

Receive Line Monitor (RLM)

- Identify issues before they become big problems through remote, continuous monitoring of the receive antenna line -- measures return loss at a customer-specified frequencies (3) as well as device temperature
- Easily compare performance to as-installed performance
- Antenna line return loss frequency sweep
- High level carrier logging
- Installed in-line with the receive antenna
- Available in VHF, 220 MHz, UHF, 7/800 MHz, and 900 MHz
- Compact form factor simplifies the installation process and helps save rack space
- Data is accessed via an integrated web server and SNMP
- Alarms are user configured via Ethernet or SNMP



RLM front view



RLM back view

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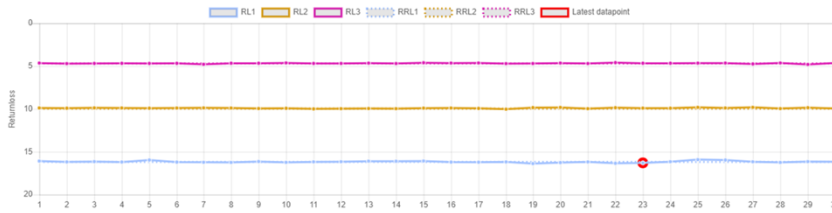
P/N *)	Frequency range	Power supply	Conn. Rx / ANT
CP01164	120-140 MHz	AC	N-f / N-f
CP01172	135-155 MHz	AC	N-f / N-f
CP01131	150-170 MHz	AC	N-f / N-f
CP01132	150-170 MHz	DC	N-f / N-f
CP01153	210-230 MHz	AC	N-f / N-f
CP01154	210-230 MHz	DC	N-f / N-f
CP01125	340-360 MHz	AC	N-f / N-f
CP01143	340-360 MHz	DC	N-f / N-f
CP01175	380-400 MHz	DC	N-f / N-f
CP01166	400-420 MHz	DC	N-f / N-f
CP01165	410-430 MHz	DC	N-f / N-f
CP01163	410-430 MHz	AC	N-f / N-f
CP01122	450-470 MHz	AC	N-f / N-f
CP01130	450-470 MHz	DC	N-f / N-f
CP01170	450-470 MHz	DC	N-m / N-f
CP01144	470-490 MHz	DC	N-f / N-f
CP01177	470-490 MHz	AC	N-f / N-f
CP01133	797-817 MHz	AC	N-f / N-f
CP01171	797-817 MHz	DC	N-f / N-f

Specification	RF part	Specification	RLM
Insertion loss	<0.15 dB	Power supply (ext.)	AC: 90-230V, 10W DC +/- 36 -72V, 10 W
Return loss range	0-20 dB	Interfaces	Integrated web-server SNMP v2C (with MIB file)
ANT input level	<20 dBm	Alarm output	Form-C dry contact
Measurement pulse	-40 dBm, 50 ms	Functions and alarms	Rx antenna return loss (RL) Rx antenna reference Rx antenna RL sweep Rx antenna RL sweep ref. HLC (>-80 dBm) logging In 6.25 kHz channels Device temperature User and Admin logins SNTP Firmware update Factory test data
Pulse repetition	3-3600 sec. (1 sec. steps)	Features	
Input return loss	>20 dB		
Output return loss	>20 dB		
Tx-power	Max. 100W		
Operating temp.	-25°C to 60°C		
Operating env.	Indoor		
Connectors	See table		
Dimensions	163x177x33 mm (w/o bracket)		
Weight	3 lbs		
Outline	OD23470		
User Guide	UG23184		
MIB	SU21400		

*) For units with 4.3-10 female connectors, please add 4310 suffix to the part number; CP011314310 for CP01131 having 4.3-10 female / female connectors

Status

Frequency	VSWR / RL	Reference VSWR / RL	Timestamp	Action
470.0	1.36 / 16.29	1.37 / 16.18	2022-04-08 01:59:46	Set ref.
480.0	1.94 / 9.90	1.93 / 9.96	2022-04-08 01:59:47	Set ref.
490.0	3.82 / 4.66	3.79 / 4.69	2022-04-08 01:59:47	Set ref.



Board temperature 26.5	Time to next measurement 0	Wideband RX RSSI <-40.0 dBm	System status OK
Test mode [Activate]	Status Inactive	Meas mode Idle	

Description

Status page.
Temperature readings are in Celsius.

VSWR / Returnloss:
White = no alarm
Gold = Warning active
Red = Alarm active

Set reference value, for each frequency. Used to track value changes over time.

Board temperature:
White = no alarm
Gold = Warning active
Red = Alarm active

Line chart shows RL history, last 30 samples.

Test mode:
30 measurements, 1s interval. Automatically returns to normal mode.

