C-Band Transceiver
5700 series

SPECIFICATIONS

TRANSMIT SECTION

IF input

Frequency range	
Narrow BW option	70 ± 20 MHz/140 ± 20 MHz selectable
Wide BW option	140 ± 40 MHz
Impedance	50/75 Ω selectable
Connector	N female
Return loss	18 dB minimum @ 50 Ω

Gain specification

Gain	
5 W	71 dB nominal
10 W, 20 W, 30 W and 40 W	74 dB nominal
Attenuator range	0 dB to 25 dB nominal
Attenuator step size	1 dB nominal
Gain flatness	
Narrow BW option	±1.0 dB maximum, 40 MHz
Wide BW option	±2.0 dB maximum, 80 MHz
Gain stability	±1.5 dB maximum, –40°C to +55°C

RF output

Frequency range*	
Band 2 (Extended)	5.850 to 6.425 GHz
Band 3 (Insat)	6.725 to 7.025 GHz (20 W and 30 W only)
Band 4 (Palapa C and Intelsat VIII-A)	6.425 to 6.725 GHz (20 W and 30 W only)
Connector	N female, or CPR137G (Band 2 only)
VSWR	1.5:1 maximum

5 W SSPA

Output power (1 dB GCP)	+38.2 dBm (6.5 W) typical +37.0 dBm (5 W) minimum
Carrier to intermodulation ratio	–29 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP

10 W SSPA

Output power (1 dB GCP)	+41.5 dBm (14 W) typical +40.0 dBm (10 W) minimum
Carrier to intermodulation ratio	–29 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP

20 W SSPA

Output power (1 dB GCP)	+44.0 dBm (25 W) typical +43.0 dBm (20 W) minimum
Carrier to intermodulation ratio	–27 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP

30 W SSPA

Output power (1 dB GCP)	+45.2 dBm (33 W) typical +44.8 dBm (30 W) minimum
Carrier to intermodulation ratio	–27 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP

40 W SSPA

Output power (1 dB GCP)	+46.0 dBm (40 W) typical +45.7 dBm (37 W) minimum
Carrier to intermodulation ratio	–25 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP

Spurious output (including harmonics)	Meets EN301443 with 53 dBi antenna gain

Phase noise (SSB)**

100 Hz	–60 dBc/Hz maximum, –75 dBc/Hz typical
1 kHz	–70 dBc/Hz maximum, –80 dBc/Hz typical
10 kHz	–80 dBc/Hz maximum, –85 dBc/Hz typical
100 kHz	–90 dBc/Hz maximum, –95 dBc/Hz typical

Synthesiser step size	1 MHz

Frequency stability

–40°C to +55°C	$\pm 2 \times 10^{-8}$
Aging	$\pm 1 \times 10^{-7}$/year

RECEIVE SECTION (EXCLUDING LNA)

RF input

Frequency range	
Band 2 (Extended)	3.625–4.200 GHz
Band 3 (Insat)	4.500–4.800 GHz
Band 4 (Palapa C and Intelsat VIII-A)	3.400–3.700 GHz
Impedance	50 Ω
Connector	N female
VSWR	1.4:1 maximum
Noise figure	18 dB typical
DC output (switch selectable)	+15 V @ 75 to 250 mA

IF output

Frequency range	
Narrow BW option	70 ± 20 MHz/140 ± 20 MHz selectable
Wide BW option	140 ± 40 MHz
Impedance	50/75 Ω selectable
Connector	N female
Return loss	18 dB minimum @ 50 Ω

Gain specification

Gain	45 dB nominal
Attenuator range	0 dB to 30 dB nominal
Attenuator step size	1 dB nominal
Gain flatness	
Narrow BW option	±1.0 dB maximum, 40 MHz
Wide BW option	±2.0 dB maximum, 80 MHz
Gain stability	+5.0/–4.0 dB maximum, –40°C to +55°C
Image rejection	50 dB minimum
Spurious output	–65 dBm maximum

Phase noise (SSB)**

100 Hz	–60 dBc/Hz maximum, –75 dBc/Hz typical
1 kHz	–70 dBc/Hz maximum, –80 dBc/Hz typical
10 kHz	–80 dBc/Hz maximum, –85 dBc/Hz typical
100 kHz	–90 dBc/Hz maximum, –95 dBc/Hz typical

Synthesiser step size	1 MHz

Frequency stability

–40°C to +55°C	$\pm 2 \times 10^{-8}$
Aging	$\pm 1 \times 10^{-7}$/year

*Band 3 and 4 versions are not CE certified.
**Excludes mains related sidebands.

