Set the trigger mode, where <mode> can be: • 0: Triggered • 1: Continuous Setting a '0 – triggered' mode, will stop/abort the continuous mode.
TRGMODE?	'0' or '1'	Get the current configured trigger mode.
GET	<value>;<value>;.... Measured values, separated by ';' expressed in V/m.	Triggers a new statistics measurement for a period of the selected observation time. The values that are activated by the DATACONFIG command, will then be reported. This command is only usable in combination with the activated triggered mode.

RadiSense® RSS3018 Reverberation statistics commands continued

Command	Reply	Description
#<headersize><number of bytes><data>	Bin data frame from dump #<headersize><number of bytes><data> 'IEEE 488.2 binary block data: #<headersize><number of bytes><data>' For example: #210<10 * bytes> #12<2 * bytes>	When the trigger mode is set to continuous, every observation time, the values that are activated by the DATACONFIG command, are reported. The <data> in the result are the values that are activated by the DATACONFIG command, expressed in IEEE 32-bit floating point format.

RadiSense® 3000 series (RSS3018) - range commands

Command	Reply	Description
RANGE[space]<range>	'OK' or <error>	Configure the gain range of the probe. <range> may be the following values: • 0: Auto ranging • 1: High gain • 2: Low gain Note: When modifying the range, the laser executes a single cycle of shutdown and startup.
RANGE?	<range>, for example '0'	Return the current selected gain range.

RadiGen® 2000 series commands

The following table shows the general and status commands for the RadiGen® RF signal generators. Beside these commands, the generic commands as defined.

Standard Commands for Programmable Instruments (SCPI) (RadiGen® only)

All commands send to the RadiCentre® are programmed through the Standard Commands for Programmable Instruments (SCPI). Note that all commands are not case sensitive. The Structure of the commands are as followed:

- [command] Information contained within [here] is considered not nessecary.
- [COMmand] Infromation contained within [here] is considerded not nessecary but if used the CAPITAL letters are nessecary
- COMmand Information in capital letters is considered nessecary and is part of the short notation.

Command example: '[SENSe]:TEMPerature: MAXimum?'
Information needed for the command to work: 'TEMP: MAX?'
Command variations: 'SENS:TEMP MAX?' or 'SENSE:TEMPERATURE: MAXIMUM?'

For all command the SCPI 1999.0 is used. For more information consult the SCPI manual - version 1999.0.

Command	Reply	Description
*CLS	No reply	Clears the status byte (STB) and event status enable (ESR) register. STB and ESR are set to 0
*ESE[space] <value>	No reply	Sets bits in the standard event status enable register. <value> is the number from 0 to 128
*ESE?	<value> For example: '16'	Requests the result of the event status enable (ESE) register. Value is from 0 to 128
*ESR?	<value> For example: '16'	Requests the result of the event status enable (ESR) register. Value is from 0 to 128
*OPC?	'0' = not executed | '1' = executed	Query whether the last command has been executed
*RST	No reply	Reset all parameters to their specific default values
*SRE[space]<value>	No reply	Enables bits in the service request (SRE) register. <value> is from 0 to 128
*SRE?	<value> For example: '0'	Reads the current state of the service request enable register. Value is from 0 to 128
*STB?	<value> For example: 32	Reads the value of the instrument status byte (STB) Value is from 0 to 128
SVERsion?	<value> For example: ':SVERSION 1.0.0'	Gets the current software version
HVERsion?	<value> For example: ':HVERSION 1'	Gets the current hardware version
[SENSe]:TEMPerature?	<value> For example: '25'	Get the current device temperature (in °C).
[SENSe]:TEMPerature: MINimum?	<value> For example: '10'	Get the minimum temperature (in °C) under which the RadiGen® can operate within specifications

RadiGen® commands continued

Command	Reply	Description
[SENSe]:TEMPerature: MAXimum?	<value> For example: '35'	Get the maximum temperature (in °C) under which the RadiGen® can operate within specifications.
SYSTem:PRESet	No reply	Reset the generator. The following things are changed for all outputs: • Freq: 125 MHz • Freq min: 9 kHz • Freq step: 10 MHz • Freq max: 6 GHz (RGN2006A output 1) / 400 MHz (RGN2006A output 2 & RGN2400A) • Ampl: -30 dBm • AMpl step: 1 dB • AM freq: 1 kHz • AM Freq step: 10 Hz • AM depth: 80 % • AM state: off • FM freq: 1 kHz • FM dev: 1 kHz • FM State: off • PM delay: 2 ns • PM Width: 2 ns • PM State: off • BM number: 50 pulses • BM period: 1 sec • BM state: off Output selected: output 1 Carrier: off
SYSTem:SAVECONfiguration	No reply	Save the current system parameters See preset for saved parameters
SYSTem:VERSion?	'SCPII version> For example: ':SYSTEM:VERSION 1994.0'	Question the version of SCPII
SOFTWARE:UPDate	<value> For example: 'SW_ UPDATE'	Starts the software update procedure
SYSTem:BUSAddress	<address> For example: ':SYSTEM:BUSADDRESS 4'	Question the busaddress of the plug-in card.
SYSTem:IDNUmber?	<ID number> For example: ':SYSTEM:IDNUMBER 1.44.65.178.27.0.0.207'	Question the unique ID number of the plug-in card.
STATus:PRESet	No reply	The Status Operation Enable and Status Questionable Enable registers are cleared
STATus:OPERation:EVENt?	<Status operation event> For example: ':STATUS:OPERATION:EVENT 0'	Question the status operation event register
STATus:OPERation:CONDition?	<status questionable condition> For example:	Question the status questionable codition register

RadiGen® commands continued (2)

Command	Reply	Description
STATus:OPERation:EVENt:CONDition?	<status operation condition> For example: 'STATUS:OPERATION:CONDITION 0'	Question the status operation condition register
STATus:OPERation:ENABle [space]<value>	No reply	Sets the Status Operation Enable register
STATus:OPERation:[EVENt:ENABle[space]<value>	No reply	Set the status operation enable register
SYSTem:<error>[:NEXT]?	<command> [space] <error> For example: ':SYSTEM:<error> 0, 'No <error>''	Get the first system error. When this command is sent again, the second/next error is replied. Etc,

Carrier frequency commands

The following table shows the carrier frequency commands for the RadiGen® RF signal generators.

Command	Reply	Description
[SOURce]:FREQuency [space]<value>	No reply	Set carrier frequency for the selected output. <value> range: **RGN2006A:** Output 1: 9 kHz - 6 GHz Output 2: 9 kHz - 400 MHz **RGN2006B:** Output 1: 9 kHz - 6 GHz Output 2: Not available **RGN2400A:** Output 1: 9 kHz - 400 MHz Output 2: Not available <value> can also be: • 'UP': Increase the frequency with the step size • 'DOWN': Decrease the frequency with the step size
[SOURce]:FREQuency?	<value> For example: '50000000'	Get the carrier frequency in Hz.
[SOURce]:FREQuency:STARt [space]<value>	No reply	This is the highest carrier frequency that can be set. For frequency stepping, the generator is set to this frequency when the next step will be smaller than the start frequency <value> = stop frequency in Hz.
[SOURce]:FREQuency:STARt?	<value> For example: '9000000'	Gets the start frequency in Hz.
[SOURce]:FREQuency:STOP [space]<value>	No reply	This is the highest carrier frequency that can be set. For frequency stepping, the generator is set to this frequency when the next step will be smaller than the start frequency <value> = stop frequency in Hz.
[SOURce]:FREQuency:STOP?	<value> For example: '10000000'	Get the stop frequency

Carrier frequency commands - Continued

Command	Reply	Description
[SOURce]:FREQuency:STEP [space]<value>	No reply	Set the step size of the carrier frequency <value> = frequency step size in Hz.
[SOURce]:FREQuency:STEP?	<value>For example: '100000'	Get the step size of the carrier frequency
[SOURce]:FREQuency:STEP :MINimum	No reply	Set the minimum carrier frequency
[SOURce]:FREQuency:STEP:MINimum?	<frequency> For example: '1'	Get the minimum step size of the carrier frequency step size
[SOURce]:FREQuency:STEP: MAXimum	No reply	Set the maximum carrier frequency
[SOURce]:FREQuency:STEP: MAXimum?	<frequency> For example: '1000000000'	Get the maximum step size of the carrier frequency step size
[SOURce]:FREQuency:MINimum?	<frequency> For example: '1000000'	Question the minimum frequency for the selected output in Hz.
[SOURce]:FREQuency:MAXimum?	<frequency> For example: '1000000'	Question the maximum frequency for the selected output in Hz.