Parameter configuration:
Warning/Alarm threshold configuration. Setting measurement frequency = 0, disables measurement. Set Returnloss measurement interval in seconds. Setup noise measurement properties. Choosing noise bandwidth will impact possible measurement interval, due to noise measurement time.

Parameter configuration:

Setting	Value
RL warning threshold (abs.)	9.0
RL alarm threshold (abs.)	6.0
Measurement frequency 1 (470.0 - 490.0) MHz	470.0
Measurement frequency 2 (470.0 - 490.0) MHz	480.0
Measurement frequency 3 (470.0 - 490.0) MHz	490.0
Measurement interval (2 - 3600s)	5
Noise meas. on/off	<input type="checkbox"/>
Noise meas. start frequency MHz	470.0
Noise meas. bandwidth MHz	10.0
Noise sweep time (s)	80.0
Board temperature warning level (0 - 100C)	60
Board temperature alarm level (0 - 100C)	80

Alarm relay config	
<input checked="" type="checkbox"/>	VSWR / Returnloss
<input checked="" type="checkbox"/>	Board temp
<input checked="" type="checkbox"/>	Input overload
<input checked="" type="checkbox"/>	System fail
[All On] [All Off]	
[Submit new setting]	

Alarm relay configuration:
Checked alarms will activate relay alarm.

Device information:
Serial number information.

Boot counter is increased at each device power up.

Device information:

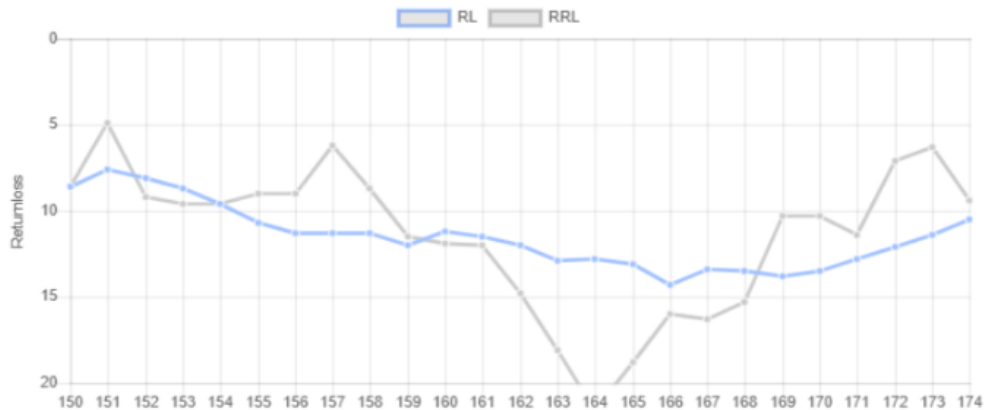
Serial number	Firmware
C0272902100122090000922495	ETH SU22498-4 DSP SU22563-5
Boot counter	
453	

Web interface status page (UHF example)

Dashboard

Home
Status
Sweep
Network config
SNMP config
System event log
Firmware upgrade
Test information

Returnloss frequency sweep



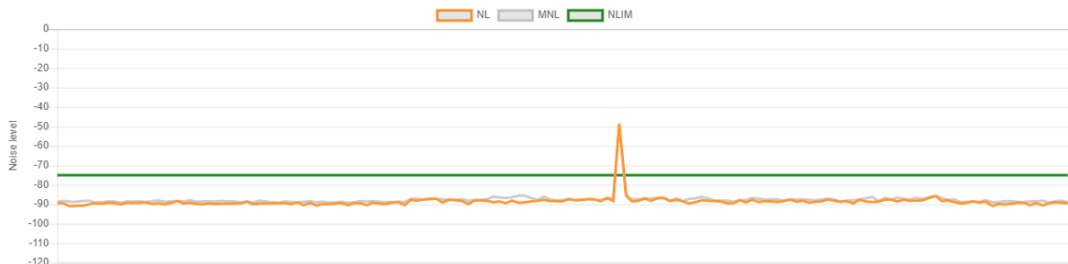
Reference Sweep

Description

Sweep page.
Sweeps are for test purpose.
Activating a sweep, results in one sweep.
Automatically returns to single frequency measurement mode.

Antenna return loss sweep (VHF example)

Noise level sweep



Clear noise data Start new sweep Measurement in progress

Start freq:	<input type="text" value="470000000"/>	<input type="range" value="0"/>
Stop freq:	<input type="text" value="471000000"/>	<input type="range" value="100"/>
Noise lim:	<input type="text" value="-75"/>	
Timestamp:	2022-04-08 02:22:21	

Measurements above noise limit: NL(1), MNL(1) ^	
NL (Hz, dBm)	MNL (Hz, dBm)
470556250, -48.5	470556250, -48.5

High level carriers' detection (UHF example)