

Ku-Band High Power Transceiver

5900 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	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 x 10 ⁻⁸	
Aging	±1 x 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	
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 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 x 10 ⁻⁸	
Aging	±1 x 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

*Meets Intelsat Phase Noise requirement using Limit-2 for data rates up to 8 Mbps.
Excludes mains related sidebands.

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



www.satcom-services.com

Mike Termondt
Phone: 1.805.649.1384 Fax: 1.805.500.4328
mike@satcom-services.com
25 Creek Lane
Oak View, CA 93022 USA