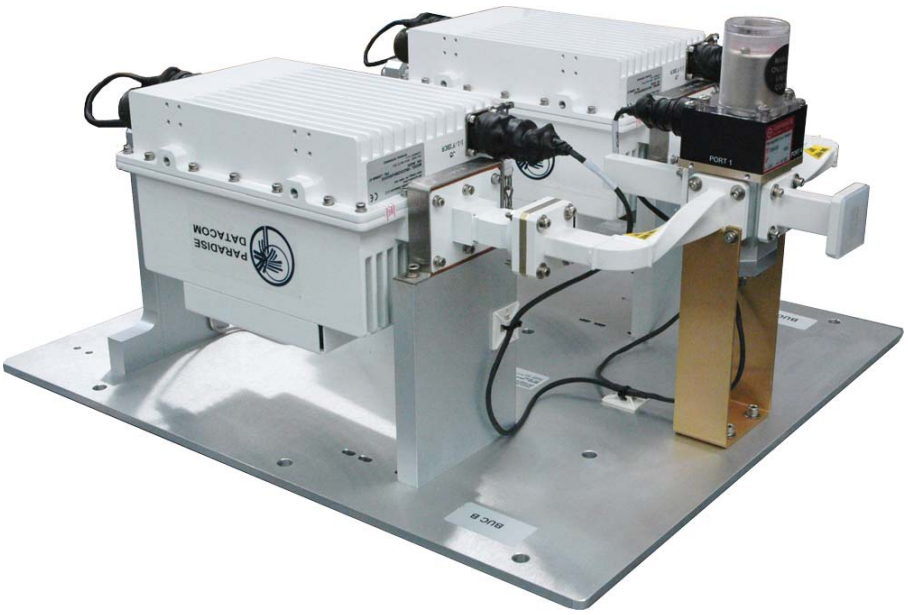
TELEDYNE
PARADISE DATACOM
A Teledyne Technologies Company

vBUC
Redundant Systems (Transmit Only)



1:1 Redundant 25W Ku-Band Plate Assembly

Description

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

Redundant systems are available in the following output power levels:

25W,	50W, 80W	C-Band
	10W, 25W, 35W, 80W	X-Band
	10W, 16W, 25W, 40W	Ku-Band

The vBUC is also available in 1:2 redundant configurations with the addition of a RCP2-1200 R edundant System Controller. Chain 1:1 redundanc y is availa ble with the use of a RCPD-1100 Dual Redundant Controller.

FEATURES

- Single box BUC output power levels to:
  - 80W C-Band
  - 80W 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 Plate dimension: 18 x 20 x 11.0 inches 457 x 508 x 279 mm (w/o AC Power Supplies)
- 1:1 Plate weight: 36.0 lbs. / 16.4 kg. (w/o AC Power Supplies)

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 Teledyne 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 7.2 12.0	48 VDC current 3.6 5.8	 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 208795.

80W C-Band Redundant System Output Power Levels

PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range		*	5.850 to 6.425	GHz
Output Power @: Saturation (Guaranteed minimum)	VBUCC80AAXXWXX	Gain 74 dB	P_{sat} 48.75 (75)	dBm (W)
Power Requirements Input Power @ max current draw per unit	VBUCC80AAXXWXX	24 VDC current N/A	48 VDC Current 7.9	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 GaN vBUC Specification Sheet, Drawing Number 208796.

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 208795.

80W X-Band Redundant System Output Power Levels

PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range			7.90 to 8.40	GHz
Output Power @: Saturation (Guaranteed minimum)	VBUCX80AAXXWXX	Gain 74 dB	P_{sat} 48.75 (75)	dBm (W)
Power Requirements Input Power @ max current draw per unit	VBUCX80AAXXWXX	24 VDC current N/A	48 VDC Current 7.9	Amps

For full vBUC specifications, see the GaN vBUC Specification Sheet, Drawing Number 208796.

