CPI Communications & Power Industries
satcom products

formerly....

CODAN SATCOM
CODAN Locus Microwave

C-Band 4700 & Ku-Band 4900 series MINI-BUC ACCESSORIES

↗ FEATURES AT A GLANCE

- **Comprehensive range of accessories**
- **Multiple solutions**
- **Advanced features**
- **Smart interconnections**
- **Easy to install**
- **One-stop-shop for complete satellite system**

A range of accessories and options are available for the CPI/Codan C-Band 4700 series and Ku-Band 4900 series BUCs. These include options to increase system availability, and accessories needed to complete the system such as waveguide components.

Ku-Band 4900 series Mini-BUC

7550 LAN Interface

- Converts FSK data to provide direct serial USB and Telnet access to the M&C serial command set of the BUC, and provides HTML pages of BUCs via an inbuilt Web server in the 7550.
- Provides RJ45 TCP/IP LAN and USB Type-B serial connections.
- Pass-through inline connection with the IFL eliminates additional cabling to the indoor unit.
- Daisy-chain connection to 7551 10 MHz Ref Source.
- 15D connection for RS485 or 6570.

7552 FSK to USB Interface

- Provides access to the M&C serial command set of the BUC via a USB port of the PC.
- May be used as a permanent connection indoors or a temporary connection outdoors at the BUC.
- Pass-through inline connection with the IFL eliminates additional cabling.
- Powered via USB port.
- Daisy-chain connection to 7551 10 MHz Ref Source.

7551 Reference Source

- Compact indoor/outdoor high stability 10 MHz Reference Source with several intelligent features.
- Pass-through inline connection with the IFL.
- Powered via IFL DC and external DC.
- Daisy-chain connection to 7550 or 7552.

LNBs

- Selection of externally referenced C-Band and Ku-Band Low Noise Block converters (LNBs).

Waveguide Components

- Variety of waveguide components in both C-Band and Ku-Band including:
  - flexible-twistable waveguide
  - Transmit and Receive Reject Filters (TRF/RRFs)
  - waveguide to coaxial adaptors

PSU, DuraComm™ CD-CLG-150-48 150 W

- 48 V, 3.2 A, short-circuit/overload/over-voltage/over temp protection, IP67 rated.
- Comes complete with mounting brackets, and a 1 m DC lead with a mini 2 pin MS connector and a 5 m AC lead with free end.

Specifications

	7550 LAN Interface	7552 FSK to USB Interface
Multiplexer		
IFL signals	Pass-through IF, 10 MHz Reference, block FSK from modem	
IFL DC	Pass-through 12 to 60 V DC at 5 A max Maximum ripple 5 V p-p (Mini-BUCs, 16 W Ku-Band/20 W C-Band LBUCs)	
Frequency range	IF 950 to 1825 MHz, FSK 550 to 750 kHz, and 10 MHz (maximum level +10 dBm)	
Throughloss IF Reference 10 MHz	 1 dB max 1 dB max	
Return loss	15 dB Input/Output for all signals (50 Ω termination)	
Gain flatness	IF band ±0.5 dB	
Connectors	Input/Output: 50 Ω N-type female, LAN RJ45, USB Type B receptacle, 15 pin D type male	Input/Output: 50 Ω N-type female, USB Type B receptacle
FSK Modem		
Frequency range	550 to 750 kHz	
Output	–8 dBm	
Rx sensitivity	–20 dBm	
Serial data format	9600, 8-N-1	9600 to 57600, 8-N-1
USB driver	Compatible with Windows® 2000, XP, Vista	
Virtual serial port	COM4 or next available	
RS485 port	15 pin D-type 2-wire packet protocol and 10 V DC for 6570	
Terminal program	Hyperterminal or similar	
Ethernet interface	100BaseT, Auto MDIX	N/A
Power Supply		
Power supply input	Powered by 12 to 60 V DC from the IFL or external DC connector, 2-way plug in screw terminal, polarised and reverse polarity protected	Powered by 5 V DC from the USB port of PC
Power consumption	Typically 1.5 W	Typically 200 mW
General		
Operating temperature	–10 to +55°C	
Relative humidity	100% non-condensing	
Weatherproofing	Indoor use only	
Size	148 mm W x 94 mm D x 55 mm H	119 mm W x 81 mm D x 28 mm H
Weight	400 g	175 g
LNB	**C-Band**	**Ku-Band**
Input frequency range	3400 to 4200 MHz	Band 1: 10950 to 11700 MHz Band 2: 11700 to 12200 MHz Band 3: 12250 to 12750 MHz
Local oscillator frequency	5150 MHz	Band 1: 10000 MHz Band 2: 10750 MHz Band 3: 11300 MHz
Output frequency range	950 to 1750 MHz	950 to 1450/1700 MHz
Noise temperature	45K @ 20°C max	75K @ 20°C max
Gain specification	60 dB typical	
Reference frequency (External)	10 MHz	
Reference frequency level	–10 to 0 dBm	–5 to +5 dBm
Maximum phase noise (SSB) of reference frequency: 100 Hz 1 kHz 10 kHz 100 kHz	 –135 dBc/Hz max –145 dBc/Hz max –155 dBc/Hz max –155 dBc/Hz max	
Phase noise (SSB) of BUC with reference frequency defined above: 100 Hz 1 kHz 10 kHz 100 kHz	 –63 dBc/Hz max –73 dBc/Hz max –83 dBc/Hz max –93 dBc/Hz max	
Output connector	N-type female	
Reference frequency connector	Via N-type IF output	
DC power	+15 to +24 V DC	
DC supply current	500 mA max	
Power consumption	12 W max	
DC power connector	Via N-type IF output	
Operating temperature range	–40°C to +55°C	
Relative humidity	100%	
Weatherproofing	Weatherproof	

