L-Band IF transceiver
Low power C-Band 6700 series

SPECIFICATIONS

LOW POWER BLOCK UP CONVERTER

IF Input

Frequency range	
6705, 6710CE	950 to 1750 MHz
6710SE	950 to 1525 MHz
Impedance	50 Ω
Connector	N female
VSWR	1.5:1 maximum

Gain specification

Gain @ 0 dB attenuator setting	
6705	68 dB nominal
6710CE/SE	71 dB nominal
Transmit attenuator	0, 2, 4, 8 and 12 dB settings
Gain flatness	
6705, 6710CE	±0.75 dB maximum, 40 MHz
	±1.5 dB maximum, full band
6710SE	±1.5 dB maximum, 40 MHz
	±2.5 dB maximum, full band
Gain stability	
over any 50°C range	
6705	±1.0 dB maximum
6705CE/SE	±1.5 dB maximum
over –40°C to +55°C	
when frequency set	
6705	±1.25 dB maximum
6710CE/SE	±2.0 dB maximum
when frequency not set	
6705	±2.0 dB maximum
6710CE	±3.0 dB maximum
6710SE	±4.0 dB maximum

RF output

Frequency range	
6705, 6710CE	5.850 to 6.725 GHz
6710SE	5.850 to 6.425 GHz
Connector	CPR137G with 5.0 mm through holes
	N female optional
VSWR	
6705, 6710CE	1.5:1 maximum
6710SE	2.0:1 maximum
Power @ 1 dB GCP	
6705, 5 W	+37.0 dBm minimum
6710CE, 10 W	+40.0 dBm minimum
6710SE, 10 W	+40.0 dBm typical
Carrier to intermodulation ratio	
(two carriers, each @ 6 dB OPBO from 1 dB GCP)	
6705	–29 dBc minimum
6710CE/SE	–26 dBc minimum
Output power meter	
Range	P1dB down to P1dB – 14 dB
Absolute accuracy	
when frequency set	±1.0 dB maximum
when frequency not set	
6705, 6710CE	±2.0 dB maximum
6710SE	±4.0 dB maximum
Relative accuracy	
when frequency set	±0.5 dB maximum
when frequency not set	
6705, 6710CE	±1.0 dB maximum
6710SE	±2.0 dB maximum
Modes	CW, burst with adjustable threshold

Spurious output

CE compliance (6705, 6710CE)	Meets EN 301 443 with 53 dBi antenna gain
Spurious	–50 dBc maximum @ 3 dB OPBO
Harmonics	–60 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
Level	–5 to +5 dBm
Input connector	Multiplexed on the transmit IF

Frequency conversion

LO frequencies	7300, 7375, 7600, 7675 MHz user selectable
Sense	Spectrum inverting

Power supply options

24 V nominal (6705)	19 to 35 V DC via transmit IF connector
48 V nominal (6705, 6710CE/SE)	42 to 60 V DC via transmit IF connector

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 ±1%
Deviation	60 kHz ±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	±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, Transmit frequency, Transmit attenuator, Burst threshold, Packet address, Packet protocol

Other monitoring functions: Loss of lock causes alarm contact closure, reduces BUC current drain by >50% and attenuates RF output by >60 dB. LED indicators for: Power on, Transmit on and BUC fault

Power consumption

6705	60 W maximum
6710CE/SE	105 W maximum

LOW NOISE BLOCK CONVERTER

Indicative specifications.

Input

Frequency range	3.400 to 4.200 GHz
Interface	CPR229G
VSWR	2.5:1 typical

Noise temperature 40 K @ 25°C typical

Gain specification

Gain	60 dB nominal
Gain flatness	±2.0 dB maximum full band

Output

Frequency range	950 to 1750 MHz
1 dB GCP	0 dBm minimum
Impedance	50 Ω (75 Ω optional)
Connector	N female (F female optional)
VSWR	2.5:1 typical

Frequency reference

Frequency	10 MHz
Level	–5 to +5 dBm
Connector	Multiplexed on the receive IF

DC power

Voltage	+15 to +24 V DC
Current	450 mA maximum
Connector	Multiplexed on the receive IF

IF INTERFACE UNIT

Transmit and receive IF paths

Frequency range	950 to 1750 MHz
Impedance	50 Ω (75 Ω LNB Rx IF input)
VSWR	1.7:1 maximum
Insertion loss	1 dB maximum
Flatness	±0.25 dB over 950 to 1750 MHz
Connectors	
Modem Rx and Tx IF	SMA female
BUC Tx IF	N female
LNB Rx IF	F female

Signals on transmit IF output

DC power	48 V ±1 V @ 1.8 A maximum
10 MHz reference	0 dBm nominal
FSK M&C	–2 dBm nominal

Signals on receive IF output

DC power	18 V ±1 V @ 0.7 A maximum
10 MHz reference	0 dBm nominal

Reference characteristics

Frequency	10 MHz sine wave
Stability over –5°C to +50°C	±5 x 10^{-8} maximum
Aging	1 x 10^{-7} /year maximum
Phase noise (SSB)	
100 Hz	–140 dBc/Hz maximum
1 kHz	–150 dBc/Hz maximum
10 kHz	–160 dBc/Hz maximum
100 kHz	–160 dBc/Hz maximum

External reference input

Frequency	10 MHz sine wave
Level	0 ±2 dBm
Impedance	50 Ω
Connector	BNC female

FSK communications

Mode	Compatible with BUC
Supported standards	RS232, RS485

Fault reporting

Transmit path current drain	<0.4 A or >2.25 A = fault
Receive path current drain	<100 mA or >800 mA = fault

Mains power

Voltage	115/230 V AC –15%/+20%
Frequency	47 to 63 Hz
Current	0.5 A nominal

Front panel indicators

Summary Alarm, Fan, BUC, LNB, Internal Reference, External Reference

Rear panel connectors

Transmit IF In, Transmit IF Out, Receive IF In, Receive IF Out, External 10 MHz input, RS232 (DB9), RS485 (DB15), Aux I/O (DB9), IEC mains input and Earthing terminal

ENVIRONMENTAL

Operating temperature range

Outdoor modules	–40°C to +55°C
IF Interface Unit	–5°C to +50°C

Relative humidity

Outdoor modules	100%
IF Interface Unit	95% non-condensing

Cooling

6705	Convection
6710CE/SE	Forced air
LNB	Convection
IF Interface Unit	Forced air

Weatherproofing

6705, 6710CE/SE	Sealed to 34 kPa
LNB	Weatherproof
IF Interface Unit	For indoor use only

PHYSICAL

Size

6705	355 mm L x 185 mm W x 95 mm H
6710CE/SE	355 mm L x 185 mm W x 130 mm H
LNB	200 mm L x 100 mm W x 80 mm H
IF Interface Unit	220 mm L x 483 mm W x 44 mm H

Weight

6705	6 kg
6710CE/SE	6.5 kg
LNB	0.5 kg
IF Interface Unit	3 kg

Mounting

Feed mounting	Standard
Boom mounting	Standard on N-output models
	Optional on waveguide output models
LNB	Feed mount
IF Interface Unit	19" rack mount

CE0682 CETECOM

Specifications subject to change without notice or obligation

CODAN

SATCOM SERVICES
www.satcom-services.com

Mike Termondt
Phone: 1.805.649.1384 Fax: 1.805.500.4328
mike@satcom-services.com
25 Creek Lane
Oak View, CA 93022 USA