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

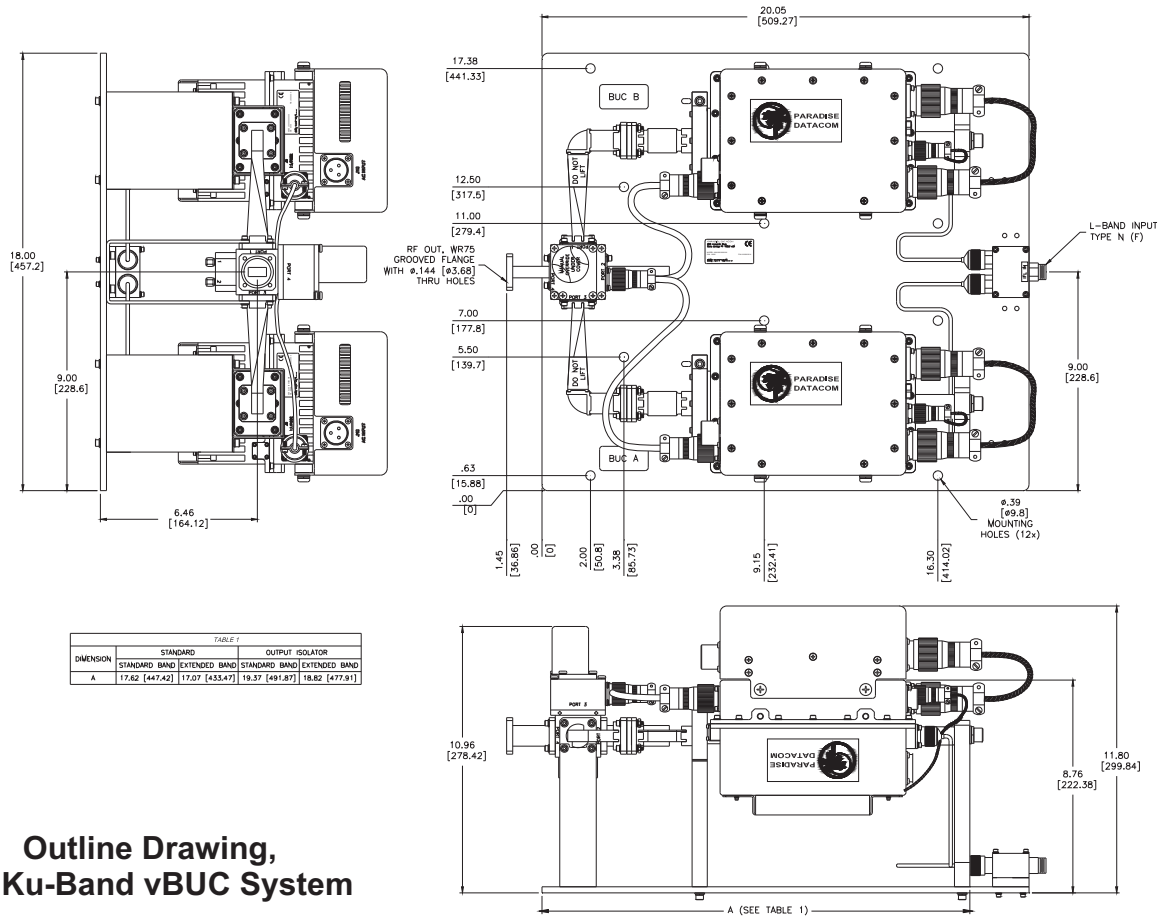
PARAMETER	MODEL NUMBER	NOTES	LIMITS	UNITS
Frequency Range		*	14.0 to 14.5	GHz
Output Power @: Saturation/P_{1dB} (Guaranteed minimum)	VBUCK10AAXXXXX VBUCK16AAXXXXX VBUCK25AAXXXXX	Gain 65 dB 67 dB 68 dB	P_{sat} / P_{1dB} 40.25/39.75 (10.6/9.4) 42.75/41.75 (18.8/15.0) 43.75/42.75 (23.7/18.8)	 dBm (W) dBm (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 208795.