LOW NOISE AMPLIFIER

Indicative specifications; LNAs with lower noise temperatures are also available.

Input

Interface	CPR229G
Noise temperature	40 K typical @ 25°C

Gain specification

Gain	50 dB minimum

Output

1 dB GCP	+5 dBm minimum
Impedance	50 Ω
Connector	N female
VSWR	2:1 maximum

TRANSMIT REJECT FILTER (OPTIONAL)

Indicative specifications; TRFs to cover bands 2, 3 and 4 are available.

Insertion loss	0.05 dB maximum
Rejection	55 dB minimum

POWER

Input voltage	42 to 72 V DC (floating input) standard 115/230 V AC, ±15% with Power Supply Unit

Power consumption

DC	5 W	95 W maximum SSPA On
	10 W	160 W maximum SSPA On
	20 W	200 W maximum SSPA On
	30 W	220 W maximum SSPA On
	40 W	280 W maximum SSPA On
		40 W maximum SSPA Off
AC	5 W	150 VA maximum SSPA On
	10 W	240 VA maximum SSPA On
	20 W	310 VA maximum SSPA On
	30 W	340 VA maximum SSPA On
	40 W	370 VA maximum SSPA On
		80 VA maximum SSPA Off (all @ nominal AC voltage)

MONITOR AND CONTROL

LNA interface

DC output	+15 V @ 75 to 400 mA
Alarm input	Current monitoring as specified, and contact closure; O/C is fault condition

Control panel facilities

Indicators: Standby, On, Warm-up, SSPA activated, Converter fault, LNA fault, SSPA fault, Temperature fault, Fan fault

Controls: Power control (off/standby/on), SSPA control (inhibit/remote/activate), Serial interface settings, LNA supply via Rx RF Input connector, Mains/Battery supply select

Remote monitor and control facilities

Serial interface standards	RS232, RS422 (RS485)
Protocol standards	ASCII, Packet (RS485)
Packet protocol address range	0 to 127

Remote monitoring functions (serial interface): Standby, On, Warm-up, SSPA activated, Converter fault, LNA fault, SSPA fault, Temperature fault, Fan fault, SSPA inhibit control, SSPA activate control*, Transmit frequency*, Receive frequency*, Transmit attenuation*, Receive attenuation*, Cable compensation*, Reference oscillator override*, SSPA alarm enable*, LNA alarm enable*, Fan alarm enable*, Temperature compensation*, Address*, SSPA mode*, Converter lock, Packet protocol*, IF impedance,*, IF frequency*, Power-up mode

Remote control functions (serial interface): Power control (standby/on), SSPA inhibit control, SSPA activate control*, Transmit frequency*, Receive frequency*, Transmit attenuation*, Receive attenuation*, Cable compensation*, Reference oscillator override*, SSPA alarm enable*, LNA alarm enable*, Fan alarm enable, Temperature compensation select*, Address range*, SSPA mode*, Packet protocol*, IF impedance*, IF frequency*, Power-up mode

All of the above serial interface functions are accessible via the Remote Controller 5570. The functions supported by the Hand-Held Controller 5560 are indicated by an (*)

Remote monitoring functions (contact closure): Standby, Warm-up, SSPA activated, Converter fault, LNA fault, SSPA fault, Temperature fault, Fan fault

Remote control functions (contact closure): Power control (standby/on), SSPA inhibit control, SSPA activate control

ENVIRONMENTAL

Converter module and SSPA module

Temperature	–40°C to +55°C
Relative humidity	100%
Cooling	Converter—Convection 5 W—Convection 10 W, 20 W, 30 W and 40 W—Forced air
Weatherproofing	Sealed to 34 kPa

Power supply unit

Temperature	–40°C to +55°C
Relative humidity	100%
Cooling	Convection
Weatherproofing	Sealed to IP65

PHYSICAL

All dimensions are measured over the connectors.

Size

Converter module	110 mm W x 410 mm D x 240 mm H
SSPA module, 5 W	
N-type output option	120 mm W x 370 mm D x 185 mm H
Waveguide output option	120 mm W x 380 mm D x 185 mm H
SSPA module, 10 W, 20 W, 30 W and 40 W	
N-type output option	165 mm W x 415 mm D x 215 mm H
Waveguide output option	165 mm W x 420 mm D x 215 mm H
Power Supply Unit	200 mm W x 160 mm D x 370 mm H

Weight

Converter module	8 kg
SSPA module, 5 W	4.5 kg
SSPA module, 10 W, 20 W 30 W or 40 W	9 kg
Power Supply Unit	10 kg

CODAN

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