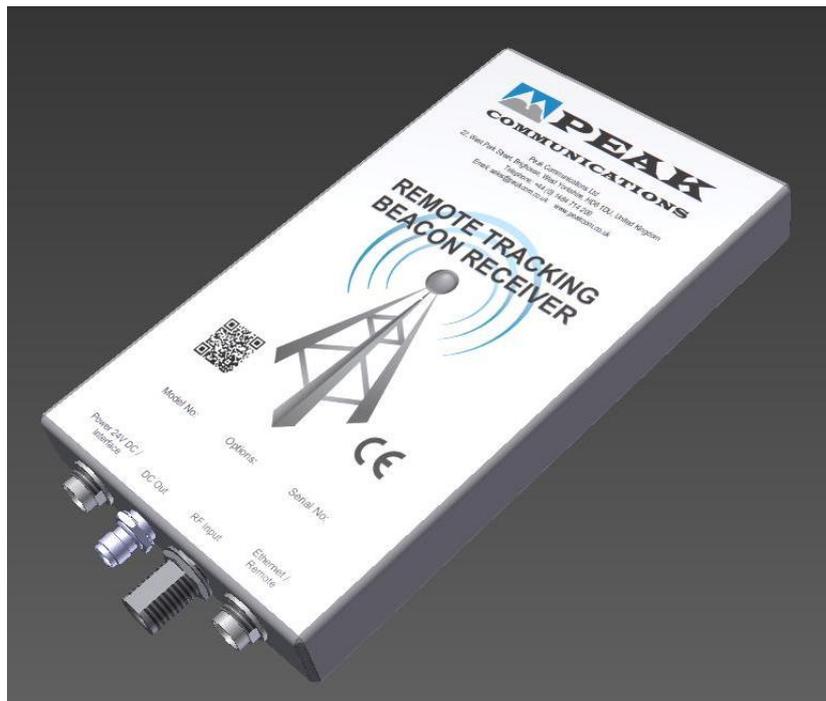


RTR50

Remote Mounted, 'CW' Beacon Tracking Receiver



The **RTR50** is a next generation remote mounted tracking receiver, designed specifically to track and measure CW beacons from commercial satellites. Primarily an L-Band input receiver, the unit is designed to be used for telemetry and control, typically in earth stations using medium to large antennae.

The receiver is designed as a versatile and easy-to-use unit, with the primary user interface being via remote control.

The tracking band center frequency can be set accurately using the 1kHz step size Direct Digital Synthesiser (DDS) system. The unit uses a 2kHz Phase Locked Loop (PLL) system to perform signal acquisition and level measurement through coherent detection. The search facility sweeps the frequency to locate a signal in the acquisition band and if a signal is detected the frequency is locked immediately to this beacon. A secondary search is then initiated to look for a more intense signal within the search band. If one is detected then the locked tracking frequency is modified. The process repeats until the largest signal is found in the search band and the anti side-band device is then disabled.

A log amplifier is used to provide an output voltage representing the input power in logarithmic scale, in effect making the input power to output voltage log-conformal. The sensitivity of the logarithmic output is user selectable.

Peak Features

-  Rugged weatherproof housing
-  Fast signal locking
-  Sophisticated digital sideband rejection system
-  Logarithmic output range, user selectable
-  Optional BDC/ LNB Reference and Powering



RTR50 – Typical Specification

L-Band Input

| | |
|-----------------------|--|
| Frequency Range | 950-2,150MHz |
| Connector | N-type (f), 50Ω |
| Input return loss | 15dB typical |
| Beacon input level | -70dBm nom -60dBm max |
| Aggregate power level | -20dBm max |
| Option 6; | Increases the above power levels by 20dB |

DC Output

| | |
|------------------|--|
| Voltage Range | ±10VDC |
| Option 3a; | 0-10VDC |
| Option 3b; | ±5VDC |
| Slope | Logarithmic, 0.5dB/V, 2dB/V, 5dB/V, 10dB/V, user selectable |
| Connector | TNC (f) |
| Impedance | 0Ω (ideal voltage source, maximum current 5mA) |
| Adjustment range | Output adjustable to 0V for input power level between -60dBm & -100dBm |

Transfer Characteristics

| | |
|------------------------------|--|
| Post-detection time constant | 150mS |
| Step Size | 1kHz |
| Search range | ±20kHz, ±50kHz, ±100kHz, ±200kHz, ±500kHz, user selectable |

Tracking Parameters

| | |
|------------------------------|---------------------------------|
| PLL noise (IF) bandwidth | 2kHz, fixed |
| Threshold lock reacquisition | 35dBHz |
| Average search time | 3s (for search range of ±20kHz) |

BDC/ LNB Drive (option 8)

| | |
|------------------|-------------------------------|
| Output reference | 10MHz at 0dBm nominal |
| DC supply | +22.5 volts regulated at 0.5A |
| Connection | Fed on L-band cable |
| Control | Switchable via remote control |

Mechanical

| | |
|--------------|------------------------------|
| Width | 145mm (6") |
| Height | 250mm (10"), plus connectors |
| Depth | 30mm (1.2") |
| Mounting | Rear blind fasteners, M4 |
| Construction | Aluminium, IP66 rated |
| Weight | Approx. 1kg (2lbs) |

Environmental

| | |
|----------------|----------------------------|
| Operating temp | -10° to +50°C |
| EMC | EN55022 part B & EN50082-1 |
| Safety | EN60950 |

Power Supply

| | |
|------------|---|
| Voltage | 24VDC |
| Power | 25 Watts max |
| Connection | Via 5-pin 'alarms' interface connection |

Control System

| | |
|----------------|---|
| Remote control | Ethernet; Embedded web server & SNMP network management support |
| Option 9 ; | RS232/RS485 port replacing Ethernet control |
| Connection | 8-pin circular weatherproof (mating part supplied) |
| Alarms | PSU fail External alarm inputs Summary failure relay (form C) Out of lock alarm (form C) |
| Option 7; | LED for 'DC power' status indication |
| Connection | 5-pin circular weatherproof (mating part supplied) |

Options

- 3a) Output voltage range 0-10VDC
- 3b) Output voltage range ±5VDC
- 6) Higher input power level
- 7) 'DC power' status indication
- 8) 10MHz reference and DC drive for BDC/ LNB
- 9) RS232/ 485 interface, replacing the standard Ethernet interface

Note; some of the above options have an impact on the general performance specification, factory guidance should be sought if thought to be critical.



Peak Communications reserves the right to alter the specifications of this equipment without prior notice. RTR50-210812.

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