Values noted are typical at 25°C. Equipment descriptions and specifications are subject to change without notice or obligation.

7551 Reference Source

Internal 10 MHz Reference (Xtal oven-controlled)			
Stability	±1 x 10^{-7} max over entire temperature range		
Aging	±1 x 10^{-7}/year max		
Phase noise (SSB)			
100 Hz	–135 dBc/Hz max		
1 kHz	–145 dBc/Hz max		
10 kHz	–155 dBc/Hz max		
100 kHz	–160 dBc/Hz max		
Output level	2 dBm ±2 dB		
Cold start warm-up time	Typical 1 minute @ 25°C		
10 MHz Reference Switching			
Internal/External Reference switching	Automatic with level detection; level above –8 dBm on input (modem) port will cause switchover to External 10 MHz Reference (external 10 MHz has priority). Level less than –9.5 dBm will cause switchover to Internal Reference.		
Relay switch	High isolation and failsafe operation (switches to External Reference in event of power failure)		
Isolation	80 dB between Internal and External Reference Sources		
Switching time	<2 ms with hysterisis protection to prevent erratic switching		
Multiplexer			
IFL signals	Pass-through IF, FSK, and switch-through Internal/External 10 MHz Reference		
IFL DC	Pass-through 12 to 60 V DC at 5 A max (Mini-BUCs, 16 W Ku-Band/20 W C-Band LBUCs or LNBs)		
Frequency range	IF 950 to 1825 MHz, FSK 550 to 750 kHz, and 10 MHz (maximum level +10 dBm)		
Throughloss	IF and FSK: 1.0 dB max External 10 MHz: 1.5 dB max		
Return loss	15 dB Input/Output for all signals (50 Ω termination)		
Gain flatness	IF band ±0.5 dB		
Connectors	50 Ω N-type female Input/Output		
Power Supply			
Power supply input	Derives power for itself from the IFL input N-type connector (modem) port or from external DC mini 2-pin connector port (12 to 60 V DC negative earth)		
Power supply multiplexing	Can supply maximum 5 A DC through IFL to power LNBs or LBUCs (16 W Ku-Band/20 W C-Band). Cannot supply power to BUCs/LNBs via the external 2-pin mini connector port.		
Power supply switching	Automatic with level detection – switches to port with highest voltage		
Power supply ripple	External IFL DC power supply ripple must not exceed 5 V p-p		
Protection	Reverse polarity protected. Negative earth on both ports.		
Power consumption	Typically 2 W at 25°C		
External DC connector	Mini 2 pin mil-type 62IN-12E-8-2P		
General			
Operating temperature	–40 to +55°C		
Relative humidity	100% non-condensing		
Weatherproofing	Sealed to IP66. Pressure tested to 34 kPa.		
Mounting	4 x M6 x 12 mm threaded holes		
Size	119 mm W x 81 mm D x 28 mm H		
Weight	280 g		
Flextwist Waveguide	**C-Band**	**Ku-Band**	
Frequency range	5850 to 8200 MHz	10000 to 15000 MHz	
Length	910 mm (36 inches) nominal		
Flanges	CPR137G and CPR137	PBR120 choke and cover	
VSWR	1.2:1 max		
Attenuation	0.25 dB max	0.45 dB max	
CW power rating	2000 W min	750 W min	
Peak power rating	500 W min	140 W min	
Waveguide Adaptor	**C-Band**	**Ku-Band**	
Frequency range	5850 to 8200 MHz	10000 to 15000 MHz	
Flange	CPR137G	PBR120 Choke	
VSWR	1.25:1 max	1.35:1 max	
Connector	N-type female		
Attenuation	0.1 dB max	0.15 dB max	
TRF/RRF	**C-Band TRF**	**Ku-Band TRF**	**Ku-Band RRF**
Passband frequency	3400 to 4200 MHz	10700 to 12750 MHz	13750 to 14500 MHz
Passband VSWR	1.15:1 max	1.15:1 max	1.2:1 max
Insertion loss	0.15 dB max	0.2 dB max	0.2 dB max
Stopband frequency	5850 to 6725 MHz	13750 to 14500 MHz	10200 to 12750 MHz
Rejection	55 dB min		30 dB min
Weight	1 kg max	0.3 kg max	0.3 kg max
Pressurisable to	34 kPa min		34 kPa min
Operating temperature	–40°C to +55°C		–40°C to +55°C
Flanges	CPR229G and CPR299F	WR75, cover and choke	WR75, cover and choke