Carrier amplitude commands

The following table shows the carrier amplitude commands for the RadiGen® RF signal generators.

Command	Reply	Description
[SOURce]:POWer:[LEVel]: [IMMediate]:[AMPLitude]?	<value> For example: ':POWER -30.0'	Get the carrier amplitude.
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude][space]<value>	No reply	Set the carrier amplitude <value> = amplitude in dBm.
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:MINimum	No reply	Set the minimum carrier amplitude in dBm.
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:MINimum?	<value> For example: ':POWER:MIN -70.0'	Get the minimum carrier amplitude in dBm.
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:MAXimum	No reply	Set the maximum carrier amplitude in dBm.
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:MAXimum?	<value> For example: ':POWER:MAX 13.0'	Get the maximum carrier amplitude in dBm.
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:STEP[space]<value>	No reply	Set the step size of the carrier amplitude. <value> = step size (in dB, can be 0.1 - 100 dB)
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:STEP:MINimum?	<value> For example: ':POWER:STEP:MIN 0.1'	Get the minimum step size of the carrier amplitude step size in dBm
[SOURce]:POWer:[LEVel]:[IMMediate]: [AMPLitude]:STEP:MAXimum?	<value> For example: ':POWER:STEP:MAX 0.1'	Get the maximum step size of the carrier amplitude step size in dBm.

Output commands

The following table shows the output commands for the RadiGen® RF signal generators.

Command	Reply	Description
OUTPut:STATe [space]<value>	No reply	Set the carrier of the signal output Carrier ON/OFF, default RF
OUTPut1:STATe [space]<value>	No reply	Set the output signal ON or OFF for the main output <value> = ON <value> = OFF
OUTPut2:STATe [space]<value> (RGN2006A only)	<value> For example: 'ON'	Set the output signal ON or OFF for the secondary output <value> = ON <value> = OFF
OUTPut1:STATe?	<value> For example: ':OUTPUT:STATE OFF'	Get the state of the output signal for the main output
OUTPut2:STATe?	<value> For example: ':OUTPUT2:STATE OFF'	Get the state of the output signal for the secondary output (RGN2006A only)
OUTPut:SELECTed?	<value> For example: '1'	Returns the current active output. Reply: '1' = main output is selected Reply: '2'= secondary output is selected

Amplitude modulation commands

The following table shows the amplitude modulation commands for the RadiGen® RF signal generators.

Command	Reply	Description
[SOURce]:AM:STATe [space]<value>	No reply	Set the amplitude modulation ON or OFF <value> = ON or OFF
[SOURce]:AM:STATe?	<value> For example: 'OFF'	Get the state of the amplitude modulation
[SOURce]:AM:DDS [space]<state>	No reply	Turn the LF-DDS ON or OFF <state> = ON or OFF Default after *RST the LF-DDS is turned OFF
[SOURce]:AM:DDS?	<value> For example: 'ON'	Gets the state of the LF-DDS
[SOURce]:AM:INTernal: FREQuency[space]<value>	No reply	Set the amplitude modulation frequency <value> = frequency in Hz.
[SOURce]:AM:INTernal: FREQuency?	<value> For example: '1000'	Get the amplitude modulation frequency in Hz.
[SOURce]:AM:INTernal:FREQuency: STEP[space]<value	No reply	Set the step size of the amplitude modulation frequency <value> = step size in Hz.
[SOURce]:AM:INTernal:FREQuency: STEP?	<value> For example: ':AM:INT:FREQ:STEP 10'	Get the current step size of the amplitude modulation frequency in Hz.
[SOURce]:AM:INTernal:FREQuency: MINimum?	<value> For example: ':AM:INT:FREQ:MIN 1'	Get the minimum amplitude modulation frequency in Hz.
[SOURce]:AM:INTernal:FREQuency: MAXimum?	<value> For example: ':AM:INT:FREQ:MAX 100000'	Get the maximum amplitude modulation frequency in Hz.
[SOURce]:AM:INTernal:FREQuency: STEP:MINimum	No reply	Set the minimum step size of the amplitude modulation frequency in Hz.
[SOURce]:AM:INTernal:FREQuency: STEP:MAXimum	No reply	Set the maximum step size of the amplitude modulation frequency in Hz.
[SOURce]:AM:[DEPTh][space]<value>	No reply	Set the amplitude modulation depth from 0 to 100%. <value> = in percentage. For example: 0,40 or 54,3
[SOURce]:AM:[DEPTh]?	<value> For example: '54,3'	Get the amplitude modulation depth in percentage.

Amplitude modulation commands - continued

Command	Reply	Description
[SOURce]:AM:[DEPTh]:MINimum?	<value> For example: ':AM:DEPTH:MIN 0.0'	Get the minimum amplitude modulation depth in percentage.
[SOURce]:AM:[DEPTh]:MAXimum?	<value> For example: ':AM:DEPTH:MAX 100.0'	Get the maximum amplitude modulation depth in percentage.
[SOURce]:AM:OPT:2HZ	No reply	Set the preset for AM 2Hz, at 80% depth
[SOURce]:AM:POWer:[LEVel]: [IMMediate] [AMPLitude]:MINimum	<value> For example: ':AM:POW:MIN -70.0'	Question the minimum carrier level with the AM ON in dBm.
[SOURce]:AM:POWer:[LEVel]: [IMMediate] [AMPLitude]:MAXimum	<value> For example: ':AM:POW:MAX 4.0'	Question the maximum carrier level with the AM ON in dBm.

Pulse modulation commands

The following table shows the pulse modulation commands for the RadiGen® RF signal generators.

Command	Reply	Description
[SOURce]:PULM:STATe [space]<value>	No reply	Set the pulse modulation ON or OFF <value> = ON or OFF
[SOURce]:PULM:STATe?	'ON' or 'OFF'	Get the state of the pulse modulation
[SOURce]:PULSe:WIDTh [space]<value>	No reply	Set the width (ON-time) for the pulse modulation <value> = time in seconds.
[SOURce]:PULSe:WIDTh?	<value> For example: ':PULSE:WIDTH 0.00000020'	Get the width (ON-time) for the pulse modulation in seconds.
[SOURce]:PULSe:WIDTh:MINimum?	<value> For example: ':PULSE:WIDTH:MINIMUM 0.00000020'	Get the minimum width (ON-time) pulse modulation in seconds.
[SOURce]:PULSe:WIDTh:MAXimum?	<value> For example: ':PULSE:WIDTH:MAXIMUM 100.00000000'	Get the maximum width (ON-time) pulse modulation in seconds.
[SOURce]:PULSe:DELay [space]<value>	No reply	Set the delay (OFF-time) for the pulse modulation <value> = time in seconds. For example: 10
[SOURce]:PULSe:DELay?	<value> For example: ':PULSE:DELAY 0.00000020'	Get the delay (OFF-time) for the pulse modulation in seconds.
[SOURce]:PULSe:DELay:MINimum?	<value> For example: ':PULSE:DELAY:MINIMUM 0.00000020'	Get the minimum delay (OFF-time) pulse modulation in seconds.
[SOURce]:PULSe:DELay:MAXimum?	<value> For example: ':PULSE:DELAY:MAXIMUM 100.00000000'	Get the maximum delay (OFF-time) pulse modulation in seconds.

Pulse burst modulation commands

The following table shows the pulse burst modulation commands for the RadiGen® RF signal generators.

Command	Reply	Description
[SOURce]:PULM:BURST:STATe [space]<value>	No reply	Set the pulse burst modulation ON or OFF <value> = ON or OFF
[SOURce]:PULM:BURST:STATe?	':PULM:BURST:STATE ON' or ':PULM:BURST:STATE OFF'	Get the state of the pulse burst modulation
[SOURce]:PULM:BURST:NUMber [space]<value>	No reply	Set the number of pulses in a period for the pulse burst modulation <value> = number of pulses For example: 50
[SOURce]:PULM:BURST:NUMber?	<value> For example: ':PULM:BURST:NUMBER 50'	Get the number of pulses in a period for the pulse burst modulation.
[SOURce]:PULM:BURST:NUMber: MINimum?	<value> For example: ':PULM:BURST:NUMBER:MINIMUM 1'	Get the minimum pulse burst modulation number.
[SOURce]:PULM:BURST:NUMber: MAXimum?	<value> For example: ':PULM:BURST:NUMBER:MAXIMUM 1000'	Get the maximum pulse burst modulation number.
[SOURce]:PULM:BURST:PERiod [space]<value>	No reply	Set the period time for the pulse burst modulation <value> = time (in seconds) For example: 1
[SOURce]:PULM:BURST:PERiod?	<value> For example: ':PULM:BURST:PERIOD 1.000'	Get the period time for the pulse burst modulation.
[SOURce]:PULM:BURST:PERiod: MINimum?	<value> For example: ':PULM:BURST:PERIOD:MINIMUM 0.002'	Get the minimum pulse burst modulation period.
[SOURce]:PULM:BURST:PERiod: MAXimum?	<value> For example: ':PULM:BURST:PERIOD:MAXIMUM 100.000'	Get the maximum pulse burst modulation period.

