

Ku-Band High Power 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 female
Return loss	18 dB minimum @ 50 Ω
Gain specification	
Gain	78 dB minimum (0 dB SSPA & Converter attenuator settings)
Attenuator ranges	0 to 25 dB nominal (Converter) 0 to 20 dB nominal (SSPA)
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
VSWR	1.25:1 maximum
Output power (1 dB GCP)	+46.7 dBm (47 W) typical +46.0 dBm (40 W) minimum
Carrier to intermodulation ratio	-25 dBc, two carriers, each @ 6 dB OPBO from 1 dB GCP
Spurious output	-60 dBc maximum @ 1 dB GCP
Harmonics	-50 dBc maximum @ 1 dB GCP
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 female
VSWR	1.4:1 maximum
Noise figure	20 dB typical
DC output (switch selectable)	+15 V @ 75 to 400 mA
10 MHz output	0 dBm ± 1 dB
IF output	
Frequency range	70 ± 20 MHz/140 ± 20 MHz selectable
Narrow BW option	140 ± 40 MHz
Wide BW option	
Impedance	50/75 Ω selectable
3rd order intercept	+15 dBm minimum
Connector	N female
Return loss	18 dB minimum @ 50 Ω
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
L-Band IF monitor port	
Output frequency range	950 to 1700 MHz
Gain	10 ± 3 dB Rx RF I/P to L-Band monitor
Gain ripple	±2 dB maximum
Connector	N female
Impedance	50 Ω
Return loss	15 dB minimum

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 temperature

75K @ 25°C maximum

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 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 minimum

POWER

Input voltage

104 to 274 V AC, 47 to 63 Hz

Power consumption

500 VA typical, SSPA on

MONITOR AND CONTROL

Monitor and control facilities (converter)

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

Controls: Power control (off/standby/on), SSPA control (inhibit/remote/activate), Serial interface settings, LNB 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

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 temperature, Converter fault, LNB 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, 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

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

Remote monitoring functions (contact closure): Standby, Warm-up, SSPA activated, Converter fault, LNB 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 34 kPa

SSPA module

Temperature	-40°C to +55°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	280 mm W x 355 mm D x 495 mm H

Weight

Converter module	8 kg
SSPA module	27 kg

CE0682

CETECOM™

Specifications subject to change without notice or obligation

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12-20127-EN Issue 5: 10/04

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