

## VSAT BUC Codan 6700 and 6900 Medium Power L-Band IF

CODAN L-Band IF input 6700 series VSAT C-Band and 6900 series VSAT Ku-Band BUCs offer a wide range of distinctive advantages and enhanced features for satellite communications systems based in remote or challenging geographic regions.

Available in all common VSAT C Band and VSAT Ku Band operating frequencies-and a range of output powers of the 6700 and 6900 series VSAT BUCs provide industry leading technical performance.

### Key features

#### Configuration

The 6700 and 6900 series VSAT transceivers are based on a compact L-Band IF input Block Up Converter (BUC). This module is available in VSAT C Band and VSAT Ku Band versions and a range of RF output powers. Receive capability is provided by a range of LNBs to cover the various VSAT C-Band and VSAT Ku-Band receive frequency ranges.

**Durability** The 6700 and 6900 series VSAT BUC are designed and tested to meet all their performance specifications over an ambient temperature range of  $-40^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$  and up to 100% relative humidity, ensuring long-term survival in extreme conditions. Field experience for Codan transceivers shows that MTBFs of greater than 100,000 hours can be expected.

#### RF performance

RF performance is superior, particularly: intermodulation performance, gain stability over temperature and flatness across the IF band. The 6700 and 6900 series VSAT BUCs also boast industry leading spurious and harmonics specifications compliant with CE requirements. Guaranteed RF performance ensures expensive system link margins do not have to be used to cope with RF transceiver variations.

#### Power

L-Band IF VSAT BUCs all feature low power consumption and low temperature rise, ensuring internal components do not suffer undue stress.

The 6700 and 6900 series VSAT Low power (LBUC) modules are powered via the transmit IF cable. The VSAT Medium power (MBUC) modules are AC mains powered.

#### Internal protection

Internal protection against high temperature and short or open circuit RF output is standard. As well, input voltage detection ensures reliable shutdown and restart under brownout or blackout conditions.

#### External protection

The transceiver is completely protected from the elements without external user controls. The CODAN VSAT BUC modules are fully sealed and pressure tested to 34 kPa (5 psi). Particle and moisture penetration is rated to IP68. High quality powder coat paint is used to protect the modules from corrosion.

### Advanced features

#### Enhanced monitor and control

All operating functions can be controlled and monitored via the serial M&C facilities. The standard output power meter facility features high accuracy and the ability to measure both CW and burst mode signals.

The CODAN 6700 and CODAN 6900 series VSAT transceivers is capable of operating with a PC without requiring



proprietary software.

The user has the choice of an FSK based M&C interface, which is fed via the transmit IF cable for use with intelligent modems or separate RS232 or RS422/RS485 interfaces.

Multiple M&C protocols are provided to enable integration into a number of network management systems.



**IF Interface unit**

In cases where the modem is not able to drive the transceiver directly, an optional indoor unit is available. This unit connects to the modem at the L-Band transmit and receive IF interfaces, and multiplexes the required power and reference signals on the IF cables. In addition, it also converts the M&C FSK to separate RS232 and RS422/RS485 interfaces.



**Major configuration options**

Refer to individual specification sheets for allowed combinations of configuration options.

**Receive frequency bands (GHz)**

Receive bands are selected by the use of an appropriate LNB. Standard frequency bands are listed below. Noise temperatures of 40 K (C-Band) and 75 K (Ku-Band) are available.

**CODAN Transmit frequency band (GHz)**

VSAT C-Band	VSAT Ku-Band
5.850 - 6.725 and 5.850 - 6.425	14.0 - 14.5; 13.75 - 14.5 and 13.75 - 14.25

**CODAN Block Up Converter BUC RF output power**

VSAT C-Band	VSAT Ku-Band
6705 - 5W	6904 - 4W
6710 - 10W	6908 - 8W
6720 - 20W	6908 - 16W
6725 - 25W	6925 - 25W
6740 - 40W	
6760 - 60W	
CPR137G waveguide output standard, N female coaxial connector optional	PBR120 (WR75) waveguide output standard

**Power Input**

24 V DC nominal
48 V DC nominal
115/230 V AC nominal

## Accessories

- Hand-held Controller
- Remote Controller
- IF Interface Unit
- Power Suppliers
- Low Noise Block Converters (LNBs)
- Transmit Reject Filter (TRFs)
- Antenna mounting kits
- Redundancy Systems

## CODAN quality and service

All CODAN L-Band IF VSAT transceivers are built and tested in CODAN ISO9001 quality certified manufacturing facility, and undergo 100% burn in and performance monitoring over the temperature range specified.

CODAN fully trained staff and agents provide in-factory and incountry training services and complete installation and on-site assistance. This service is backed up by a 24 hour customer service line and a warranty of three years on manufacturing, design or component defects.