RadiAmp® commands

The following table shows the general commands for the RadiAmp® RF power amplifiers.
Beside these commands, the generic commands as defined are also applicable.

Command	Reply	Description
OFF	'OK' or <error>	Turns the RadiAmp® amplifier OFF 'OK' is replied if the amplifier is 'OFF'
OPERATE	'OK' or <error>	Switches the RadiAmp® amplifier to OPERATE Applied RF carrier signal will now be amplified. 'OK' is replied when the amplifier is in 'OPERATE' status
STANDBY	'OK' or <error>	Switches the RadiAmp® amplifier to STANDBY No RF signal will be present at the RF output of the amplifier. 'OK' is replied when the amplifier is in 'STANDBY' status
LOCKOUT	'OK' or <error>	Sets the display of the RadiAmp® amplifier to REMOTE. This will prohibit manual operation of the amplifier. Use the LOCAL button to switch back to LOCAL mode
LOCAL	'OK' or <error>	Sets the display of the RadiAmp® amplifier to LOCAL mode. This will enable manual operation of the amplifier.
STATUS?	<Value> For example: 'OFF'	Returns the actual status of the RadiAmp® amplifier. Possible status 'OFF' 'STANDBY' 'OPERATE' 'Error'
CLEAR	'OK' or <error>	Resets amplifier to default status.

RadiField® commands

In addition to the generic commands the following default user commands and description are applicable for the RadiField® E-field generators:

Command	Reply	Description
RESET	'OK'	Resets the RadiField® E-field generator, which will: • Clear all <error>s • Clear all occurred crowbars • Reset the frequency to 3 GHz • Set the amplifier to standby mode (if this fails an <error> is replied)
STATUS?	<value> For example: '0'	Returns the actual status of the RadiField® E-field generator in the form of an <error> or warning. • '0' = No <error>/warning • '1' = 3.3 Volt <error> • '2' = 5 Volt <error> • '4' = 10 Volt <error> • '8' = -10 Volt <error> • '16' = 50 Volt <error> • '32' = Current driver 3 <error> • '64' = Current final <error> • '128' = Temperature <error> • '256' = Power <error> • '512' = Driver fet adjustment <error> • '1024' = Final fet adjustment <error> • '2048' = Oven too cold warning • '4096' = Oven too hot warning • '8192' = Memory <error> • '16384' = Driver vGate min limit <error> • '32768' = Driver vGate max limit <error> • '65536' = Driver adjustmenttimed out <error> • '131072' = Final vGate min limit <error> • '262144' = Final vGate max limit <error> • '524288' = Final adjustment timed out <error> Some numbers represent multiple (of the previously mentioned) <error>s occurring at ones. For example, reply: • '3' = <error> 1 and 2 = 3.3V and 5V <error> • '5' = <error> 1 and 4 = 3.3V and 10V <error>
CLEAR	'OK'	Clears the internal <error> and crowbars are reset

RadiField® commands Continued (2)

The following table shows the general commands for the RadiAmp® RF power amplifiers.
Beside these commands, the generic commands as defined are also applicable.

Command	Reply	Description
MAINS?	'1' or '0' or <error>	Request the actual status of the RadiField® mains power '1' = ON '0' = OFF
MAINS[space]<value>	'OK' or <error>	Turn the main power of the RadiField ON or OFF <value> = 'ON' or 'OFF'
STANDBY	'OK' or <error>	Switches the RadiField® field generator to STANDBY In this state there will not be generated any RF Field 'OK' is replied when the field generator is in 'STANDBY' status
OPERATE	'OK' or <error>	Switches the RadiField® field generator to OPERATE In this state the applied RF carrier signal will be amplified. 'OK' is replied when the amplifier is in 'OPERATE' status
MODE?	<value> For example: 'Waiting for start-up' or <error>	Returns the actual status of the RadiField® field generator Reply is depending on the operational mode Waiting for start-up Going to standby Standby Going to operate Operate Off
CURRENT?	<value> For example: '1.2'	Measures the RF current in the PSU2400A plug-in card The current response is in Ampere.
TEMP?	<value> For example: '23.6'	Measures the temperature The temperature response is in degrees Celcius.
POS[space]<value>	'OK' or <error>	Controls the position of the internal H/V polarizer in the RadiTower® mast to horizontal or vertical. <value> = 'HOR' or 'VER'

RadiField® commands Continued (3)

Command	Reply	Description
POS?	<value> For example: 'HOR'	Gives the actual status/position of the internal H/V polarizer 'MOV' = Moving in between positions 'STOP' = Stopped, but not in horizontal or vertical position 'HOR' = In horizontal position 'VER' = In vertical position Reply is depending on the actual status/position
STOP	'OK' or <error>	Stops the movement of the H/V polarizer
SND[space]<soundMode	'OK' or <error>	Set the sound mode of the RadiField backplane. <soundMode> can be: 0 = All sounds off 1 = Warning sound polarizer movement enabled.
SND?	<soundMode> For example: '0'	Question the sound mode of the RadiField backplane. <soundMode> can be: 0 = All sounds off 1 = Warning sound polarizer movement enabled.
POW<powermeter>?	<value> For example: '-12.34 dBm'	Get the measured power level <powermeter> = FWD or RFL power level in dBm
FREQUENCY? MIN	<value> For example: '1000000000'	Get the minimum frequency in Hz.
FREQUENCY? MAX	<value> For example: '6000000000'	Get the maximum frequency in Hz.
FREQUENCY[space] <value>	'OK' or <error>	Set the frequency of the RadiField® <value> = frequency in Hz, for example: 500000000
FREQUENCY?	<value> For example: '5000000000'	Get the frequency of the RadiField® in Hz

REMARK: The commands: POS, POS? and STOP can only be used if the H/V polarizer is connected.

RadiPower® commands

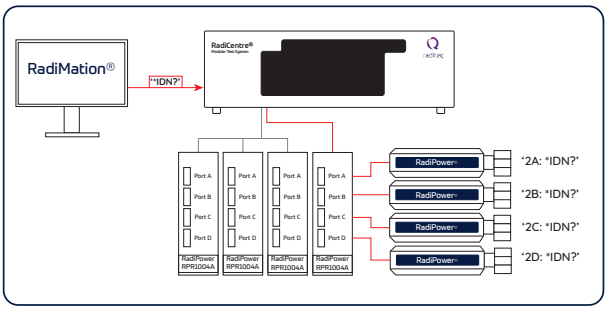
The RadiPower® range of USB RF power meters consist of the following product models:

RadiPower® 2000 Series
- RPR2006C RF power meter, CW - 9 kHz to 6 GHz
- RPR2006P RF power meter, Burst/Pulse - 9 kHz to 6 GHz
- RPR2018C RF power meter, CW – 80 MHz to 18 GHz
- RPR2018P RF power meter, Burst/Pulse – 80 MHz to 18 GHz

RadiPower® 3000 series
- RPR3006W RF Power meter, ETSI Wireless – 20 MHz to 6 GHz
- RPR3008W RF Power meter, ETSI Wireless – 20 MHz to 8 GHz

RadiPower® 4000 Series
- RPR4006R RF Power meter, True RMS - 4 kHz to 6 GHz

RadiCentre® command set
Please note that if the RadiPower® is connected to the USB1004A all the commands must have a prefix consisting of the 'Device number' and the RadiCentre® slot. An example is shown in the picture below and the next page.



Prefix & Communication example:

'2A:POWER?'

Get the power level of the RadiPower® sensor which is connected to port A of the RadiPower® plug-in card in slot 2.

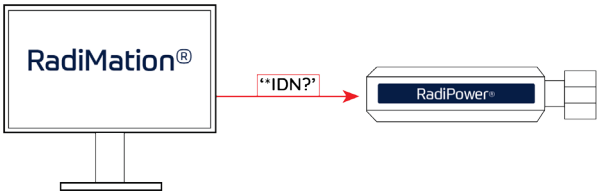
'2B:FILTER?'
Get the filter setting of the RadiPower® sensor which is connected to port B of the RadiPower® plug-in card in slot 2.

'3B:FILTER?'
Get the filter setting of the RadiPower® sensor which is connected to port B of the RadiPower® plug-in card in slot 3.

