

# Ku-Band High Power Transceiver

## 5900 series

### SPECIFICATIONS

#### TRANSMIT SECTION

<b>IF input</b>	
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 at 50 Ω
<b>Gain specification</b>	
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
<b>Gain flatness</b>	
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 +50°C
<b>RF output</b>	
Frequency range	14.0 to 14.5 GHz
Connector	WR75
VSWR	1.25:1 maximum
Output power (1 dB GCP)	+46 dBm (40 W) minimum at 25°C
Carrier to intermodulation ratio	-25 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
<b>Phase noise (SSB)*</b>	
100 Hz	-60 dBc/Hz maximum
1 kHz	-70 dBc/Hz maximum
10 kHz	-75 dBc/Hz maximum
100 kHz	-85 dBc/Hz maximum
<b>Synthesiser step size</b>	1 MHz
<b>Frequency stability</b>	
-40°C to +55°C	±2 × 10 <sup>-8</sup>
Aging	±1 × 10 <sup>-7</sup> /year

#### RECEIVE SECTION (EXCLUDING LNB)

<b>RF input</b>	
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 @ 75 to 400 mA
10 MHz output	0 dBm ±1 dB
<b>IF output</b>	
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-type female
Return loss	18 dB minimum at 50 Ω
<b>Gain specification</b>	
Gain	35 dB nominal
Attenuator range	0 dB to 25 dB nominal
Attenuator step size	1 dB nominal
<b>Gain flatness</b>	
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
<b>Image rejection</b>	50 dB minimum
<b>Spurious output</b>	-65 dBm maximum
<b>Phase noise (SSB)*</b>	
100 Hz	-60 dBc/Hz maximum
1 kHz	-70 dBc/Hz maximum
10 kHz	-80 dBc/Hz maximum
100 kHz	-90 dBc/Hz maximum
<b>Synthesiser step size</b>	1 MHz
<b>Frequency stability</b>	
-40°C to +55°C	±2 × 10 <sup>-8</sup>
Aging	±1 × 10 <sup>-7</sup> /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 @ 25°C maximum 1.0 dB typical
--------------	---

#### Gain specification

Gain	60 dB typical
Gain flatness	±1.5 dB minimum 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 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 +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	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

Head Office

[www.codan.com.au](http://www.codan.com.au)

12-20127-EN Issue 4: 2/02

Codan Limited  
ABN 77 007 590 605  
81 Graves Street  
Newton SA 5074  
AUSTRALIA  
Telephone +61 8 8305 0311  
Facsimile +61 8 8305 0411  
[asiasales@codan.com.au](mailto:asiasales@codan.com.au)

Codan Limited  
ABN 77 007 590 605  
532 Seventeen Mile Rocks Road  
Sinnamon Park Qld 4073  
AUSTRALIA  
Telephone +61 7 3291 6333  
Facsimile +61 7 3291 6350

Codan (UK) Ltd  
Gostrey House  
Union Road  
Farnham Surrey GU9 7PT  
UNITED KINGDOM  
Telephone +44 1252 717 272  
Facsimile +44 1252 717 337  
[uksales@codan.com.au](mailto:uksales@codan.com.au)

Codan US, Inc.  
10660 Wakeman Ct  
Manassas VA 20110  
USA  
Telephone +1 703 361 2721  
Facsimile +1 703 361 3812  
[ussales@codan.com.au](mailto:ussales@codan.com.au)



CODAN



QUALITY  
MANAGEMENT  
SYSTEM  
ISO 9001 NATA CERTIFIED