## VSAT Block Up Converter BUC Medium power C-Band CODAN 6700 series technical specifications

### RF specifications

#### IF input

Frequency range	
Standard band	950 to 1525 MHz
Extended band	950 to 1750 MHz
Impedance	50 $\Omega$
Connector	N female
VSWR	1.5:1 maximum

#### Gain specification

Gain @ 0 dB attenuator setting	
6720	74 dB nominal
6725	74 dB nominal
6740	77 dB nominal
6760	79 dB nominal
Transmit attenuator	0, 4, 8 and 12 dB settings
Gain flatness	$\pm 0.75$ dB maximum, 40 MHz $\pm 1.5$ dB maximum, full band
Gain stability	
over any 50°C range	$\pm 1.0$ dB maximum
over -40°C to +55°C	
- when frequency set	$\pm 1.25$ dB maximum
- when frequency not set	$\pm 2.0$ dB maximum

#### RF output

Frequency range	
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Standard band Extended band	5.850 to 6.425 GHz 5.850 to 6.725 GHz
Power @ 1 dB GCP  6720, 20 W 6725, 25 W  6740, 40 W 6760, 60 W	+43.0 dBm minimum +44.0 dBm typical +43.7 dBm minimum +46.0 dBm minimum +47.8 dBm minimum
Carrier to intermodulation ratio  6720, 6725 6740, 6760	-26 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP -25 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP
Output power meter  Range  6725, 6740 6760	Down to P1dB – 10 dB Down to P1dB – 15 dB
Absolute accuracy  when frequency set when frequency not set	±1.0 dB maximum ±2.0 dB maximum
Relative accuracy  when frequency set when frequency not set	±0.5 dB maximum ±1.0 dB maximum
Modes	CW, burst with adjustable threshold
Connector	CPR137G with 5.0 mm through holes N female optional (except 6760)
VSWR	1.5:1 maximum

### Spurious output

CE compliance	Meets EN 301 443 with 53 dBi antenna gain
Spurious	-60 dBc maximum @ 3 dB OPBO
Harmonics	-70 dBc maximum @ 3 dB OPBO

### Phase noise (SSB)

100 Hz	-63 dBc/Hz maximum
1 kHz	-73 dBc/Hz maximum
10 kHz	-83 dBc/Hz maximum
100 kHz	-93 dBc/Hz maximum

### Frequency reference

Frequency	10MHz
Level	-10 to +5 dBm
Input connector	Multiplexed on the transmit IF

### Frequency conversion

Standard band	7300, 7375MHz user selectable
Extended band	7300, 7375, 7600, 7675MHz user selectable
Sense	Spectrum inverting

### Monitor and control (FSK)

Mode	FSK modulation
Protocol	User selectable
Data format	User selectable
Connector	Multiplexed on the transmit IF
Data transmitter	
Frequency	650 kHz $\pm$ 1%
Deviation	60 kHz $\pm$ 1%
Sense	+60 kHz = mark, -60 kHz = space
Output level	-3 dBm nominal
Start tone time	10 ms minimum
Data receiver	
Nominal frequency	650 kHz
Locking range	$\pm$ 30 kHz
Input sensitivity	-15 dBm minimum

### Monitoring and control (digital)

Interfaces	RS232, RS485 (4-wire, 2-wire strapable)
Data format	
RS232	9600 bit/s, 8 bits no parity, 1 stop bit, ASCII protocol
RS485	User selectable format and protocol
Connector	MIL-C-26482 12-14S

### Monitoring and control functions

#### Serial interface functions

Power amplifier on, Output power, Temperature, Fault status, Model number, Serial number, Software version, Compensation frequency, Transmit attenuator, Burst threshold, Packet address, Packet protocol.

#### Other monitoring functions

Loss of lock causes alarm contact closure and attenuates RF output by >70 dB. LED indicators for: Power on, Transmit on and BUC fault.

### Power

#### Power supply

Input voltage	94 to 275 V AC
Frequency	45 to 65 Hz

#### Consumption

6720	240W maximum, power factor corrected
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6725	240W maximum, power factor corrected
6740	375W maximum, power factor corrected
6760	580W maximum, power factor corrected
Connector	Amphenol T3110 000, mating connector supplied

## Environmental

Operating temperature range	-40°C to +55°C
Relative humidity	100%
Cooling	Forced air
Weatherproofing	Sealed to 34 kPa

## Physical

### Size

6720, 6725, 6740	497 mm L x 182 mm W x 202 mm H
6760	496 mm L x 182 mm W x 216 mm H