'2' = 'board-number' of the RadiPower® plug-in card
'A' & 'B' = ports of the RadiPower® RF power sensor
'FILTER?' = message to the RadiPower® RF power sensor

Stand-alone command set
The RadiPower® sensor can also be directly connected to a PC. When the RadiPower® is directly plugged into a PC the prefix is not required or necessary.

Communication with the RadiPower® sensor is possible using a virtual COM-port (VCP)
For more information see chapter 'stand alone configuration'.



RadiPower® commands | 2000 Series

In addition to the generic commands the following default user commands and description is applicable for the RadiPower® RF power meters: RPR2006C | RPR2006P | RPR2018C | RPR2018P

(1) = Only applies for 2006C and 2018C
(2) = Only applier for 2006P and 2018P

Command	Reply	Description
*IDN?	For example: Raditeq, RPR2018C, 2.61 Raditeq, RPR2018P, 2.61 Raditeq, RPR2006C, 2.61 Raditeq, RPR2006P, 2.61	Returns the ID of the RadiPower.
ID_NUMBER?	<value> For example: '1.58.95.146.21.0.0.124'	Returns the unique identifier number.
VERSION_SW?	<value> For example: '4.0.3'	Returns the software version.
VERSION_HW?	<value> For example: '4'	Returns the hardware version.
STATUS?	'OK' or <error>	Check whether an error is raised.
REBOOT SYSTEM	'OK' or <error>	Restart the RadiPower embedded software.
CLEAR	'OK' or <error>	Clears error messages (if the error is still present after clearing, the error is raised again).
LOCAL	'OK' or <error>	Return to local mode.

RadiPower® commands | 2000 Series

Command	Reply	Description
RESET	'OK' or <error>	Reset the module. The following settings are reset: • Frequency: 1.3 GHz, • ACQ Speed: 1 MS/sec, • Filter: Auto, Power offset: 0.00 dB, • Power units: dBm, • Auto store: Off, • VBW mode 0: 3 (1), • LOG Threshold: -40.00 dBm, • Trigger mode: Edge, • Trigger Edge mode: Rising, • Trigger filter: 2, • Auto trigger: Off, • Trigger holdoff: 0, • Log delay: 0.
STORE	'OK' or <error>	Stores the following parameters: • Frequency • ACQ Speed • Filter • Power offset • Power units • VBW mode (1) • Mode (2) • LOG Threshold (2) • Trigger mode (2) • Trigger edge mode (2) • Trigger filter (2) • Auto trigger (2) • Trigger holdoff (2) • Log delay (2).
AUTO_ STORE<space><store>	'OK' or <error>	Sets the auto store setting, with <store>: 0 = settings will not be automatically stored, 1 = settings will be stored in flash after each change of the settings. *Be aware, the flash will degrade much faster when activated!
AUTO_STORE?	<value> For example: '1'	Queries the auto store setting. 0 = settings will not be automatically stored, 1 = settings will be stored in flash after each change of the settings. *Be aware, the flash will degrade much faster when activated!

(1) = Only applies for 2006C and 2018C
(2) = Only applier for 2006P and 2018P

RadiPower® Measurement commands | 2000 Series

Command	Reply	Description
POWER?	<value> For example: '-38.81 dBm'	Returns the measured power in dBm or Watt.
BURST?[space]<number>	<value> For example, with <number> as '5': '-63.92 -63.85 -63.85 -64.03 -63.99 dBm'	Performs <number> of power measurements in sequence and replies with measured power values in dBm, separated by spaces. After the last value, '<space>dBm' is sent.
POWER_UNIT[space]<unit>	'OK' or <error>	Sets the unit for the 'POWER?' command reply. <unit> can be: • 0 = dBm, • 1 = Watt, • 2 = Watt in scientific E notation (e.g., 10.34526e-6).
POWER_UNIT?	<value> For example: '0'	Replies with the currently used power unit. • 0 = dBm, • 1 = Watt, • 2 = Watt in scientific E notation.
POWER_OFFSET[space]<offset>	'OK' or <error>	Sets the power offset in dB. <offset> can range from -100.00 to +100.00 dB.
POWER_OFFSET?	<value> For example: '15.23'	Replies with the current power offset.
FILTER[space]<filter>	'OK' or <error>	Sets the power meter's filter, where <filter> can be set from '1' to '7' or 'AUTO'.
FILTER?	<value> For example: 'AUTO'	Gets the currently used filter of the power meter.
FREQUENCY?[space]MIN	'9 kHz for 2006C/P with #010 option', '9 kHz for 2006C/P', '50000 kHz for 2018C/P'	Gets the minimum frequency of the power meter in kilohertz.
FREQUENCY?[space]MAX	'6000000 kHz for 2006C/P', '18000000 kHz for 2018C/P'	Gets the maximum frequency of the power meter in kilohertz.
FREQUENCY<space><frequency>	'OK' or <error>	Sets the frequency of the power meter in kilohertz.
FREQUENCY?	<value> For example: '1300000 kHz'	Gets the currently used frequency of the power meter in kilohertz.
VBW [space]<vbw> (1)	'OK' or <error>	Sets the VBW of the 2006x models. The <vbw> can be: • 0 = 10MHz, • 1 = 1MHz, • 2 = 200kHz, • 3 = 1kHz, AUTO = Automatic VBW, coupled to sample speed: • VBW = 10MHz at 10MSps or 1MSps, • VBW = 1MHz at 100kSps, • VBW = 200kHz at 20kSps.

(1) = Only applies for 2006C and 2018C

RadiPower® Measurement commands | 2000 Series - continued (2)

Command	Reply	Description
GET_DATA? GD?	<value> For example: '-6858;50000000;12'	Returns '<power>;<frequency>;<filter>' in a single reply. Where '-6858;50000000;12' results in -68.85 dBm, 50MHz, filter 12
ACQ_SPEED[space]<speed>	'OK' or <error>	Sets the ADC sample speed in kSps. <speed> can be: • 20 • 100 • 1000
ACQ_SPEED?	<value> For example: '1000'	Gets the currently set ADC sample speed used by the power meter.

RadiPower® commands envelope tracing | 2000 Series | Model P

The RadiPower® 2000 Series Model P is specifically designed for capturing pulsed power signals and features an extended command set built upon the CW command set.

Command	Reply	Description
MODE[space]<mode>	'OK' or <error>	Set the mode. <mode> can be: • 0 = RMS mode • 1 = Max hold (peak) • 2 = Envelope tracing mode (burst mode)
MODE?	<value> For example: '0'	Returns the current mode: • 0 = RMS mode • 1 = Max hold (peak) • 2 = Envelope tracing mode (burst mode)
ACQ_LOG_RESET	'OK' or <error>	Clears the sample buffers
ACQ_LOG_ THRESHOLD[space]<threshold>	'OK' or <error>	Sets the trigger level in dBm. <threshold> can be set in the power range.
ACQ_LOG_THRESHOLD?	<value> For example: '-39.35'	Returns the set threshold in dBm.
ACQ_LOG_TRIG_ DIST[space]<trig dist>	'OK' or <error>	Sets the number of samples for <trig dist>. <trig dist> can be set from 2 to 10.
ACQ_LOG_TRIG_DIST?	<value> For example: '2'	Returns the trigger distance.
ACQ_LOG_TRIG_ HOLDOFF[space]<holdoff>	'OK' or <error>	Sets the holdoff number of samples. The holdoff starts after the delay. If there is no delay, it starts immediately when searching for a trigger. If a trigger occurs during the holdoff period, the holdoff resets. <holdoff> can be from 0 to 1,000,000.