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 6.0	 Amps

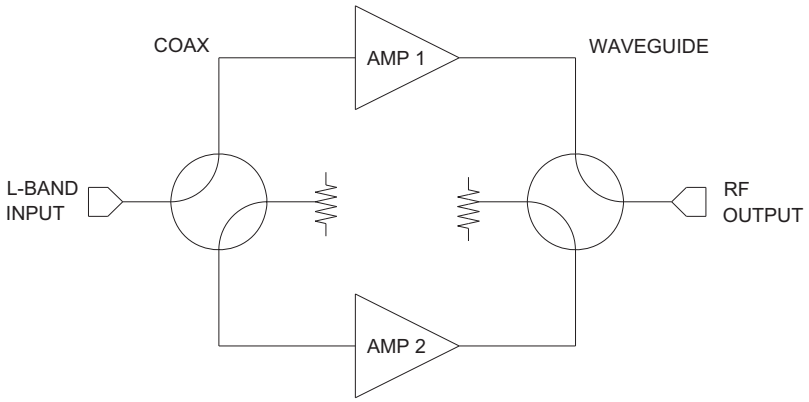
* Available with Extended band frequencies; De-rate output power linearly by 1 dB over 13.75 - 14.0 GHz.
For full vBUC specifications, see the GaN vBUC Specification Sheet, Drawing Number 208796.



**Outline Drawing,
1:1 Ku-Band vBUC System**

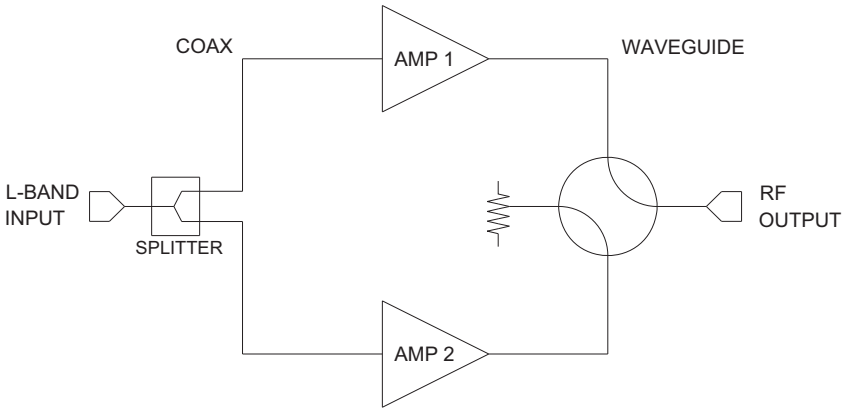
1:1 Redundant Systems (Transmit Only)

1:1 systems with input switching require the internal reference option in each vBUC.



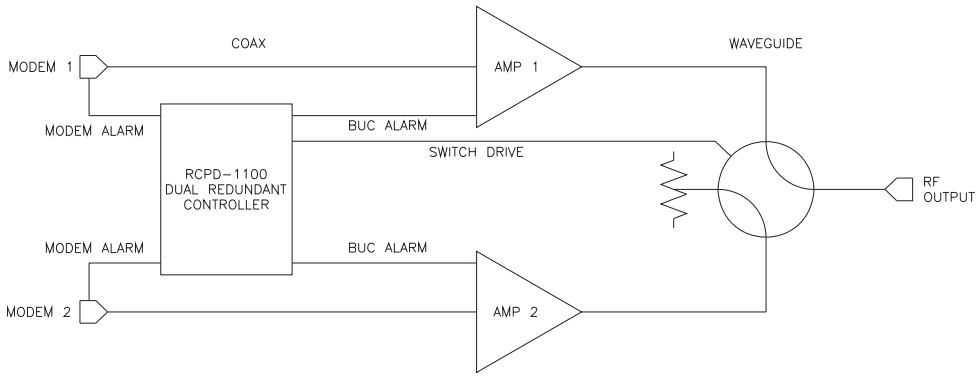
Block Diagram, 1:1 redundant system, input switching

1:1 systems with input splitting can use an exter nal reference. Units can be fitted with an internal reference for auto-detection and switch to an external reference at need.



