CSAT-5060 C-Band Transceivers Ser

50W P_{1dB}
(63W P_{sat})

5 to 25W P_{1dB}
(6 to 32W P_{sat})

100 & 125W P_{1dB}
(125 & 150W P_{sat})

INTRODUCTION

The CSAT-5060 C-Band Transceiver provides superior performance, long-term reliability, and ease of installation.

A very price competitive product, the CSAT-5060 embodies the best design efforts of Comtech EF Data's highly experienced RF engineering team.

APPLICATION

The CSAT-5060 is the perfect choice for any VSAT point-to-point application, including:

- TDMA
- DAMA
- SCPC/MCPC

FULL RATED POWER

The CSAT-5060 delivers the full rated power, or more, measured at the 1 dB compression point and at the output flange. You will know the useable output power you are paying for, and can receive full value for your investment.

PHASE NOISE

The dual synthesizers in the CSAT-5060 deliver superior phase noise performance, exceeding Intelsat specifications by a substantial margin. Your applications will benefit from outstanding spectral purity and the ability to operate in multi-carrier environments with less worry.

THIRD ORDER INTERCEPT (TOI)

The design of the CSAT-5060 provides a high TOI that allows multi-carrier applications without the issues normally encountered in low power environments. The CSAT-5060 delivers performance usually found only in split converter SSPA systems.

SMALL, COMPACT DESIGN

The CSAT-5060 transceiver is enclosed in a single unit chassis. This design allows quick, easy installation for all models in this family of transceivers.

FULL MONITOR AND CONTROL (M&C)

A variety of full monitor and control methods are designed into the CSAT-5060:

- Convenient connection using an optional small, hand-held terminal
- Easy access via EIA-232 or EIA-485 connections
- Remote management via the CDM modem family or the PC-based SatMac proprietary M&C software

REDUNDANCY

The CSAT-5060 is available in a 1:1 redundant configuration.

10dBm Option

This transceiver is designed to mate with an external high power SSPA (Example: CEFD HPODS) or TWTA to provide even higher output power.

CSAT-5060 C-Band Transceivers

TRANSMIT

Frequency RF	5845 to 6425 MHz Standard 6425 to 6725 MHz (Optional Extended) 5850 to 6650 MHz (Optional Wide) 5845 to 6725 MHz (Optional Super Wide)		
Frequency IF	70 MHz ± 18 MHz 140 MHz ± 36 MHz (Optional)		
Output Power	Model	P_{1dB}	P_{sat} Typical
	10dBm	10 dBm	
	5W	5W (37dBm)	38dBm (6W)
	10W	10W (40dBm)	41dBm (12W)
	25W	25W (44dBm)	45dBm (32W)
	50W	50W (47dBm)	48dBm (63W)
	100W	100W (50dBm)	51dBm (125W)
	125 W	125W (51 dBm)	51.8dBm(150W)
Gain	10 dBm	25 dB	
	5W 65	dB	
	10W 68	dB	
	25W 71	dB	
	50W 74	dB	
	100 & 125W	77 dB	
Attenuator Range	25 dB in 0.25 dB steps		
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 -40º to +55ºC (-40º to 131ºF)		
Carrier Mute	-70 dBc		
Inter-Modulation	-28 dBc typical for two carriers each at 6 dB OPBO from rated power (3 dB total OPBO)		
Second Harmonic	-55 dBc		
Spurious	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	10dBm, 5W, 10W, & 25W		Type N Female
	50W, 100W, & 125W		CPR-137G
IF Input Impedance	50Ω		
IF Input VSWR	1.25:1		
IF Input Connector	Type N Female		

RECEIVE

Frequency RF	3625 to 4200 MHz 3400 to 4200 MHz (Optional)
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 -40º to +55ºC (-40º to 131ºF)
Output Power, P1dB	+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	$1x10^{-9}$/day	
	$1x10^{-7}$/year	
	40º to +55ºC $1x10^{-8}$/Temperature	
Attenuation Steps	Tx: 0 to 25dB in 0.25 dB steps Rx: 0 to 20dB in 0.25 dB steps	
Phase Noise	100 Hz	-66dBc/Hz
	1 kHz	-76dBc/Hz
	10 kHz	-86dBc/Hz
	100 kHz	-96dBc/Hz
Group Delay	Linear 0.1	ns/MHz
	Parabolic 0.02	ns/MHz^2
	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	-40º to +55ºC (-40º to 131ºF) Operating
Storage Temperature	-50º to +75ºC (-58º to 167ºF) 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	10dBm to 25W 8H x 8W x 11D inches 20H x 20W x 28D cm)
	50W 9.75H x 10W x 23D inches (24.77H x 25.4W x 58.42D cm)
	100& 125W 10 H x 12.5W x 26D inch (25.4H x 31.75W x 66.04D cm)
Weight	5W to 25W 36 lbs (16 kg)
	50W 65 lbs (29 kg)
	100 & 125W 80 lbs (40 kg)
Low Noise Amplifier	Customer defined
RF Power	10dBm 5W 10W 25W 50W 100W 125W
AC Power	120W 150W 200W 250W 410W 750W 850W
	Steady-State True AC Power Requirement (110 VAC)