RadiPower® commands envelope tracing | 2000 Series | Model P - Continued

Command	Reply	Description
ACQ_LOG_TRIG_HOLDOFF?	<value> For example: '1000'	Returns the holdoff period. <holdoff> can be from 0 to 1,000,000.
ACQ_LOG_ DELAY[space]<delay>	'OK' or <error>	Sets the number of samples to wait before starting measurement for a trigger. <delay> can be from 0 to 2,000,000.
ACQ_LOG_DELAY?	<value> For example: '1000'	Returns the number of samples delayed before starting measurement for a trigger. <delay> can be from 0 to 2,000,000.
ACQ_LOG_	'OK' or <error>	Sets the trigger settings. <mode>: • 0 = Edge triggering • 1 = Level triggering <edge>: • 0 = Falling edge • 1 = Rising edge <trig filter>: Can be set from 2 to 10 and averages the samples by this amount.
ACQ_LOG_TRIGGER?	<value> For example: '0,1,2'	Returns the current trigger settings in the format: <mode>,<edge>,<filter>. **Mode:** • 0 = Edge triggering • 1 = Level triggering <edge>: **Edge:** • 0 = Falling edge • 1 = Rising edge
ACQ_AUTO_ TRIGGER[space]<auto trig>	'OK' or <error>	<auto trig>: • 0 = Single triggering. A new trigger can be found after the 'ACQ_LOG_RESET' command. • 1 = Automatic triggering. After reading the data, the log automatically resets and searches for a new trigger.
ACQ_AUTO_TRIGGER?	<value> For example: '1'	Returns the auto trigger setting: • 0 = Single triggering. A new trigger can be found after the 'ACQ_LOG_RESET' command. • 1 = Automatic triggering. After reading the data, the log automatically resets and searches for a new trigger.
ACQ_LOG_STATUS?	<value> For example: '0'	Gets the current status of the envelope tracing mode. <status>: • 0 = Waiting for trigger • 1 = Buffers are filled
ACQ_LOG_MAX?	<value> For example: '-9.97 dBm'	Returns the highest recorded power value in dBm since the 'ACQ_LOG_RESET' command.
ACQ_LOG_DATA?	'1000 samples' or 'NO DATA'	Gets the first 1000 samples after the found trigger in dBm. Values are semicolon-separated.

RadiPower® commands envelope tracing | 2000 Series | Model P - Continued (2)

Command	Reply	Description
ACQ_LOG_DATA_ENH?	<pretrigger>,<posttrigger> ASCII data frame	Gets the samples before and after the found trigger. <pretrigger> and <posttrigger> can be set from 1 to 2000. The reply is in ASCII format, with semicolon-separated samples.
ACQ_LOG_DATA_ENH_BIN?	<pretrigger>,<posttrigger> BIN data frame	Gets the samples before and after the found trigger. <pretrigger> and <posttrigger> can be set from 1 to 2000. The reply is a binary dump. Special codes: 0x7777 = Data start, 0xAAAA = Data end. Each sample is 4 bytes wide.

RadiPower® commands 3000 Series

The following table shows the user commands for the RadiPower® model RPR3006W | RPR3008W.

Command	Reply	Description
RESET	'OK' or <error>	Reset the module. The following things are reset: Frequency: 1.3 GHz ACQ Speed: 1 MS/sec Filter: Auto LOG Threshold: -40.00 dBm Mode: 0 (CW mode) Edge mode: Rising Trigger filter: 1 Auto trigger: Off Burst periode: 60000 ms Burst noise timer: 10 samples Burst trigger level: -40.00 dBm Auto store: Off Trigger holdoff: 0 samples Log delay: 0 samples Log trigger: Internal Log pre trigger samples: 2000 Log post trigger samples: 10000 Power offset: 0.00 dB Power units: dB After resetting the user parameter the embedded software is restarted.
CLEAR	'OK' or <error>	When receiving the CLEAR command no action is taken
VERSION_SW?	<value> For example: '2.3.3'	Replies the current software version.

RadiPower® commands | 3000 Series Continued

Command	Reply	Description
TEMPERATURE?	<value> For example: '300'	Replies the temperature. The replied value must be divided by 10. For example the reply: '312' is equal to 31,2 degree Celsius.
REBOOT SYSTEM	'OK' or <error>	Restart the software of the RadiPower
POWER?	<value> For example: '-38,81 dBm'	Returns the measured power in dBm or Watt in mode 0. In mode 1 (max hold) the 'POWER?' command will return the highest value measured, since the previous 'POWER?' command. After reading the power, the max value will be cleared.
BURST?<space><number>	<value> For example with <number> is '5': '-63.92 -63.85 -63.85 -64.03 -63.99 dBm'	Performs <number> of power measurements after each other. It replies the measured power in dBm, separated with a space. After the last send power measurement '<space>dBm' is send.
POWER_UNIT<space><unit>	'OK' or <error>	Set in which unit the reply on the 'POWER?' command must be. <unit> can be: 0 = dBm 1 = Watt 2 = Watt in scientific E notation (for example 10.34526e-6) Option 2 is available from version 3.73
POWER_UNIT?	<value> For example: '0'	<value> can be: 0 = dBm 1 = Watt 2 = Watt in scientific E notation (for example 10.34526e-6) Option 2 is available from version 3.73
POWER_OFFSET<space><offset>	'OK' or <error>	Sets the power offset in dB. <offset> can be set from -100.00 to +100.00 dB.
POWER_OFFSET?	<value> For example: '15.23'	Replies the power offset. See the command: 'POWER_ OFFSET<space><offset>' for the explanation of <offset>.

RadiPower® Default user commands | 3000 Series Continued (2)

Command	Reply	Description
STORE	'OK' or <error>	The following parameters are stored by this command: • Frequency • ACQ Speed • Filter • LOG Threshold • Mode • VBW mode 0 • VBW other modes • Trigger edge • Trigger filter • Trigger distance • Trigger source • Auto trigger • Burst period • Burst noise timer • Burst trigger level • Burst EFT • Baud • Trigger holdoff • Log delay • Log pre trigger samples • Log post trigger samples • Power offset • Power units
AUTO_STORE<space><store>	'OK' or <error>	Sets the auto store setting, with <store>: • 0 = settings will not be automatically stored • 1 = settings will be stored in flash after each change of the settings.
AUTO_STORE?	<store> For example: '1'	Question the auto store setting. See the command: 'AUTO_STORE<space><store>' for the explanation of <store>.
FREQueNCY<space><frequency>	'OK' or <error>	Set the frequency of the RadiPower. <frequency> is measured in kHz and can be set within the range from minimum frequency to maximum frequency.
FREQUENCY?<space>MIN	<frequency> For example: '10000'	Get the minimum frequency of the RadiPower. MIN frequency depends on model.
FREQUENCY?<space>MAX	<frequency> For example: '6000000 kHz'	Get the maximum frequency of the RadiPower. MAX frequency depends on model.
FREQUENCY?	<frequency> For example: '1300000 kHz'	Get the current frequency of the RadiPower.

RadiPower® Default user commands | 3000 Series Continued (3)

Command	Reply	Description
FILTER<space><filter>	'OK' or <error>	Set the filter of the RadiPower. <filter> can be set from '1' till '7' and 'AUTO'.
FILTER?	<filter> For example: 'AUTO' or '2'	Get the filter of the RadiPower. See the command: 'FILTER[space]<filter>' for the explanation of <filter>.
VBW<space><vbw> (1)	'OK' or <error>	Set the vbw of the C/P-models. The <vbw> can be: 10M, 1M, 100k, 10k, 1k, AUTO. The VBW is coupled to the sample speed of the power meter: VBW = 10MHz at 33MSps, 20MSps; VBW = 1MHz at 5MSps, 10MSps; VBW = 100kHz at 500kSps, 1MSps; VBW = 10kHz at 100kSps; VBW = 1kHz at 1kSps, 10kSps, 50kSps.
FILTER_BW?	<BW> For example: '1000'	Returns the filter bandwidth <BW> in Hz. Sample speed divided by number of averages defined by the filter setting.
ACQ_SPEED<space><speed>	'OK' or <error>	Set the ADC sample speed in kSps. <speed> can be: 10, 50, 100, 500, 1000 (*), 5000 (*), 10000, 20000, 33333. (*) In mode 3 (burst) only these baud rates are available.
ACQ_SPEED?	<speed> For example: '20000'	Get the set ADC speed. See the command: 'ACQ_ SPEED<space><speed>' for the explanation of <speed>.