Block Diagram, 1:1 redundant system, input splitting

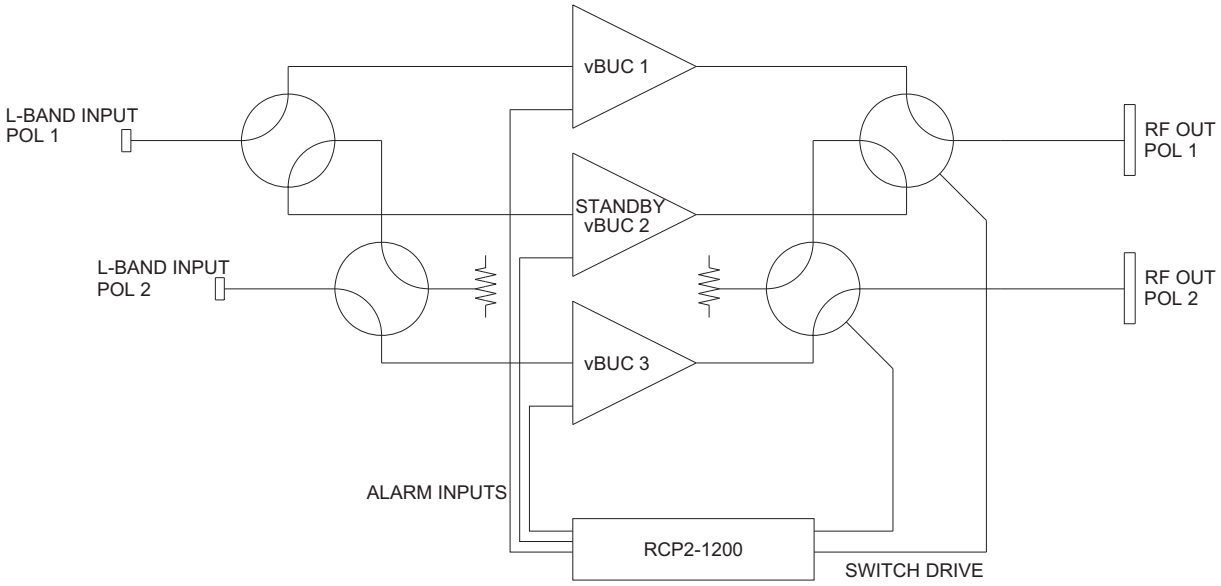
1:1 Chain Redundant Systems require a RCPD-1100 Dual Redundant System Controller.



Block Diagram, 1:1 chain redundant system

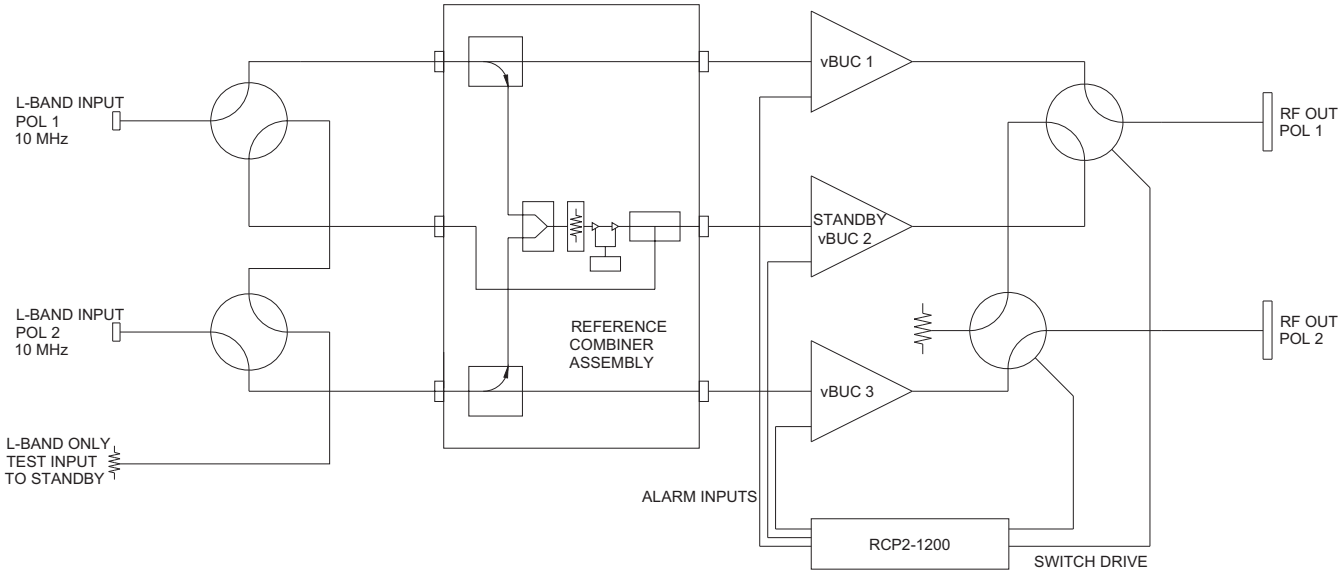
1:2 Redundant Systems (Transmit Only)

