CODAN

SATELLITE COMMUNICATIONS

C-Band High Power 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-type female
Return loss	18 dB minimum at 50 Ω

Gain specification

Gain	
60 W, 120 W	74 dB minimum (0 dB SSPA & Converter attenuator settings)
Attenuator ranges	0 dB to 25 dB nominal (Converter) 0 dB to 20 dB nominal (SSPA)
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	±2.0 dB maximum, –40°C to +55°C

RF output

Frequency range	5.850–6.425 GHz
Connector	CPR137-G
VSWR	1.25:1 maximum

60 W SSPA

Output power at 25°C	+47.8 dBm (60 W) typical at saturation +47.0 dBm minimum at 1 dB GCP
Carrier to intermodulation ratio	–26 dBc, two carriers, each at 6 dB OPBO from 1 dB GCP

120 W SSPA

Output power at 25°C	+50.8 dBm (120 W) typical at saturation +50.0 dBm minimum 1 dB GCP
Carrier to intermodulation ratio	–26 dBc, two carriers, each at 6 dB OPBO from 1 dB GCP

Spurious output

–60 dBc maximum at 1 dB GCP

Harmonics

–50 dBc maximum at 1 dB GCP

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	$\pm 1 \times 10^{-8}$
Aging	$\pm 1 \times 10^{-7}$/year

RECEIVE SECTION (EXCLUDING LNA)

RF input

Frequency range	3.625 to 4.200 GHz
Impedance	50 Ω
Connector	N-type 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-type female
Return loss	18 dB minimum at 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	±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	$\pm 1 \times 10^{-8}$
Aging	$\pm 1 \times 10^{-7}$/year

*Excludes mains related sidebands

LOW NOISE AMPLIFIER

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

Input

Interface	CPR229–G
Noise temperature	40 K at 25°C

Gain specification

Gain	50 dB minimum

Output

1 dB GCP	+5 dBm minimum
3rd order intercept	+16 dBm minimum
Impedance	50 Ω
Connector	N-type female
VSWR	1.5:1 typical

TRANSMIT REJECT FILTER (OPTIONAL)

Indicative specifications

Insertion loss	0.05 dB maximum
Rejection	55 dB minimum

POWER

Input voltage		104 to 274 V AC, 47 to 63 Hz
Power consumption		
AC	60 W	440 VA @ 115/230 V AC maximum SSPA On
	120 W	760 VA @ 115/230 V AC maximum SSPA On

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

Monitor and control facilities (converter)

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

Monitor and control facilities (SSPA)

Indicators: Online, Alarm, Standby, Maintenance

Display: Output power, Heatsink temperature, Alarms

Controls: State, Gain, Compensation

Remote monitor and control facilities (only via converter)

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, 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*

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*

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 asterisk (*)

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

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

ENVIRONMENTAL

Converter module

Temperature	–40°C to 55°C
Relative humidity	100%
Cooling	Convection
Weatherproofing	Sealed to IP68

SSPA module

Temperature	–40°C to +50°C
Relative humidity	100%
Cooling	Forced air
Weatherproofing	Sealed to IP66

PHYSICAL

All dimensions are measured over the connectors.

Size

Converter module	110 mm W x 410 mm D x 240 mm H
SSPA module, 60/120 W	280 mm W x 355 mm D x 495 mm H

Weight

Converter module	8 kg
SSPA module, 60/120 W	27 kg

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