RadiPower® commands 3000 Series | Burst mode

Command	Reply	Description
BM_MEASURE_ PERIOD[space]<period>	'OK' or <error>	Sets the measurement period <period> in ms. <period> can be from 1 to 60,000 ms (v3.67 and lower) or from 1 to 60,100 ms (v3.68 and higher) in mode 3.
BM_MEASURE_PERIOD?	<value> For example: '60000'	Returns the measurement period. <period> can be from 1 to 60,000 ms (v3.67 and lower) or from 1 to 60,100 ms (v3.68 and higher).
BM_NOISE_ TIMER[space]<noise>	'OK' or <error>	Sets the number <noise> of samples allowed below the threshold before counting a new burst. <noise> can be set between 0 and 5000 samples.
BM_NOISE_TIMER?	<value> For example: '10'	Returns the number of samples set. <noise> can be between 0 and 5000 samples.
BM_TRIG_ LEVEL[space]<level>	'OK' or <error>	Sets the trigger level in dBm for burst detection. The level <level> can be set within the power range.
BM_TRIG_LEVEL?	<value> For example: '-40.00'	Returns the trigger level in dBm.
BM_GO	'OK' or <error>	Starts a single burst measurement.
BM_ARM[space]<wait>	'OK' or <error>	Prepares burst mode for a 'BM_GO' command. If 'BM_GO' is sent without 'BM_ARM[space]<wait>' beforehand, it automatically uses 10 as the wait time.
BM_STAT?	<value> For example: '0'	Returns the burst measurement status: • 0 = Measurement not started or in progress • 1 = Measurement completed, data ready to be read.
BM_BURST_COUNT?	<value> For example: '252'	Returns the number of bursts found within the measurement period (maximum 100,000).
BM_BURST_ DATA[space]<burst>?	'<start>;<end>;<power>' or 'NO DATA'	Returns the start time, end time, and RMS power for burst number <burst>.
BM_BURST_DATA_DUMP	'<start>;<end>;<power>' or 'NO DATA'	Returns the start time, end time, and RMS power for each burst. Each burst is printed on a new line.
BM_EFT[space]<EFT>	'OK' or <error>	Sets the Edge Fall Time (EFT) correction. <EFT> can be from 0 to 1000.
BM_EFT?	<value> For example: '100'	Returns the EFT setting. See 'BM_EFT[space]<EFT>' for details.
BM_TRIG_TIMER?	<value> For example: '100000'	Queries the CPU timer, which runs from trigger start to trigger stop.
BM_MINTIME?	<value> For example: '10'	Queries the minimum time in microseconds of the first and last burst if the burst wasn't fully captured in the buffer.

RadiPower® | 4000 Series

RadiPower® Default user commands | 4000 Series

The following table shows the user commands for the RadiPower® model RPR4006R

Command	Reply	Description
*IDN?	Raditeq, RPR4006R, 4.2.0	Returns the ID of the RadiPower.
ID_NUMBER?	<value> For example: '1.58.95.146.21.0.0.124'	Returns the unique identifier number.
VERSION_SW?	<value> For example: '4.0.3'	Returns the software version.
VERSION_HW?	<value> For example: '4'	Returns the hardware version.
STATUS?	'OK' or <error>	Checks whether an error is raised.
REBOOT SYSTEM	'OK' or <error>	Restarts the RadiPower embedded software.
CLEAR	'OK' or <error>	Clears error messages. If the error persists after clearing, it is raised again.
LOCAL	'OK' or <error>	Returns to local mode.
RESET	'OK' or <error>	Resets the module. The following parameters are reset: • Frequency: 1.3 GHz • ACQ Speed: 1 MS/sec • Filter: 12 • Auto store: Off • Power offset: 0.00 dB • Power units: dBm After resetting, the embedded software restarts.
STORE	'OK' or <error>	Stores the following parameters: • Frequency • ACQ Speed • Filter • Power offset • Power units
AUTO_STORE[space]<store>	'OK' or <error>	Sets the auto store setting: • 0 = Settings will not be automatically stored • 1 = Settings will be stored in flash after each change. **Be aware: Flash memory will degrade faster when activated!**
AUTO_STORE?	<value> For example: '1'	Queries the auto store setting: • 0 = Settings will not be automatically stored • 1 = Settings will be stored in flash after each change. **Be aware: Flash memory will degrade faster when activated!**

RadiPower® Measurement commands | 4000 Series

The following table shows the user commands for the RadiPower® model RPR4006R

Command	Reply	Description
POWER?	<value> For example: '-38.81'	Returns the measured power in dBm or Watt.
POWER_UNIT[space]<unit>	'OK' or error code	Sets the unit for the 'POWER?' command reply: • 0 = dBm • 1 = Watt • 2 = Watt in scientific E notation (e.g., 10.34526e-6). Option 2 is available from version 4.2.1
POWER_UNIT?	<value> For example: '0'	Replies with the unit in use: • 0 = dBm • 1 = Watt • 2 = Watt in scientific E notation. Option 2 is available from version 4.2.1
POWER_OFFSET[space]<offset>	'OK' or error code	Sets the power offset in dB. <offset> can be set from -100.00 to +100.00 dB.
POWER_OFFSET?	<value> For example: '15.23'	Replies with the current power offset value.
FILTER[space]<filter>	'OK'	Sets the filter of the power meter. <filter> can be set from '1' to '12'.
FILTER?	<value> For example: '12'	Returns the current filter used by the power meter.
FILTER_BW?	<value> For example: '1000'	Returns the filter bandwidth in Hz. Calculated by ACQ speed divided by averaging.
FREQUENCY?[space]MIN	<value> For example: '4000'	Returns the minimum frequency of the power meter in Hertz.
FREQUENCY?[space]MAX	<value> For example: '6000000000'	Returns the maximum frequency of the power meter in Hertz.
FREQUENCY[space]<frequency>	'OK' or <error>	Sets the frequency of the power meter. <frequency> is in Hertz.
FREQUENCY?	<value> For example: '1300000000'	Returns the current frequency of the power meter in Hertz.
GET_DATA?	<value> For example: '-6885;50000000;12'	Returns '<power>;<frequency>;<filter>' in a single reply. Where '-6858;50000000;12' results in -68.85 dBm, 50MHz, filter 12
GD?		
ACQ_SPEED[space]<speed>	'OK' or <error>	Sets the ADC sample speed in kSps. <speed> can be: • 1000 • 5000 (*Not supported in ranging mode).
ACQ_SPEED?	<value> For example: '1000'	Returns the current ACQ speed used by the power meter.

RadiSwitch® commands

RadiSwitch® SPDT commands

The following table shows the default user commands for all models RadiSwitch® cards.

Models:

RSW1021B	RSW1024K
RSW1021N	RSW1022Q
RSW1022S	RSW1024Q
RSW1022K	RSW1022V
RSW1024S	RSW1024V

Command	Reply	Description
INT_RELAY_<R>_NO	'OK' or <error>	Switches the internal relay <R> to the Normally Open (NO) position With <R> = 'A', 'B', 'C' or 'D'
INT_RELAY_<R>_NC	'OK' or <error>	Switches the internal relay <R> to the Normally Closed (NC) position With <R> = 'A', 'B', 'C' or 'D'
INT_RELAY_<R>?	'NO' or 'NC' or <error>	Returns the status of internal relay <R> With: <R> = 'A', 'B', 'C' or 'D'
INT_ TEMPERATURE_<R>?	<value> For example: '10A'	Returns the temperature between the internal relays in degrees Celsius * 10 With: <R> = 'A', 'B', 'C' or 'D' NOTE: This commando is no longer supported after version 4.2.1

RadiSwitch® commands - SP6T relay cards

The following table shows the specific commands for RadiSwitch® cards with SP6T relays.

Models:

RSW1061S
RSW1061K
RSW1062S
RSW1062K
RSW1061Q

Command	Reply	Description
T_RELAY_<Value>?	See Models below	Ask the status of the relay <Value>
INT_RELAY_A_<Value>	'OK' or <error>	Set relay A to value, see models below for possible options.
INT_RELAY_B_<Value>	'OK' or <error>	Set relay B to value, see models below for possible options.

Command	RSW1061S	RSW1061K	RSW1062S
T_RELAY_<Value>?	Value = A	Value = A	Value = A or B
INT_RELAY_A_<Value>	Value = 0, 1, 2, 3, 4, 5 or 6	Value = 0, 1, 2, 3, 4, 5 or 6	Value = 0, 1, 2, 3, 4, 5 or 6
INT_RELAY_B_<Value>	Command not available	Command not available	Value = 0, 1, 2, 3, 4, 5 or 6

Command	RSW1062K	RSW1061Q
T_RELAY_<Value>?	Value = A or B	Value = A
INT_RELAY_A_<Value>	Value = 0, 1, 2, 3, 4, 5 or 6	Value = 0, 1, 2, 3, 4, 5 or 6
INT_RELAY_B_<Value>	Value = 0, 1, 2, 3, 4, 5 or 6	Command not available

RadiSwitch® commands - external relay cards

The following table shows the specific commands for RadiSwitch® cards with external relays.

