PARADISE DATACOM
A Teledyne Technologies Company

VSAT
Dual Redundant Transceiver Systems

▲ RCPD-1100 controller with
1:1 BUC Plate Assembly ►
and 1:1 LNB Assembly ▼

Description

The Paradise Datacom family of vBUCs can be configured in a variety of custom systems to meet any redundant transceiver system application.

Redundant systems are available in the following output power levels:

25W, 50W	C-Band
10W, 25W, 35W	X-Band
10W, 16W, 25W, 40W	Ku-Band

Chain 1:1 redundancy is available with the use of a RCPD-1100 Dual Redundant Controller.

FEATURES

- Single box BUC output power levels to:
  - 50W C-Band
  - 35W X-Band
  - 40W Ku-Band
- Wide Range of Interface Capability including:
  - FSK Control
  - RS 485
  - Ethernet
- Output Power Detection
- Adjustable Gain
- Automatic detection of external reference power and frequency
- Multiple external reference frequency operation including: 5, 10, 20, 25 & 50 MHz

OPTIONS

- 6 Amp External Bias Tee for IFL Bias feed
- High Stability internal 10 MHz reference
- AC Power Supply
- 24 VDC operation on selected models
- TX & RX Reject Filters
- Extended Bands
- LNB Power & Reference Port

SPECIFICATIONS

- 1:1 BUC Plate dimension: 18 x 18.3 x 12.0 inches 457 x 465 x 306 mm (with AC Power Supplies)
- 1:1 Plate weight: 53.5 lbs. / 24.3 kg. (with AC Power Supplies)

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Due to signal losses inherent in redundant system configurations, the output powers and gain levels are slightly reduced compared with a single unit's specifications. The following tables show the typical system output powers and gain levels for Paradise Datacom redundant vBUC systems.

C-Band Redundant System Output Power Levels

PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range		*	5.850 to 6.425	GHz
Output Power @: Saturation/P_{1dB} (Guaranteed minimum)	 VBUCC25AAXXXXX VBUCC50AAXXXXX	Gain 69 dB 72 dB	P_{sat} / P_{1dB} 44.25/43.75 (26.6/23.7) 47.25/46.75 (53.1/47.3)	 dBm (W) dBm (W)
Power Requirements 48 VDC Input @ max current draw per unit	 VBUCC25AAXXXXX VBUCC50AAXXXXX	24 VDC current 6.5 11.5	48 VDC current 3.0 5.6	 Amps Amps

* Available with Extended band frequencies; De-rate output power linearly by 1 dB over 6.425 - 6.725 GHz.
For full vBUC specifications, see the vBUC Specification Sheet, Drawing Number 205629.

X-Band Redundant System Output Power Levels

PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range			7.90 to 8.40	GHz
Output Power @: Saturation/P_{1dB} (Guaranteed minimum)	 VBUCX10AAXXXXX VBUCX25AAXXXXX VBUCX35AAXXXXX	Gain 65 dB 69 dB 70 dB	P_{sat} / P_{1dB} 40.25/39.75 (10.6/9.4) 44.25/43.75 (26.6/23.7) 45.25/44.75 (33.5/29.9)	 dBm (W) dBm (W) dBm (W)
Power Requirements 48 VDC Input @ max current draw per unit	 VBUCX10AAXXXXX VBUCX25AAXXXXX VBUCX35AAXXXXX	24 VDC current 4.2 9.6 11.0	48 VDC Current 2.0 4.7 5.2	 Amps Amps Amps

For full vBUC specifications, see the vBUC Specification Sheet, Drawing Number 205629.

10W - 25W Ku-Band Redundant System Output Power Levels

PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range		*	14.0 to 14.5	GHz
Output Power @: Saturation/P_{1dB} (Guaranteed minimum)	 VBUCK10AAXXXXX VBUCK16AAXXXXX VBUCK25AAXXXXX	Gain 65 dB 67 dB 68 dB	P_{sat} / P_{1dB} 40.25/39.75 (10.6/9.4) 42.75/41.75 (18.8/15.0) 43.75/42.75 (23.7/18.8)	 dBm (W) dBm (W) dBm (W)
Power Requirements 48 VDC Input @ max current draw per unit	 VBUCK10AAXXXXX VBUCK16AAXXXXX VBUCK25AAXXXXX	24 VDC current 6.2 9.1 10.1	48 VDC Current 3.0 4.5 5.0	 Amps Amps Amps

* Available with Extended band frequencies; De-rate output power linearly by 1 dB over 13.75 - 14.0 GHz.
For full vBUC specifications, see the vBUC Specification Sheet, Drawing Number 205629.

40W Ku-Band Redundant System Output Power Levels

PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range		*	14.0 to 14.5	GHz
Output Power @: Saturation (Guaranteed minimum)	VBUCK40AAXXWXX	Gain 71 dB	P_{sat} 45.75 (38)	 dBm (W)
Power Requirements Input Power @ max current draw per unit	VBUCK40AAXXWXX	24 VDC current N/A	48 VDC Current 5.5	 Amps

* Available with Extended band frequencies; De-rate output power linearly by 1 dB over 13.75 - 14.0 GHz.
For full vBUC specifications, see the 40W Ku-Band vBUC Specification Sheet, Drawing Number 207684.