### Weight

6720, 6725, 6740	11.8 kg
6760	15 kg

### Mounting

6720, 6725, 6740, 6760	Boom mounting kit supplied
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## CODAN Block Up Converter BUC Medium power VSAT Ku-Band 6900 series technical specifications

### RF specifications

#### IF input

Frequency range	
Standard and Offset band	950 to 1450 MHz
Extended band	950 to 1700 MHz
Impedance	50 Ω
Connector	N female
VSWR	1.5:1 maximum

#### Gain specification

Gain @ 0 dB attenuator setting	
6916	73 dB nominal
6925	74 dB nominal
Transmit attenuator	0, 4, 8 and 12 dB settings
Gain flatness	±0.75 dB maximum, 40 MHz ±1.5 dB maximum, full band

Gain stability	
over any 50°C range over -40°C to +55°C - when frequency set - when frequency not set	±1.0 dB maximum ±1.25 dB maximum ±2.0 dB maximum

## RF output

Frequency range	
Standard band	14,0 to 14,5 GHz
Extended band	13,75 to 14,5 GHz
Offset band	13,75 to 14,25 GHz
Power @ 1 dB GCP	
CODAN 6916, 16 W	+42.0 dBm typical +41.7 dBm minimum
CODAN 6925, 25 W	+43.7 dBm typical +43.4 dBm minimum
Carrier to intermodulation ratio	-25 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP
Output power meter	
Range	
6916	Down to P1dB - 10 dB
6925	Down to P1dB - 15 dB
Absolute accuracy	
when frequency set	±1.0 dB maximum
when frequency not set	±2.0 dB maximum
Relative accuracy	
when frequency set	±0.5 dB maximum
when frequency not set	±1.0 dB maximum
Modes	CW, burst with adjustable threshold
Connector	PBR120 flange (WR75) with 4.2 mm through holes
VSWR	1.5:1 maximum

## Spurious output

CE compliance	Meets EN 301 428 with 54 dBi antenna gain
Spurious	-60 dBc maximum @ 3 dB OPBO
Harmonics	-70 dBc maximum @ 3 dB OPBO

## Phase noise (SSB)

100 Hz	-63 dBc/Hz maximum
1 kHz	-73 dBc/Hz maximum
10 kHz	-83 dBc/Hz maximum
100 kHz	-93 dBc/Hz maximum

## Frequency reference

Frequency	10 MHz
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Level	-10 to +5 dBm
Input connector	Multiplexed on the transmit IF

### Frequency conversion

Standard & Extended band	15450 MHz
Offset band	15200 MHz
Sense	Spectrum inverting

### Monitor and control (FSK)

Mode	FSK modulation
Protocol	User selectable
Data format	User selectable
Connector	Multiplexed on the transmit IF
Data transmitter	
Frequency	650 kHz $\pm$ 1%
Deviation	60 kHz $\pm$ 1%
Sense	+60 kHz = mark, -60 kHz = space
Output level	-3 dBm nominal
Start tone time	10 ms minimum
Data receiver	
Nominal frequency	650 kHz
Locking range	$\pm$ 30 kHz
Input sensitivity	-15 dBm minimum

### Monitoring and control (digital)

Interfaces	RS232, RS485 (4-wire, 2-wire strapable)
Data format	
RS232	9600 bit/s, 8 bits No parity, 1 stop bit, ASCII protocol
RS485	User selectable format and protocol
Connector	MIL-C-26482 12-14S socket

### Monitoring and control functions

#### Serial interface functions

Power amplifier on, Output power, Temperature, Fault status, Model number, Serial number, Software version, Compensation frequency, Transmit attenuator, Burst threshold, Packet address, Packet protocol.

#### Other monitoring functions

Power amplifier on, Output power, Temperature, Fault status, Model number, Serial number, Software version, Compensation frequency, Transmit attenuator, Burst threshold, Packet address, Packet protocol.

### Power

#### Power supply

Input voltage	94 to 275 V AC
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Frequency	45 to 65 Hz
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### Consumption

6916	300W maximum, power factor corrected
6925	375W maximum, power factor corrected
Connector	Amphenol T3110 000, mating connector supplied

### Environmental

Operating temperature range	-40°C to +55°C
Relative humidity	100%
Cooling	Forced air
Weatherproofing	Sealed to 34 kPa

### Physical

#### Size

6916, 6925 Watt	522mm L x 182mm W x 202mm H
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#### Weight

6916, 6925 Watt	11.8 kg
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### Mounting

6916, 6925	Boom mounting kit supplied
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**VSAT | BUC | Block Up Converter | C Band | Ku Band**

[http://vsat-buc.at-communication.com/en/codan/vsat\\_buc\\_6900\\_mp.html](http://vsat-buc.at-communication.com/en/codan/vsat_buc_6900_mp.html)