Model: RSW2002E

Command	Reply	Description
EXT_RELAY_<R> _<n>	'OK' or <error>	Switches the external relay <R> to position <n> , With: <R> = 'A' or 'B' With <n> = 0 - 6 If '0' is set, No reply of the outputs are active
EXT_RELAY_<R>?	<value> or <error>	Returns the status of external relay <R> With: <R> = 'A' or 'B' Value can be: 0 - 6 If '0' is returned, No reply of the outputs are active
EXT_CURRENT?	<value>mA	Returns the total current consumption of the external relays (in mA)
EXT_VOLTAGE_<V>	'OK' or <error>	Sets the supply voltage for external relays With: <V> = '12', '24' or '28'
EXT_VOLTAGE?	<value> For example: '12V'	Returns the supply voltage for external relays
EXT_READBACK_<R>_ON	'OK' or <error>	Enables the use of indicator contacts of external relay. With: <R> = 'A' or 'B'
EXT_READBACK_<R>_OFF	'OK' or <error>	Disables the use of indicator contacts of external relay. With: <R> = 'A' or 'B'
EXT_READBACK_<R>?	'ON' or 'OFF'	Returns if the indicator contacts of relay used. With: <R> = 'A' or 'B'

RadiLink® commands | 3000 Series

General Commands

Command	Reply	Description
ID_NUMBER?	<value> For example: 1.58.95.146.21.0.0.124	Returns unique identifier number
LOCAL	'OK'	Return to local mode, the local display is used to set items.
VERSION_HW?	<value> For example: 2	Returns the hardware version
*IDN?	Raditeq, RadiLink RLK3016C, 5.2.0	Returns the ID of the RadiLink
RESET	'OK' or <error>	• Forward the command to the RLR • Clear all <error> • Clear all notifications (buzzer)
CLEAR	'OK' or <error>	• Forward the command to the RLR • Clear all <error> • Clear all notifications (buzzer)
STATUS?	<status> For example: 'READY'	The reply <status> can be: • BIAS WARNING -> On of the bias channels does not reach the set voltage. The bias voltage is 0,5 V or more below the set level. • INITIALIZING -> Laser is initializing • INT LOW -> Internal supply is below the threshold (14V warning, 13,5V buzzer, 13V off) • EXT LOW -> External supply is below the threshold (11,5V warning, 11V buzzer, 10,5V off) • READY -> Laser is on • OFF -> Laser is off • DISCONNECTED -> No remote unit found • <error>[space]<error> -> See the <error>code for the fault.

RadiLink® commands | 3000 Series | Phantom Supply

Command	Reply	Description
MEAS?[space]BIAS<channel>,CURR	<current> For example: '0.051'	Reply the measured bias current for the given <channel> in ampere. <channel> can be 1 - 8.
MEAS?[space]BIAS<channel>,VOLT	<voltage> For example: '10.000'	Reply the corrected measured bias voltage for the given <channel> in volt. <channel> can be 1 - 8.
BIAS<channel>[space]STATE,<state>	'OK' or <error>	Set the state of the bias for the given <channel>. <channel> can be 1 - 8. <state> can be ON or OFF
BIAS<channel>?[space]STATE	<state> For example: 'ON'	Reply the state of the bias for the given <channel>. <channel> can be 1 - 8. <state> can be ON or OFF
BIAS<channel>[space]SOURCE,<source>	'OK' or <error>	Set the source of the given channel. <channel> can be 1 - 8. <source> can be INT or EXT.
BIAS<channel>?[space]SOURCE	<source> For example: 'EXT'	Reply the source of the bias for the given <channel>. <channel> can be 1 - 8. <state> can be INT or EXT.
BIAS<channel>?[space]LVL,MIN	<value> For example: '5.000'	Question the minimum bias level for the given channel in volt. <channel> can be 1 - 8.
BIAS<channel>?[space]LVL,MAX	<value> For example: '12.000'	Question the maximum bias level for the given channel in volt. <channel> can be 1 - 8
BIAS<channel>[space]LVL,<level>	'OK' or <error>	Set the bias level for the given channel in volt. <channel> can be 1 - 8. <level> can be between the minimum and the maximum
BIAS<channel>?[space]LVL	<level> For example: '10.500'	Question the bias level for the given channel in volt. <channel> can be 1 - 8.
INFO?	<num>;<num>;<etc> or 'OK'	Get a list of the channels with a bias warning separated by a semicolon or 'OK' when there is no warning.
INFO?[space]<channel>	<info> with the format: 'T:<target voltage> M:<measured voltage' or 'OK'	Get bias warning info for the given <channel>. 'OK' is returned when there is no warning.

RadiLink® commands | 3000 Series | RF Supply

Command	Reply	Description
GAIN[space]<gain>	'OK' or <error>	Set the gain in dB of the system. <gain> can be 0, 20 or 40
GAIN?	<gain> For example: '20'	Question the gain settings.
RF<channel>	'OK' or <error>	Set which RF channel must be selected. <channel> can be 1 - 8.
RF?	<channel> For example: '1'	Reply which RF channel is selected. <channel> can be 1 - 8.

RadiLink® commands | 3000 Series | Power & Temperature

Command	Reply	Description
SUPPLY[space]<supply>	'OK' or <error>	Set which power supply must be used. <supply> can be INT (internal) or EXT (external)
SUPPLY?	<supply> For example: INT	Question which supply is used. <supply> can be INT (internal) or EXT (external)
POWEROFF	'OK' or <error>	Poweroff the unit (usefull when shutting down the RadiCentre for example)
PWR_OFF_TIME[space]<value>	'OK' or <error>	Set the auto poweroff time. <value> is in minutes. A value of 0 means auto poweroff disabled.
PWR_OFF_TIME?	<value> or <error>. For example '10'	Get the auto poweroff time. See 'PWR_OFF_TIME[space]<value>' for the expenation of <value>
MEAS?[space]INT	<supply> For example: '12.340'	Reply the measured voltage of the internal supply in volt.
MEAS?[space]EXT	<supply> For example: '12.340'	Reply the measured voltage of the external supply in volt.
MEAS?[space]INT,POST	<supply> For example: '12.340'	Reply the measured voltage of the internal supply after the switch in volt.
MEAS?[space]EXT,POST	<supply> For example: '12.340'	Reply the measured voltage of the external supply after the switch in volt.
MEAS?[space]RFTEMP	<temperature> For example: '35.6'	Reply the measured rf board temperature in Celsius.
TEMPERATURE?	<temperature> For example: '35.6'	Reply the measured unit temperature in Celsius.

Error codes

In the situation when an error occurs in a RadiCentre® system, an error code will be either displayed on the touch-screen of the RadiCentre® and/or send to the (RadiMation®) control software.

For undocumentend or reserverd error codes, please contact your reseller for further assistance and support.

Error code structure

The RadiCentre® or RadiMation® can display different error. These error are not by definition an error/fault of the RadiCentre®, but it can also be of an instrument that is attached or plugged into the RadiCentre®. The error codes all start with a unique hundred number which shows the relevant source of the error. The range of each of the error codes is shown below:

Range error codes	Device type	Device code
1-99	Generic error codes	n/a
100- 199	RadiLink®	RLKxxxx
200-299	RadiSwitch®	RSWxxxx
500-599	RadiField®	RFSxxx
600-699	RadiPower®	RPRxxxx
700-799	RadiSense® 2000 Series	RSS20xxx & LPS20xxx
800-899	RadiControl®	n/a
900-1199	Legacy Products	n/a
1200-1299	RadiAmp®	RPRxxxx
1300-1399	RadiCentre®	CTRxxxx
1500-1599	RadiGen®	RGNxxxx
1600-1799	Legacy Products	n/a
1800-1899	RadiSense® 3000 Series	RSS30xxx & LPS30xxx

Generic error codes

Range <error> codes	Description
1	Command received is unsupported.
2	Parameter in command too high. Refer to manual for correct setting.
3	Parameter in command too low. Refer to manual for correct setting.
4	Invalid parameter detected in command. Refer to manual for correct setting.
5	Buffer overflow detected. Refer to manual for correct setting.
6	Action requested is already in progress.
7 - 28	Reserved
29-34	Hardware failure, please contact your reseller for further assistance and guidance.
35	Time out on requested action.
36 - 37	Hardware failure, please contact your reseller for further assistance and guidance.
38 - 49	Reserved

Generic error codes - software update protocol

Range <error> codes	Description
50	Wrong command - Command not supported by the software update protocol
51	Time out - Not all command data is received within the timeout period
52	Memory fault – An erase verify or program verify in Flash memory failed
53	Not allowed – Arguments of the command are not allowed
54	Command CRC invalid – The CRC check over the command data failed
55	Block CRC invalid – The CRC check over the memory block failed

RadiLink® | 3000 series | error codes

Range <error> codes	Description
112	Laser off
114	error with the Digital link
115	error with the Analog link
116	error with the Power Laser 1
117	error with the Power Laser 2
118	error due to V Battery low
161	RLK3086R laser is off
162	RLK3016C communication to the RLk3086R is busy
163	RLK3016C has turned off the laser
164	RLK3086R laser turned off through too high temperature
165	RLK3086R laser turned off through too long no communication from the RLK3016C
179	RLK3086R external supply too low
188	RLK3016C has not detected the RLK3086R
189	RLK3086R Battery low