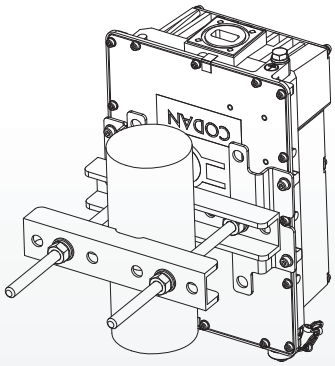
Accessories Ordering Guide

These accessories support the C-Band 4700 & Ku-Band 4900 series Mini-BUCs:

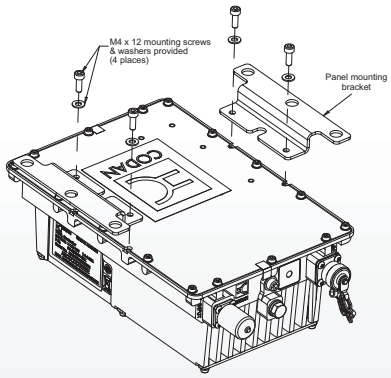
- 4710-W/S-DC/EX-NI
- 4908(L)-W/E-DC/EX-CE-NI
- 4916(L)-W/S-48/EX-NI, 4916(L)-W/E-48/EX-CE-NI

Order Code/Part Number	Description
7550	7550 LAN Interface
7551	7551 Reference Source
7551-1	7551-1 Reference Source with 1 m Coaxial Cable & Sealing Kit
7552	7552 FSK to USB Interface
LNB-C	LNB, 3.4 to 4.2 GHz, 40 K, 60 dB Gain, N-type Output c/w Flange Kit
LNB-KU-R1	LNB, 10.95 to 11.70 GHz, 75 K, 60 dB Gain, N-type Output c/w Flange Kit
LNB-KU-R2	LNB, 11.70 to 12.20 GHz, 75 K, 60 dB Gain, N-type Output c/w Flange Kit
LNB-KU-R3	LNB, 12.25 to 12.75 GHz, 75 K, 60 dB Gain, N-type Output c/w Flange Kit
RRF-KU	Receive Reject Filter c/w Flange Kit (Pass: 13.75 to 14.50 GHz, Reject: 10.7 to 12.75 GHz)
TRF-C2	Transmit Reject Filter c/w Flange Kit (Pass: 3.625 to 4.200 GHz, reject: 5.850 to 6.425 GHz)
TRF-C4	Transmit Reject Filter c/w Flange Kit (Pass: 3.625 to 4.200 GHz, reject: 5.850 to 6.725 GHz)
TRF-KU	Transmit Reject Filter c/w Flange Kit (Pass: 10.7 to 12.75 GHz, reject: 13.75 to 14.50 GHz)
08-05366-010	Cable, Coaxial 50 Ω N-N Plug, 1 m
08-05972-002 (L)	Cable, M&C, Serial PC, 2 m
08-06448-005	Cable, External DC Input, 5 m
08-07189-XXX (L)	Cable, M&C, LAN RJ45 In/Outdoor (available in 2, 6, 50, 100 m lengths)
15-40183	Kit, WR75 Waveguide Adaptor (to mate metric to 6/32 UNC WR75 flanges)
15-40189 15-40163	Kit, Flexible Waveguide, 36 Inches C-Band Ku-Band
15-40202	Kit, Connector Sealing
15-40205	Kit, Flange, WR137 Full, 30 mm (waveguide output BUCs only)
15-40206	Kit, Flange, WR75, for Direct Feed Mounting
15-42099-000	Kit, Boom Mounting (mounting brackets c/w bolts, nuts and washers)
15-42100-000	Kit, Panel Mounting (offset mounting brackets c/w M4 screws and 3x3 inch hole spacing)
15-44039-EN	BUC Technical Information CD (includes USB Driver, Reference Manuals & Application Notes)
67-3011-0093	Cable, USB, Type A to Type B, 1 m (for use with 7550/7552)
67-91500	Cable, 15 Core DB15M to DB15F Grey, 0.75 m (for use with 6570/7550)
78-01001-005	Adaptor, WR137 Waveguide to N-Type
78-01030	Adaptor, WR75 Waveguide to N-type
78-16053	PSU, DuraComm™ CD-CLG-150-48 150 W

Mini-BUC feed-mounted (Vertically polarised)



Mini-BUC boom-mount kit (15-42099-0000)



Mini-BUC panel-mount kit (15-42100-000)

Americas (Head Office)

CPI
Satcom Products
Palo Alto, CA USA

T: +1 (650) 846-3803
F: +1 (650) 424-1744

Europe, Middle-East & Africa

CPI International Inc.
Cham, Switzerland
T: +41 (41) 560 7550
F: +41 (41) 560 755

CPI Europe Limited
Surrey, England
T: +44 (1932) 256 930
F: +44 (1932) 241 271

Asia-Pacific

CPI Asia Inc.
Singapore
T: +65 6225 0011
F: +65 6225 5525

www.cpii.com/satcomsales
satcommarketing@cpii.com

12-20246-EN Issue 7 JAN 2013