1:2 Redundant Systems require the use of a RCP2-1200 Redundant System Controller.



Block Diagram, 1:2 Redundant System, Internal 10 MHz Reference

A 1:2 vBUC redundant system may be fitted with an internal reference for auto-detection and can switch to an ext ernal reference at need. The external re ference requires a reference combiner assembly to ensure a continuous reference signal to each vBUC in the system.



Block Diagram, 1:2 Redundant System, External Reference with Reference Combiner

Part Number Configuration, 1:1 or 1:2 Transmit Only Systems

V	B	U	C											

Band

C - C-Band
X - X-Band
K - Ku-Band

Power Level (in Watts)

C-Band
25, 50, 80[1]

X-Band
10, 25, 35, 80[1]

Ku-Band
10, 16, 25, 40[1]

[1] See Drawing Number 208796

Frequency Sub Band

C-Band
A - 5.85 - 6.425 GHz
B - 5.85 - 6.725 GHz
C - 5.75 - 6.670 GHz
E - 6.425 - 6.725 GHz (Palapa)
F - 6.725 - 7.025 GHz (Insat)
G - 5.750 - 6.475 GHz

X-Band
A - 7.90 - 8.40 GHz

Ku-Band
A - 14.00 - 14.50 GHz
B - 13.75 - 14.50 GHz

Input Voltage

A = +48 V
B[1] = +24 V

[1] Not available with GaN vBUC units

Configuration Modifier

XXX = Standard
WXX[1] = Waveguide Isolator
XAX = LNB Power & Reference Port

[1] Standard on GaN vBUC units; Optional with other power levels/bands

System Configuration Options

A[1] = 1:1 w/ Input Switching, Internal Control
B = 1:1 w/ Input Splitter, Internal Control
C[2] = 1:2 w/ Input Switching & RCP2-1200[3]
F = 1:1 w/ Input Splitter & RCP2-1100[3]
H[1] = 1:1 w/ Input Switching & RCP2-1100[3]
J = 1:1 chain redundancy & RCPD-1100[3]

[1] Not available with units utilizing an external reference.
[2] 1:2 systems utilizing input switching with an external reference require the use of a reference combiner.
[3] Standard Cable Length of 100 ft. (30m) with RCP

Reference Signal

X = Standard External Reference
R = Internal 10 MHz Reference Oscillator

Input Power Configuration

X = Input Voltage on Circular Connector (Standard)
A* = AC Power Supply mounted to BUC
B* = AC Power Supply with DC connectors only
C* = AC Power Supply with custom-length DC cable
T* = External IFL Bias Tee

* Available with +48V Input Voltage only

Specifications within this document are subject to change without notice.
X-band products may be subject to ITAR restrictions and should not be exported from the US without obtaining proper licensing from the appropriate government agencies.