

5700 series

C-Band transceiver

TRANSMIT SECTION

IF input

Frequency Range	
- Narrow BW Option	70 ±20MHz/140 ±20MHz selectable
- Wide BW Option	140 ±40MHz
Impedance	50/75 ohms selectable
Connector	N-type female
Return loss	18dB minimum

Gain specification

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

RF Output

Frequency range	
- Band 1 (Standard)	5.925 to 6.425GHz
- Band 2 (Extended)	5.850 to 6.425GHz
- Band 3 (Insat)	6.725 to 7.025GHz
- Band 4 (Palapa C & Intelsat VIII A)	6.425 to 6.700GHz

5W SSPA

Output power (1dB GCP)	+37dBm minimum
Connector	N-type female, or CPR 137-G (Bands 1&2 only)
VSWR	1.4:1 maximum
Carrier to intermodulation ratio	-29dBc, two carriers, each at 6dB OPBO from 1dB GCP

10W SSPA

Output power (1dB GCP)	+40dBm minimum
Connector	N-type female, or CPR 137-G (Bands 1&2 only)
VSWR	1.4:1 maximum
Carrier to intermodulation ratio	-29dBc, two carriers, each at 6dB OPBO from 1dB GCP

20W SSPA

Output power (1dB GCP)	+43dBm minimum
Connector	N-type female, or CPR 137-G (Bands 1&2 only)
VSWR	1.4:1 maximum
Carrier to intermodulation ratio	-27dBc, two carriers, each at 6dB OPBO from 1dB GCP

Spurious output

-60dBc maximum at 1dB GCP

Harmonics

-50dBc maximum at 6dB OPBO from 1dB GCP

Phase noise (SSB)

100Hz	-60dBc/Hz
1kHz	-70dBc/Hz
10kHz	-80dBc/Hz
100kHz	-90dBc/Hz

Synthesiser step size

1MHz

Frequency stability

-40°C to +55°C	±1 x 10 ⁻⁸
Aging	±1 x 10 ⁻⁷ /year

Cable compensation

Range	
- Narrow BW Option	0dB to +1.2dB nominal, 16 steps
- Wide BW Option	0dB to +2.5dB nominal, 16 steps

RECEIVE SECTION (Excluding LNA)

RF Input

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

IF Output

Frequency Range	
- Narrow BW Option	70 ±20MHz/140 ±20MHz selectable
- Wide BW Option	140 ±40MHz
Impedance	50/75 ohms selectable
3rd order intercept	+15dBm minimum
Connector	N-type female
Return loss	18dB minimum

Gain specification

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

Phase noise (SSB)

100Hz	-60dBc/Hz
1kHz	-70dBc/Hz
10kHz	-80dBc/Hz
100kHz	-90dBc/Hz

Synthesiser step size

1MHz

Frequency stability

-40°C to +55°C	±1 x 10 ⁻⁸
Aging	±1 x 10 ⁻⁷ /year

LOW NOISE AMPLIFIER

Indicative specifications; LNAs to cover other frequency bands or with lower noise temperatures also available.

Input

Frequency range	3.625 to 4.200GHz
Interface	CPR229-G
VSWR	1.3:1 typical
Noise temperature	40K at 25°C (other noise temperatures available)

Gain specification

Gain	50dB minimum
Gain flatness	±1.5dB maximum full band

Output

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

TRANSMIT REJECT FILTER

Indicative specifications; TRFs to cover other frequency bands also available.

Pass band 3.625 to 4.200GHz

Insertion loss 0.05dB maximum

Reject band 5.850 to 6.425GHz

Rejection 55dB minimum

GENERAL

Input voltage 37 to 60V DC (floating input) standard.
115/230V, -15% +20% AC with optional
Mains Supply module, type 5583 or
Interface unit with mains supply, type 5584

Power consumption

DC	5W	95W maximum SSPA On
	10W	160W maximum SSPA On
	20W	200W maximum SSPA On
		40W maximum SSPA Off
AC		310VA nominal @ nominal AC voltage, 20W SSPA On

LNA DC/ALARM

Facilities

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

Monitor and control facilities

Controls (transparent access cover) Power control, (off/stand-by/on), SSPA control, (inhibit/remote/activate), Serial interface settings, LNA supply via Rx RF Input connector, Mains/Battery supply select

Indicators (transparent access cover) Stand-by, On, Warm-up, SSPA Activated, Converter fault, LNA fault, SSPA fault, Temperature fault, Fan fault

Remote Monitor and control facilities

Serial interface standards RS232 RS422 (RS485)

Protocol standards ASCII Packet (RS485)

Packet protocol address range 0 to 127

Remote control functions (serial interface) Power control, stand-by/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 select (ASCII mode only)

Remote monitoring functions (serial interface) Stand-by, 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 select, Address (ASCII mode only)

Remote control functions* (contact closure) Power control, (stand-by/on), SSPA inhibit control, SSPA activate control

Remote monitoring functions* (contact closure) Stand-by, Warm-up, SSPA activated, Converter fault, LNA fault, SSPA fault, Temperature fault, Fan fault

*An optional Interface unit, type 5584 is available to duplicate the main controls and status indicators of the transceiver at a remote location.

ENVIRONMENTAL

Converter module and SSPA module

Temperature -40°C to +55°C (5710 only to +40°C when convection cooled)

Relative humidity 100%

Cooling
Converter - Convection
5W - Convection
10W - Convection or Forced air
20W - Forced air
Sealed to 34kpa

Weatherproofing

Mains Supply module (optional)

Temperature -40°C to +55°C

Relative humidity 100%

Cooling Convection

Weatherproofing Sealed to IP65

Interface unit (optional)

Temperature -10°C to +55°C

Relative humidity 95% @ 40°C, non-condensing

Cooling Convection

PHYSICAL

Note All dimensions are over connectors.

Size

Converter module 110mm W x 410mm D x 240mm H

SSPA module, 5W

- N-type Output option 120mm W x 295mm D x 185mm H

- Waveguide Output option 120mm W x 340mm D x 185mm H

SSPA module, 10W

• Forced air cooled

- N-type Output option 160mm W x 320mm D x 210mm H

- Waveguide Output option 160mm W x 370mm D x 210mm H

• Convection cooled

- N-type Output option 160mm W x 320mm D x 170mm H

- Waveguide Output option 160mm W x 370mm D x 170mm H

SSPA module, 20W

- N-type Output option 160mm W x 320mm D x 210mm H

- Waveguide Output option 160mm W x 370mm D x 210mm H

Interface unit (optional) 483mm W x 330mm D x 2RU (89mm) H

Mains supply module (optional) 350mm W x 160mm D x 360mm H

Weight

Converter module 8kg

SSPA module, 5W 4.5kg

SSPA module, 10W or 20W 9kg

Interface unit (optional)

• with AC mains supply 9kg

• without AC mains supply 4kg

Mains supply module (optional) 11kg



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