

Ku-Band Transceiver

5900 series

SPECIFICATIONS

TRANSMIT SECTION

IF input	
Frequency range	70 ± 20 MHz/140 ± 20 MHz selectable
Narrow BW option	140 ± 40 MHz
Wide BW option	
Impedance	50/75 Ω selectable
Connector	N-type female
Return loss	18 dB minimum
Gain specification	
Gain	
4 W	64 dB nominal
8 W	68 dB nominal
16 W	71 dB nominal
Attenuator range	0 dB to 25 dB nominal
Attenuator step size	1 dB nominal
Gain flatness	
Over IF	
Narrow BW option	±1.0 dB maximum, 40 MHz
Wide BW option	±2.0 dB maximum, 80 MHz
Over frequency range	±2.0 dB maximum
Gain stability	±1.5 dB maximum, -40°C to +55°C
RF output	
Frequency range	14.0 to 14.5 GHz
Connector	WR75, PBR120 flange with M4 tapped holes
VSWR	1.5:1 maximum
4 W SSPA	
Output power (1 dB GCP)	+36 dBm minimum
Carrier to intermodulation ratio	-27 dBc, two carriers, each at 6 dB OPBO from 1 dB GCP
8 W SSPA	
Output power (1 dB GCP)	+39 dBm minimum
Carrier to intermodulation ratio	-26 dBc, two carriers each at 6 dB OPBO from 1 dB GCP
16 W SSPA	
Output power (1 dB GCP)	+42 dBm minimum
Carrier to intermodulation ratio	-25 dBc, two carriers each at 6 dB OPBO from 1 dB GCP
Spurious output	Meets EN 301 428 with 54 dBi antenna gain
Phase noise (SSB)*	
100 Hz	-60 dBc/Hz maximum
1 kHz	-70 dBc/Hz maximum
10 kHz	-75 dBc/Hz maximum
100 kHz	-85 dBc/Hz maximum
Synthesiser step size	1 MHz
Frequency stability	
-40°C to +55°C	±2 × 10 ⁻⁸
Aging	±1 × 10 ⁻⁷ /year

RECEIVE SECTION (EXCLUDING LNB)

RF input	
Frequency range	950 to 1700 MHz
Impedance	50 Ω
Connector	N-type female
VSWR	1.4:1 maximum
Noise figure	20 dB typical
DC output (switch selectable)	+15 V @ 30 to 425 mA
10 MHz output	0 dBm ± 1 dB
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
3rd order intercept	+15 dBm minimum
Connector	N-type female
Return loss	18 dB minimum
Gain specification	
Gain	35 dB nominal
Attenuator range	0 dB to 25 dB nominal
Attenuator step size	1 dB nominal
Gain flatness	
Over IF	
Narrow BW option	±1.0 dB maximum, 40 MHz
Wide BW option	±2.0 dB maximum, 80 MHz
Over frequency range	±2.0 dB maximum
Gain stability	±3.0 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
1 kHz	-70 dBc/Hz maximum
10 kHz	-80 dBc/Hz maximum
100 kHz	-90 dBc/Hz maximum
Synthesiser step size	1 MHz
Frequency stability	
-40°C to +55°C	±2 × 10 ⁻⁸
Aging	±1 × 10 ⁻⁷ /year

LOW NOISE BLOCK CONVERTER

Indicative specifications.

Input

Frequency range	
Band 1	10.95 to 11.7 GHz
Band 2	11.7 to 12.2 GHz
Band 3	12.25 to 12.75 GHz
Interface	WR75
VSWR	2.5:1 typical

Noise figure

1.2 dB at 25°C maximum
1.0 dB typical

Gain specification

Gain	60 dB typical
Gain flatness	±1.5 dB maximum full band

Output

1 dB GCP	0 dBm minimum
3rd order intercept	+11 dBm minimum
Impedance	50 Ω
Connector	N-type female
VSWR	1.5:1 typical

TRANSMIT REJECT FILTER (OPTIONAL)

Pass band	10.95 to 12.75 GHz
Insertion loss	0.05 dB maximum
Reject band	13.75 to 14.5 GHz
Rejection	55 dB maximum

GENERAL

Input voltage	42 to 72 V DC (floating input) standard 115/230 V AC ± 15% with power supply unit
Power consumption	
DC 4 W	115 W maximum SSPA On
8 W	165 W maximum SSPA On
16 W	250 W maximum SSPA On 50 W maximum SSPA Off
AC 4 W	180 VA typ. @ nom. AC voltage SSPA On
8 W	260 VA typ. @ nom. AC voltage SSPA On
16 W	390 VA typ. @ nom. AC voltage SSPA On

MONITOR AND CONTROL

Control panel facilities

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

Controls: Power control (off/standby/on), SSPA (inhibit/remote/activate), Serial interface settings, LNB 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)
Protocol address range:	0 to 127

Remote monitoring functions (serial interface): Standby, On, Warm-up, SSPA activated, SSPA output power, Converter and SSPA temperatures, Converter fault, LNB 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, LNB alarm enable, Temperature compensation select, Packet address (ASCII mode only), Packet address range (ASCII mode only), Packet protocol select (ASCII mode only), SSPA mode select, Converter lock, Status change poll, 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, LNB alarm enable, Temperature compensation select, Address range select (ASCII mode only), Packet protocol select (ASCII mode only), SSPA mode select, Reset, Reset change bits, Power-up mode

Remote monitoring functions (contact closure): Standby, Warm-up, SSPA activated, Converter fault, LNB 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 4 W—Convection 8 W, 16 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, 4 W	140 mm W x 300 mm D x 145 mm H
SSPA module, 8 W, 16 W	140 mm W x 335 mm D x 195 mm H
Power Supply Unit	200 mm W x 160 mm D x 370 mm H

Weight

Converter module	8 kg
SSPA module, 4 W	5.1 kg
SSPA module, 8 W, 16 W	6 kg
Power Supply Unit	9 kg

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Specifications subject to change without notice or obligation

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