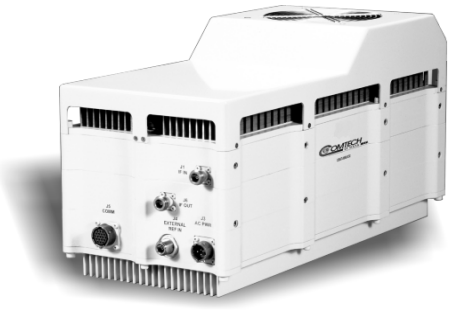
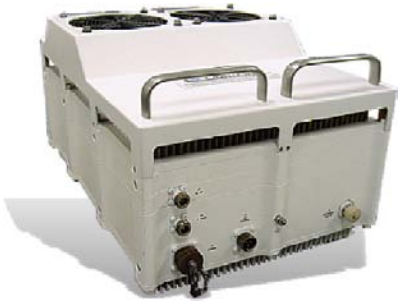
CSAT-6070 C-Band Transceivers

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



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



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

INTRODUCTION

The CSAT-6070 C-Band Transceiver provides superior performance, long-term reliability, and ease of installation.

APPLICATION

The CSAT-6070 is the perfect choice for any VSAT point-to-point application, including:

- TDMA
- DAMA
- SCPC/MCPC

FULL RATED POWER

The CSAT-6070 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-6070 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-6070 provides a high TOI that allows multi-carrier applications without the issues normally encountered in low power environments. The CSAT-6070 delivers performance usually found only in split converter SSPA systems.

SMALL, COMPACT DESIGN

The CSAT-6070 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-6070:

- 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-6070 is available in a 1:1 redundant configuration.

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CSAT-6070 C-Band Transceivers

TRANSMIT

Frequency RF	6725 to 7025 MHz	
Frequency IF	70 MHz ± 18 MHz	
	140 MHz ± 36 MHz (Optional)	
Output Power, P_{1dB}	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 -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	Type N Female	
IF Input Impedance	50Ω	
IF Input VSWR	1.25:1	
IF Input Connector	Type N Female	

RECEIVE

Frequency RF	4500 to 4800 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 -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	5W, 10W, and 25W	Type N Female
	50W and 100W	CPR-137G
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	5W 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)
	100W	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)
	100W	80 lbs (40 kg)
Low Noise Amplifier	Customer defined	
RF Power	5W 10W 25W 50W 100W	
AC Power	150W 200W 250W 410W 750W	
	Steady State True AC Power Requirement (110 VAC)	