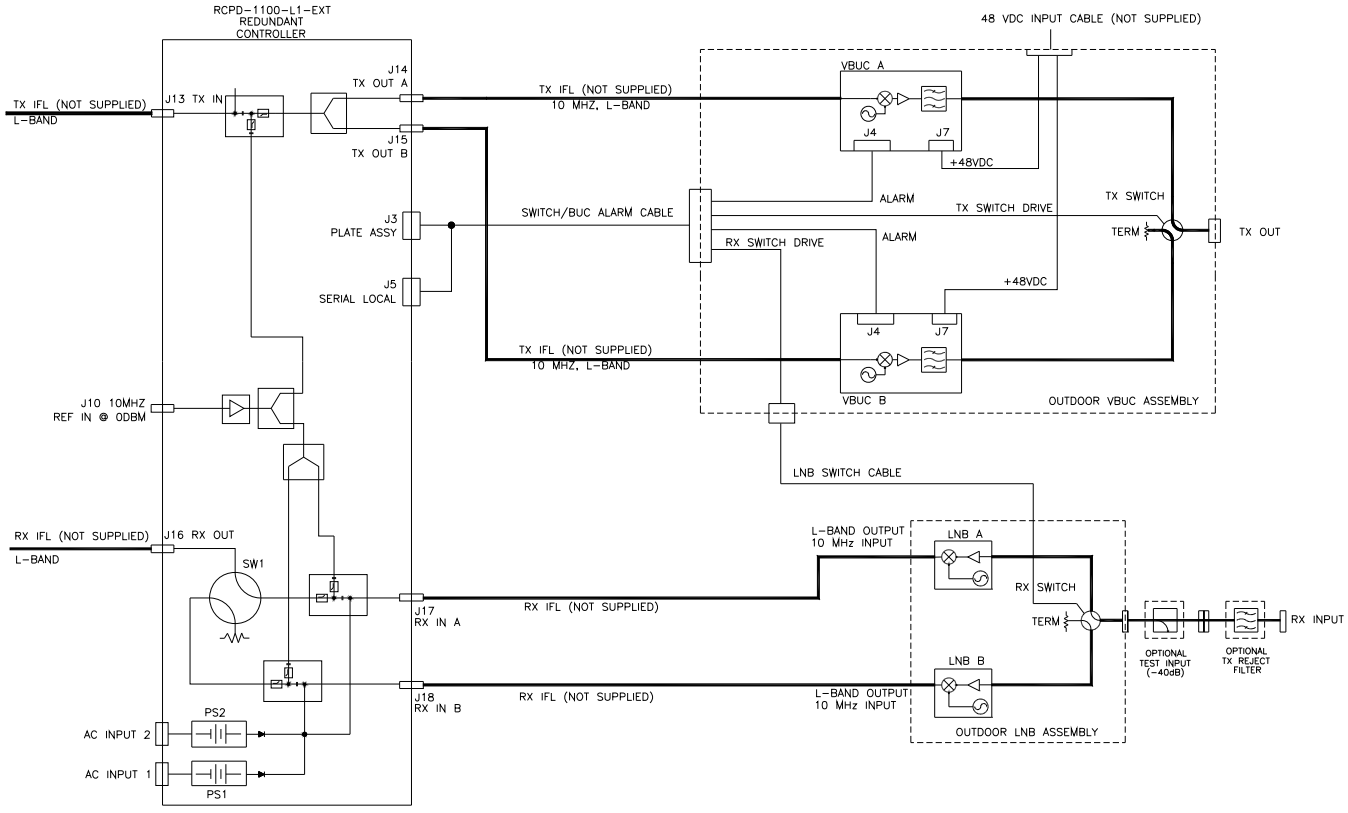
1:1 Redundant Transceiver Systems (Transmit & Receive)

Paradise Datacom can configure a complete transceiver system, utilizing the vBUC redundant system, a LNB plate assembly and a system control panel.

The RCPD-1100-LX Dual Redundant Control Panel acts as a hub between the indoor and outdoor components of the system. The controller monitors the vBUC plate assembly and the current draw of the system LNBs, and controls the Tx switch on the vBUC plate and the Rx switch on the LNB plate.

