Bald Eagle RF
Specifications*

Receiver Specifications

Input RF Frequency Range	C-Band 4400 – 5250 MHz S-Band 2185 – 2485 MHz U/L L-Band 1420 - 1850 MHz P-Band Extended 500 - 1250 MHz P-Band 200-500 MHz IF 70 MHz
RF Inputs	2
Frequency Tuning Resolution	50 kHz
Dynamic Range	-10 dBm to -104 dBm
VSWR Ratio	2:1 typical, 2.5:1 maximum
Noise Figure	5 dB typical, 8 dB max
Maximum Safe RF Input Level	+20 dBm without damage
Input Impedance	50 ohms into SMA connectors
Spurious signal rejection	> 60 dBc

Signal Processing Specifications

IF Bandwidth	1 kHz to 40 MHz
Demodulation Modes	FM/SOQPSK with future free firmware upgrades for BPSK/QPSK/AUQPSK
Diversity Combiner	Polarization, Frequency, and Spatial
Combiner Mode:	Pre-D
AFC Tracking	Optional future: +/- 500 kHz of programmed center frequency with 10 kHz frequency resolution
AGC Time Constants	1.0 msec, 0.1msec, 0.01msec, selectable
AGC Modes	Automatic, Manual, Freeze
AM AGC Out	AC coupled AM AGC detector output, 50 kHz frequency response, 5 Vpp bipolar or unipolar out
AGC DC Level Detector	DC coupled from 0 to + 3.5 VDC for min to max RF AGC attenuation

RF Generator Specifications (Optional)

Output RF Frequency Range	C-Band 4400 – 5250 MHz S-Band 2185 – 2485 MHz Upper L-Band 1700 – 1850 MHz Lower L-Band 1420 – 1590 MHz P-Band Extended 500 –1250 MHz P-Band 200– 500 MHz IF 70 MHz
Transmit Outputs:	1
IF Bandwidth	1 kHz to 40 MHz
Modulation Modes	FM/SOQPSK with future free firmware upgrades for BPSK/QPSK/AUQPSK
Modulation Source	Tarsus3 PCM simulator running stored PN-11/15 patterns, user defined PCM frame, archived user data, or external TTL Input PCM stream
Output Dynamic Range	30 dB
Output Impedance	50 ohms using SMA connector

Physical Specifications

cPCI/PXI Form Factor PCIe Form Factor	100mm x 160 mm 100mm x 160 mm
Interface Connectors	RF inputs, RF Signal Generator Outputs: SMA, Video Outputs and AGC Testpoints are BNC outputs from the Tarsus3 MDM-51 DAC outputs connectors
Manufacturing	The design utilizes Surface Mount Technology (SMT), manufactured with robotic assembly techniques to IPC-610B Class 2 manufacturing standards
Temperature Range	Operating: 0°C to 50°C Storage: -20°C to 60°C
Power Consumption:	Approximately 30 Watts total, for all supplies

Ordering Options

Bald Eagle RF-PCIe Bald Eagle RF-cPCI	C-Band, S-Band, Upper L-Band, Lower L-Band, P-Band extended, P-Band supporting data rates to 40 Mbps full RF to bits including dual receivers, dual bit sync with Multi-Symbol Detector/frame sync/decom, PCM simulator, IRIG Time Code Reader in half length PCIe form factor or 3U cPCI/PXI
ULX-OPT-Bald Eagle-TX	Optional Single RF Signal generators with RF C/S/L/P/EP/IF Frequency Bands and BERT Eb/N0 error analysis capability

Specifications are subject to change without notice.
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