



The **ACTR-X family** of Transceivers is designed for the most challenging X-band **professional & military** satellite communication systems (ground, SOTP, SOTM, maritime, etc.). Latest technology is applied to obtain the best linearity, phase noise, gain stability and linear power according to **MIL-STD-188-164C**. The ACTR-X family is a **high reliability** solution designed for **harsh environmental conditions**, with every single production unit **fully tested** in an environmental chamber and delivered with a complete factory acceptance test report.

TRANSMITTER SPECIFICATIONS

Input frequency	950 to 1450 MHz
Input L-Band VSWR (50 Ω)	< 1.5:1
Output frequency	7.9 to 8.4 GHz
Output X-band VSWR (50 Ω)	< 1.3:1
Spectrum inversion	None
Max. input level without damage	+10 dBm
P1dB (typ)	53.0 dBm
Gain	75 dB min
Gain flatness	±1.5 dB over whole BW ±0.75 dB over 40 MHz
Gain stability (24 hours)	±0.25 dB @ const. temp.
Gain variation over temperature	±1.5 dB (±2.0 dB option HP3)
Attenuation adjustment range	20 dB with 0.5 dB steps
Mute	> 50 dB
Noise figure	≤ 15 dB @ max. gain
Output noise power density	< -155 dBm/Hz (7.25-7.75 GHz)
Spurious @ P1dB	< -60 dBc
Harmonics @ P1dB	< -50 dBc
Mains related spurious	< -35 dBc
SSB added spurious	< -41 dBc
TOI @ P1dB - 3 dB	< -25 dBc (2 tones Δf=5 MHz)
Sample port	-40 dBc ± 2 dB

RECEIVER SPECIFICATIONS

Input frequency	7.25 to 7.75 GHz
Input X-Band VSWR (50 Ω)	< 1.5:1
Output frequency	950 to 1450 MHz
Output L-band VSWR (50 Ω)	< 1.5:1
P1dB (min)	+5 dBm
Gain	40 ± 1 dB
Gain flatness	±1.5 dB over whole BW ±0.75 dB over 40 MHz
Gain stability (24 hours)	±0.25 dB @ const. temp.
Gain variation over temperature	±1.5 dB (±2.0 dB option HP3)
Attenuation adjustment range	20 dB with 0.5 dB steps
Noise figure	≤ 15 dB @ max. gain
Dependent spurious	< -60 dBc @ P _{OUT} = 0 dBm
Independent spurious	< -60 dBm
LNA power supply	+15 V _{DC} (500 mA max.)
LNA alarm	Current sensing

LOCAL OSCILLATOR

Output phase noise (IESS-308/309 – 8 dB)	
100 Hz	-70 dBc/Hz
1 kHz	-78 dBc/Hz
10 kHz	-88 dBc/Hz
100 kHz	-105 dBc/Hz
External reference	10 MHz (0 dBm ± 3 dB)

POWER SUPPLY

AC input voltage	85-265 V _{AC} (47-63 Hz)
Consumption	1500 W @ P1dB

MECHANICAL SPECIFICATIONS

Size (LxWxH)	495 x 265 x 255 mm	19.5 x 10.4 x 10.0 in
Weight	25.0 kg	55.0 lbs
Finish	RAL 9003 (White)	

ENVIRONMENTAL SPECIFICATIONS

Storage temperature	-40 °C to +85 °C
Operating temperature	-20 °C to +60 °C
Relative humidity	up to 95%
Operating altitude	up to 3000 m

INTERFACES

All mating connectors provided

TX input (L-Band + Ext. Ref.)	Type N(F) 50 Ω
TX output (X-Band)	WR112 CPRG flange
TX output sample (X-Band)	Type N(F) 50 Ω
RX input (X-Band)	Type N(F) 50 Ω
RX output (L-Band)	Type N(F) 50 Ω
M&C (RS232/485)	62IN12E12-14S-4-622
M&C (Ethernet/SNMP)	62IN12E12-8S-4-622 (as option)
Power supply	62IN12E12-3P-4-622
LNA Power supply	62IN12E8-4S-4-622

OPTIONS

X-band	L-band	LO freq.	Standard freq. option
7.90 to 8.40 GHz	950 to 1450 MHz	6.950 GHz	ACTR-X200W-E1-V1
7.25 to 7.75 GHz	950 to 1450 MHz	6.300 GHz	

HP2	Internal reference (Auto external on presence)
HP3	Operating temperature -40 °C to +60 °C
HP4	Ethernet interface (TCP/IP)
HP5	SNMP Agent