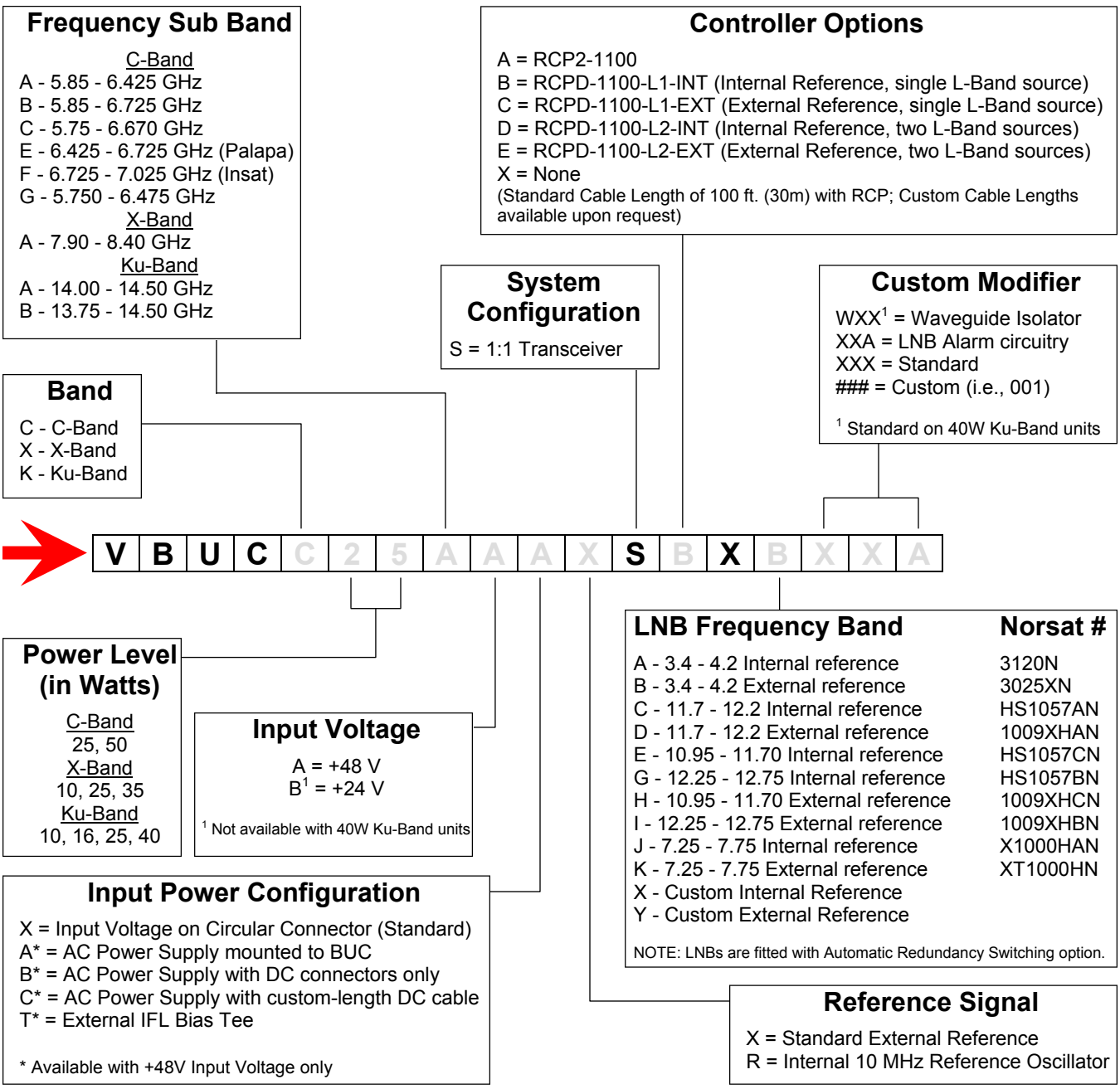
The redundant BUC plate consists of two transmit chains, an RF switch, an RF load and interconnect waveguide assemblies. The BUC interface consists of a customer supplied 50Ω coaxial cable, which carries the L-Band signal, a 10 MHz reference, and an FSK M&C link. The BUC plate assembly is connected via a control cable to the controller, which monitors the Local Oscillator phase lock, internal vBUC voltages, current, and case temperatures.

The redundant LNB Assembly contains two LNBs, an RF switch, close out plate and interconnect waveguide. The LNBs consist of a low noise amplifier and a block down converter, and are powered via the controller. The controller is fitted with a switch on the receive path to avoid adding any additional noise to the receive IF signal from the standby LNB.



Block Diagram, 1:1 Transceiver System, with RCPD-1100-L1-EXT

Part Number Configuration, 1:1 Transceiver Systems



The example in the configurator above displays the model number for a 1:1 Transceiver System consisting of two 25W C-Band (5.85 - 6.425 GHz) Block Up Converters on the transmit path, powered by a +48 VAC Power Supply mounted to each BUC; two 3.4-4.2 GHZ externally referenced Low Noise Block Converters on the receive path, each modified to include alarm circuitry which monitors the current draw to the LNBs. System control is via a RCPD-1100-L1-EXT dual redundant system controller. **Model Number: VBUCC25AAAXSBXBXXA**.

Specifications listed in this document are subject to change without notice.
X-Band products may be subject to ITAR restrictions and should not be exported from the U.S. without obtaining proper licensing from the appropriate government agencies.