RCUH50 Series

1+1 & 2+1 Redundancy Control for Remote BUC/ BDC/ LNB/ LNA Units

RCUH50, 52 for use with:
- PBU/ PBD series block converters and general LNB units
RCUH50(Ka), 52(Ka) for use with:
- PBU(Ka)/ PBD(Ka) series block converters

The RCUH50 1+1 & RCUH52 2+1 redundancy control units are special versions of the versatile RCUH100/200 redundancy switch units and are presented in a 1U high 19-inch rack mount chassis. The RCUH50, 52 units are designed to power and monitor remote mounted low noise blocks (LNB’s), low noise amplifiers (LNA’s), block up converters (BUC’s) or block down converters (BDC’s) and drive remote mounted coaxial or waveguide switches. A range of 10MHz reference signal generation, locking and pass through options as well as DC supply can also be provided to drive the BUC/ BDC/ LNB/ LNA units.

The RCUH50, 52 units can be controlled from the front panel user interface (local mode) or remotely via the RS232/ 485 or optional Ethernet link to a host computer (remote mode). In remote mode, the on-line unit can be selected and monitored whilst keeping switch-over automatic in case of failure. An internal L-band coaxial switch changes as the active converter unit is selected.

In AUTO mode, the unit monitors the converter/ amplifier alarm signals and if a fault condition develops within the on-line unit, the RCUH50 series automatically switches traffic to the standby unit.

The flexibility of the design allows for customization, so please consult the factory if the features that you require are not shown on this data sheet.

Peak can supply external switches and cabling, for more details please consult the factory.

Peak Features

- Monitoring of off-line LNB/ BDC L-band output (standard for RCUH50 only)
- Spare drive input for off-line BUC, for test purposes (standard for RCUH50 only)
- Dual mains input & redundant power supplies fitted as standard
- Fully compatible with Peak PBU/ PBD block up/ down converters
- Remote control fitted as standard, with optional Ethernet remote
- Optional reference generation, external reference locking or ‘pass-through’ to LNB/ BUC/ BDC
- Compatible with most makes of LNB/ BUC/ BDC for legacy system upgrades
- L-Band variable attenuator options available
- Dual-Voltage & 22kHz tone capability for multi-range LNB switching
- Compatible with Peak PNB series 1+1 & 2+1 outdoor RF assemblies
RCUH50, 52 Units – Typical Specification

L-Band Interfaces

Connections
- SMA (f), 50Ω
- Option 12a: F-Type (f), 75Ωm interfaces from LNB’s
- Option 12b: F-Type (f), 75Ωm system output interfaces
- Option 12c: BNC (f), 75Ωm interfaces from LNB’s
- Option 12d: BNC (f), 75Ωm system output interfaces

Monitor
- Provides an L-band monitor for the off-line LNB/ BDC output (RCUH50 only)

Spare BUC drive
- Provides a spare L-band input to drive the off-line BUC (for test purposes, RCUH50 only)

Note: off-line monitor/ drive for the RCUH52 unit available on request.

External Co-axial/ Waveguide Switch Interface

Connection
- D-type, 15-way
- Drive type: +12VDC pulsed, latching, and indicators

Switch
- Optional supply of external switches (please consult factory for details)

Single Switch Insertion Loss (Typical)

L-Band 0.15dB
C-Band 0.25dB (Option 6)
X-Band 0.3dB (Option 6)
Ku-Band 0.35dB (Option 6)
DBS-Band 0.4dB (Option 6)
Ka-Band 0.5dB (Option 6)

BUC/BDC/LNB/LNA DC drives

DC supply
- Factory settable, typically +22.5V regulated at 0.65A (±27V@0.5A nom. for Ka-Band)

Note: for higher current or multi-range dual-Voltage & 22kHz tone switching, please consult the factory with LNB type.

Connection
- Option 8: Fed on L-band interface

Internal Reference Generator for LNB/BUC/BDC (Option 4)

Internal reference generator, fed to BUC/ BDC/ LNB’s via L-band interfaces (option 4b provides the reference output as a separate discrete connection). Includes an external reference input connection with automatic detection and locking facility.

Output
- Option 4b: 10MHz at 0dBm nominal on L-Band

Stability:
- Allan deviation: <5 x 10⁻¹² over 1s
- Ageing: <3 x 10⁻⁹ per day, <3 x 10⁻⁶ per year
- Temp stability: <2 x 10⁻⁶ over -10 to 50°C

External Reference ‘Pass Through’ (Option 5)

For situations where an external reference signal is available on the system L-Band input (BUC systems) or output (BDC/ LNB systems). Internally splits the reference signal and passes it to the BUC/ BDC/ LNB units via the L-Band interfaces.

Note: for RCUH52 2+1 system, L-Band input source from channel ‘A’ only.

Input
- Option 5a: 10MHz at +3dBm min on L-Band

Electronically Variable L-Band Attenuation (Option 11)

Attenuators can be fitted to either the common L-Band ‘system interface’ for general gain control, or to each of the individual L-Band paths to the outdoor environment for balancing cross site path losses.

Attenuation range 30dB nominal
Step size
- Option 11a: 0.5dB
- Option 11b: 0.1dB

Control Local & remote

Mechanical
- Width: 19”, standard rack mount
- Height: 1U (1.75”)
- Depth: 420mm (16.5”), plus connectors
- Weight: 4.0kgs (8.8 lbs)
- Construction: Aluminium chassis

Environmental
- Operating temp: 0 to +50°C
- Option 6e: -40 to +50°C (for co-axial switch, option 6)
- EMC: EN 55022, part B & EN 50082-1
- Safety: EN 60950

Power Supply (dual, redundant)

Connection
- IEC (dual feed cables provided)
- Voltage: 90-264VAC
- Frequency: 47-63Hz
- Power: 50 Watts max.

Control System

Remote control
- RS232/ 485 port
- Option 9: Ethernet; embedded web server & SNMP network management support.

Interface connector
- 15-way, D-type to redundant units and external switch
- Option 7: HPA summary alarm inputs for ‘chain redundancy’ control applications

Options

1) Cable assembly for use between RCUH50 and outdoor BUC/ BDC units (includes L-Band and control cables, plus RF cables if option 6 is ordered)
2) Custom front panel overlay
4) Internal reference generator to drive BUC/BDC/LNB’s via the L-Band interface
4b) External reference output as a BNC interface
5) External reference pass-through on L-Band system
5a) External reference pass-through with BNC input
6) PBR50, 52 remote mounted co-axial SHF switching in a weatherproof housing for use with BUC’s
6e) Low temperature operation to -40°C for remote mounted co-axial switch
7) HPA summary alarm inputs for ‘chain redundant’ applications (BUC system).
8) BUC/ BDC/ LNB DC drives via L-Band interfaces
9) Ethernet interface with embedded web server & SNMP
10a) +12VDC external waveguide switch drive
10b) +24VDC external waveguide switch drive
11a) Attenuator with local & remote control, 30dB stepped 0.5dB
11b) Attenuator with local & remote control, 30dB stepped 0.1dB
12a) F-Type (f), 750 LNB L-Band input interfaces
12b) F-Type (f), 750 LNB L-Band input interfaces
12c) BNC (f), 750 LNB system output interface
12d) BNC (f), 750 L-Band system output interface
14) Additional switching for simultaneous output dual-range devices

Rear panel view (typical)