

# XSAT-7080 X-Band Transceivers



5 to 25 Watt



50 Watt



100 Watt

## INTRODUCTION

Comtech EF Data developed the XSAT-7080 X-Band Transceiver utilizing a talented team of RF engineers with many years of experience in designing and manufacturing satellite transceivers and other RF products. The XSAT-7080 family of 5 to 25 Watt, 50 Watt, and 100 Watt units is designed to provide the user with superior performance, long-term reliability and ease of installation with a very price competitive product. The XSAT-7080 is the perfect choice for your VSAT application for TDMA, DAMA, and SCPC/MCPC sites requiring higher power.

The XSAT-7080 is available in a 1:1 redundant configuration

## FULL RATED POWER

The XSAT-7080 delivers the full rated power, or more, measured at the 1 dB compression point and at the output flange. The user realizes the useable output power that is available and receives full value for the investment.

## PHASE NOISE

The dual synthesizers in the XSAT-7080 deliver superior phase noise performance, exceeding Intelsat specifications by a very comfortable margin. The user receives the benefits of spectral purity and the ability to go into multi-carrier environments with less concern.

## THIRD ORDER INTERCEPT (TOI)

The design of the XSAT-7080 gives the user a high TOI that allows multi-carrier applications without the concerns normally associated with low power environments. The XSAT-7080 delivers performance usually found only in SSPA systems.

## SMALL, COMPACT DESIGN

The XSAT-7080 offers a 5 Watt, 10 Watt, 25 Watt, 50 Watt, and 100 Watt transceivers. This design allows quick, easy installation for these higher-powered transceivers. With the use of the EDMAC features of the companion CDM family of modems, even installation can be made without the requirement for expensive, heavy test equipment.

## FULL MONITOR AND CONTROL

Designed into the XSAT-7080 are a variety of methods to monitor and control this device. The XSAT-7080 offers full Monitor and Control from a small, convenient Hand-Held Terminal or easy access via RS-232 or RS-485 connections. Full remote M&C can be achieved through the companion CDM Modem family or the PC Windows based EDMAC proprietary monitor and control software.

# XSAT-7080 X-Band Transceivers

## TRANSMIT

Frequency RF	7900 to 8400 MHz	
Frequency IF	70 MHz ± 18 MHz	
	140 MHz ± 36 MHz (Optional)	
Output Power, P <sub>1dB</sub>	5W	37 dBm
	10W	40 dBm
	25W	44 dBm
	50W	47 dBm
	100W	50 dBm
Gain	5W	65 dB
	10W	68 dB
	25W	71 dB
	50W	74 dB
	100W	77 dB
Gain Flatness	±0.75 dB full RF band	
	±0.75 dB per 36 MHz	
Gain Stability	±0.25 dB at constant C	
	±1.00 dB from -40° to +55°C (-40° to 131°F)	
Carrier Mute	-70 dBc	
Inter-Modulation	-33 dBc for two carriers at -6 dB OPBO from rated power	
Second Harmonic Spurious	-55 dBc	
	AC line harmonics	-45 dBc
	Carrier related, <500 kHz	-60 dBc
	All other in-band	-65 dBc
AM to PM Conversion	3.0 Degrees at 6 dB OPBO from rated power	
RF Output VSWR	1.25:1	
RF Output Connector	5W, 10W, and 25W	Type N Female
	50W and 100W	CPR-112

## RECEIVE

Frequency RF	7250 to 7750 MHz	
Frequency IF	70 MHz ±18 MHz	
	140 MHz ±36 MHz (Optional)	
Gain, without LNA	45 dB	
Gain Flatness, without LNA	± 0.75 dB full RF band	
	± 0.75 dB per 36 MHz	
Gain Stability, without LNA	± 0.25 dB constant temperature	
	± 1.00 dB -40° to +55°C (-40° to 131°F)	
Output Power, P <sub>1dB</sub>	+13 dBm	
Two Tone Inter-Modulation	-50 dBc for two tones at 0 dBm each, 1 MHz apart	
Image Rejection	-60 dBc	
RF Input VSWR	1.25:1	
RF Input Connector	Type N Female	
IF Output Impedance	50Ω	
IF Output VSWR	1.25:1	
IF Output Connector	Type N Female	

## COMMON

Conversion	Dual, no spectral inversion	
Frequency Step Size	1.0 and 2.5 MHz automatic	
Frequency Stability	1x10 <sup>-9</sup> /day	
	1x10 <sup>-7</sup> /year	
Attenuation Steps	40° to +55°C 1x10 <sup>-8</sup> /Temperature	
	Tx: 0 to 25 dB in 0.25 dB steps	Rx: 0 to 20 dB in 0.25 dB steps
Phase Noise	100 Hz	-66 dBc/Hz
	1 kHz	-76 dBc/Hz
	10 kHz	-86 dBc/Hz
	100 kHz	-96 dBc/Hz
Group Delay	Linear	0.1 ns/MHz
	Parabolic	0.02 ns/MHz <sup>2</sup>
	Ripple	1 ns p-p

## MONITOR & CONTROL

Methods	Both RS-485 and RS-232 Serial Interface	
	Handheld controller, optional	
Commands	Set Tx frequency	
	Set Rx frequency	
	Set Tx attenuation	
	Set Rx attenuation	
	Report Tx output power	
	Mute Tx	
	Report internal temperature	
	Report power supply voltages	
	Set time	
	Set date	
	Faults	Up converter functions
		Down converter functions
		Up converter synthesizers
Down converter synthesizers		
Internal reference oscillator		
	LNA current fault	
	Over temperature condition	

## ENVIRONMENTAL

Operating Temperature	-40° to +55°C (-40° to 131°F) Operating				
Storage Temperature	-50° to +75°C (-58° to 167°F) Storage				
Altitude	15,000 ft. mean sea level				
Humidity	0 to 100 Percent, Relative				
Prime Power	90 to 260 VAC Standard				
	47 to 63 Hz Standard				
	48 VDC Optional				
Dimensions	5W to 25W	11H x 8W x 11D inch			
		28H x 20W x 28D cm)			
	50W	9.75H x 10W x 23D inch			
	(24.77H x 25.4W x 58.42D cm)				
	100W	10.60 H x 12.5W x 26D inch			
		(26.92H x 31.75W x 66.04D cm)			
Weight	5W to 25W	36 lbs (16 kg)			
	50W	65 lbs (29 kg)			
	100W	80 lbs (40 kg)			
Low Noise Amplifier	Customer defined				
RF Power	5W	10W	25W	50W	100W
AC Power	165W	220W	275W	450W	825W