RadiSwitch® - error codes

Range <error> codes	Description
201	error Switch NC
202	error Switch No
203	error Temperature NC
204	error Temperature No
205	error Interlock
209	error extern module
210	error no extern Connected
211	error status unknown
212	error current limit
213	28V Not Present
214	Interlock 1
215	Interlock 2
216	Interlock 3
217	Interlock 4
218	Interlock 5
219	Interlock 6
220	RadiSwitch error switch temperature NC
221	RadiSwitch error switch temperature NO

RadiField® error codes

Range <error> codes	Description
500	Already in standby mode
501	Already in operate mode
502	Already in off mode
503	Not in standby
504	Hardware failure
505	Reserved
506	Out of Specification
507	Power Measurement, frequency not set
508	Power measurement, over range
509	Power measurement, under range
510	Power Measurement, no calibration data
511	No error logs available
512	reserved
513	First send the startup command
514	Already started
515	Regulating FET
516	3V3 out of range
517	5V out of range
518	12V out of range
519	-12V out of range
520	50V out of range
521	Driver 3 current out of range
522	Final Current out of range
523	Temperature out of range
524	Power out of range
525	Driver 3 fet adjustment error
526	Final fet adjustment error
527	Going to standby
528	Going to operate
529	Going to of
530	Oven too cold
531	Oven too hot
532	Calibrating busy

RadiField® error codes - continued

Range <error> codes	Description
533	Power not updated
534	Driver 3 Supply volt out of range
535	Driver 2 current out of range
536	Drive 2 Adjustment error
551	Communication busy
552	Amplifier error
553	Amplifier wrong *IDN
554	Amplifier wrong answer
555	Amplifier time-out
556	Amplifier wrong mode
557	No amplifier connected
558	Received command length are no digits
559	Received command length incorrect
560	Communication amplifiers failed
561	Polarizer not detected
562	Polarizer current too high
563	Polarizer H-bridge fault
564	Polarizer strength too high
565	Polarizer speed too low
566	Polarizer wrong direction
570	The external unit is not connected. Communication test failed also on 50V
571	Communication Timeout - The Value isn't updated (through the data frame) within the timeout time.
572	One or more amplifiers are in error mode but in status no error is found
573	Received invalid data of the backplane in the sync command (50V or data frame)
574	Maximum number of retries reached on communication over the link
575	Communication busy
576	Communication timeout
577	Power supply already on
578	Power supply off
579	Incorrect impedance
580	Impedance short
581	Impedance open
582	External unit is not connected. Communication failed on 5V.

RadiField® - error codes - continued (2)

Range <error> codes	Description
583	Reserved
584	SW Update – 50V backplane not of
585	SW update – 50V backplane not on
586	SW Update – software downloads not started
587	SW update – Sync retries failed
588	SW update – reboot unit failed
589	SW update – amplifier to off mode error
590	SW update – transparent mode on error
591	SW update – transparent mode off error
592	SW Update – binary frame error
593	SW Update -Binary frame Header error
594	SW update – Binary frame header size error
595	Illegal backplane command length
596	Length error – received command length no digits
597	Length error – received command length incorrect
598	Mains on sequence error – BPL 50V switch error
599	Mains on sequence error – AMP startup error.

RadiPower® - error codes

Range <error> codes	Description
601	error frequency not set
602	error over range
603	error under range
604	No calibration data
605	External trigger pin error (RPR3000 Series only)
606	Command not supported in the mode (RPR3000 Series only)
607	Combination measure speed and time not allowed. On 1MS/s the maximum measure time ins 32 seconds. At 5MS/s the maximum measure time is 6.2 seconds. (RPR3000 Series only)

RadiSense® - error codes

Range <error> Codes	Description
700	Wrong identifier
701	Invalid target
702	Probe invalid reply
703	No update in time (Field is questioned but there is no valid field of the probe received in time.)
704	Invalid data frame received
705	Probe not connected
706	MSP interlock tripped
707	Laser off through time out (Communication time out or startup probe timed out that caused laser to shut off)
708	error during justation store
709	Software update fault
710	Flash fault
711	Serial Number fault
712	PWM fault
713	ADC fault
714	Binary data fault
715	Dump not received 'OK'
716	Card type unknown
717	Probe type unknown
718	Safety controller card type fault
719	Safety controller probe type fault

RadiSense® - error codes continued

Range <error> Codes	Description
723	No valid calibration data available
724	Frequency lower than calibration table
725	Frequency higher than calibration table
726	No points stored
728	Calibration fault
729	Temperature correction fault
730	Flash fault
731	Serial number fault
734	Not allowed for probe type
737	Data frame CRC incorrect
738	Start aborted by user
739	Command not supported in software update mode
740	MSP too long no communication probe (longer than 5 ms)
741	SC IDN fault
742	SC HW version fault
743	SC not received start on RS232
744	SC not received start on USB
745	SC not received start on button
746	SC switch 2 not high
747	SC switch 2 not low
748	MSP switch 1 fault
749	MSP switch 2 fault
750	SC not responding
751	reserved
752	SC invalid reply
753	Laser turned on
754	3V3 out of range
755	5V out of range
756	12V out of range
757	Laser current out of range

RadiSense® - error codes continued (2)

Range <error> Codes	Description
758	Laser temperature out of range
759	Trigger not received
760	SC (Safety Controller) - too long no communication with Probe
761	SC (Safety Controller) - MSP switch 1 not high
762	SC (Safety Controller) - MSP switch 1 not low
763	SC (Safety Controller) - switch 1 fault
764	SC (Safety Controller) - switch 2 faults
765	SC (Safety Controller) - MSP not questioning
766	SC (Safety Controller) - interlock tripped
767	SC (Safety Controller) - Trigger received outside window
768	SC (Safety Controller) - Start source not received
769	SC (Safety Controller) - Trigger not received
770	SC (Safety Controller) - Current out of limits
771	SC (Safety Controller) - 3V3 LPC out of limits
772	SC (Safety Controller) - 3V3 MSP out of limits
773	Startup sequence busy, command currently not allowed
774	Not supported by probe model
775	Received during start invalid data

RadiAmp® - error codes

Range <error> Codes	Description
1200	Already in standby
1201	Already in operate
1202	Already in off
1203	Not in standby
1204	Out of specification
1206	Startup first
1207	Already started
1209	3V3 out of range
1210	5V out of range
1211	12V out of range
1212	-12V out of range
1213	24V out of range
1214	37V out of range
1215	Driver current out of range
1216	Final current out of range
1217	Temperature out of range
1218	Adjusting driver
1219	Adjusting final
1220	Going to standby
1221	Going to operate
1222	Going to off
1223	RadiAmp too cold
1224	RadiAmp too hot
1225	Calibrating busy

RadiCentre® - error codes

Range <error> Codes	Description
1300	Software upgrade in progress
1301	Slot Preserved for 2090 Emulation mode
1302	RadiCentre interlock tripped
1303	RadiCentre is still initializing

RadiGen® - error codes

Range <error> Codes	Description
1500 t/m 1525	Reserved

RadiSense® Ultra - error codes

Range <error> Codes	Description
1800	Probe in measurement mode, configuration currently not possible.
1801	Action cannot be performed as the laser is not turned on.
1802	Action cannot be performed, storing data in the probe.
1803	error detected in probe reply.
1804	Fault detected in laser hardware.
1805	Laser temperature too high.
1807-1811	Incorrect configuration, please contact your reseller for further assistance and guidance.
1812	Hardware failure, please contact your reseller for further assistance and guidance.
1813	Interlock issue detected. Please reconnect the interlock.
1814	Hardware failure, please contact your reseller for further assistance and guidance.
1815	Laser current too high. Verify fiber optics connection. Refer to the manual for cleaning instructions or reach out to your reseller for assistance.
1816	Laser current exceeds limit. Verify fiber optics connection. Refer to the manual for cleaning instructions or reach out to your reseller for assistance.
1817	The probe is initializing too quickly after the laser turns on. Please increase your wait time before attempting communication.
1818-1820	Update failed, contact the reseller for further assistance and guidance.
1821	No pulse edge detected during the pulse measurement
1822	Software malfunction detected, please contact your reseller for further assistance and guidance.
1823-1826	Laser safety protection tripped, verify fiber optics connection. Refer to the manual for cleaning instructions or reach out to your reseller for assistance.
1827 - 1828	Hardware failure, please contact your reseller for further assistance and guidance.
1829	The filter setting is too low for the current measurement configuration.
1830	Laser safety protection tripped, verify fiber optics connection. Refer to the manual for cleaning instructions or reach out to your reseller for assistance.
1831	Command not possible during ‘reverberation statistics mode’
1832	No trigger detected; adjust trigger level and/or verify the applied signal.

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