CONDOR LITE SERIES MESH RADIO

INTRODUCTION

Exicom's Condor Lite Radio's are miniature design Mesh System, considering SWaP for small UXV and Body worn system.

Condor Lite-1W offers full 2x1W RF output power. The Radio is capable of operating in Mesh and in a bidirectional COFDM Transmitter or Receiver mode. Condor Lite-1W ideally is suitable for Medium range UxV Application and it also includes multiple interface options including Ethernet, RS-232, USB B, on-board audio interface and a fully functional USB-C which is also PD Enabled at 500mW RF output. The 1 W Condor Lite also has 128 GB On board memory for on board video recording.

Condor Lite-2W offers full 2x2W RF output power. The Radio is capable of operating in Mesh and in a bidirectional COFDM Transmitter or Receiver mode. Condor Lite-2W ideally is suitable for Long range UxV Application and it also includes Dual USB interface. The 2W Condor Lite also has 128 GB On board memory for on board video recording.

The Exicom Condor Lite 5W is a high-performance, lightweight Mesh System optimized for UxV applications with a full 2x5W output. It supports robust IP Mesh capabilities using Exicom's advanced Mesh Ultra waveform. Dual USB interfaces allow integration with peripherals like USB cameras and headsets, while RNDIS "Ethernet over USB" offers versatile device connectivity. Designed for UAVs, UGVs, and USVs, the Condor Lite 5W excels in secure, long-range NLOS and BVLOS communication, setting new standards in the field.

2x1W RF power

2x2W RF power
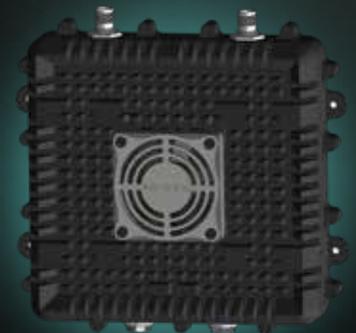
5W RF power

FEATURES AND BENEFITS

- Compact ruggedized packaging with ultra-miniature connectors
- RNDIS support for Ethernet over USB
- 128GB build-in storage
- Very low power consumption
- MIMO Technology and Diversity
- Auto Adaptive Modulation
- Interference Avoidance Scheme
- USB support peripherals 3G/4G/Wi-Fi dongles

- COFDM Modulation
- Token Passing
- Masterless TDMA
- Self-Forming & Self-Healing
- 120 Nodes in a Single Network
- Latency ≥10ms data
- Interlink
- 1000 Low Data Carriers

CONDOR LITE SERIES MESH RADIO

TECHNICAL SPECIFICATION

PARAMETERS	CONDOR LITE 1W	CONDOR LITE 2W	CONDOR LITE 5W
Type	State-of-Art HIGH CAPACITY IP Mesh MANET	State-of-Art HIGH CAPACITY IP Mesh MANET	
Bandwidth [Data Rate]	87Mbps		
RADIO			
Band	L-Band : 1.20GHz to 1.70GHz* LS-Band : 1.78GHz to 2.29GHz* S-Band : 1.98GHz to 2.7GHz* C-Band : 4.40GHz to 5.00GHz*	L-Band : 1.20GHz to 1.75GHz* LS-Band : 1.67GHz to 2.35GHz* S-Band : 2.10GHz to 2.50GHz*	L-Band : 1.20GHz to 1.75GHz* LS-Band : 1.67GHz to 2.35GHz* S-Band : 2.10GHz to 2.50GHz*
Mode	IP Mesh Manet	IP Mesh Manet	
MECHANICAL			
Dimensions	L 144mm	L 157mm	L 188mm
	W 80mm	W 133mm	W 181mm
	H 23mm	H 34mm	H 46mm
Weight***	463g	970g	1kg
POWER			
DC Input	8VDC to 18VDC Reverse Polarity Protected		10 to 18V
DC Output	1A Pass through Switchable		
Typical Power Consumption	20-24W	50W	90W
IP MESH			
Operational Mode	Single Mesh, MIMO Mesh, Diversity, Beamforming, Mesh Ultra X & M		
Modulation	COFDM [Coded Orthogonal Frequency Division Multiplexing]		
Constellation	BPSK,QPSK,16QAM,64QAM Auto Adaptive Modulation		
Error Correction	LDPC [Low Density Parity-Check]		
Bandwidth Allocation	Automatic		
Channel Bandwidth	1.25, 1.5,1.75, 2.5, 3.0, 5.0, 6.0, 7.0, 8.0, 10, 12, 14, 16, 20MHz		
Transmit Output	2 X RF Output TNC or SMA**		
Transmit Power	30dBm Per port [1W] , 33dBm in Total [2W]	33dBm Per port [2W]	37dBm per port [5W]
Transmit Power Control	0.25dBm		
Channel Spacing	125kHz		
Receiver Sensitivity	-98dBm at 1.25MHz		
Encryption Over Radio	AES 128 / 256 Bit FIPS 140-2 Approved**		

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GPS	External		
COFDM POINT TO POINT **			
Modulation	COFDM		
Constellation	Narrow Band : 8PSK,BPSK QPSK, 16QAM		
	DVB_T : QPSK, 16QAM, 64QAM		
Channel Bandwidth	Ultra Narrow Bandwidth : 625kHz		
	Narrow Bandwidth: 1.25 & 2.5MHz		
	Constellation : 6,7,& 8MHz Narrow Band : 1/2, 2/3		
FEC	DVB_T : 1/2,3/4,5/6, 7/8		
Guard Interval	Narrow Band : 1/8,1/16		
	DVB_T : 1/8, 1/16, 1/32		
COFDM [Receiver]**			
Receiver Sensitivity	-110dBm at 625KHz		
Channel Spacing	125kHz		
VIDEO [Streaming]			
Streaming	TCP, UDP, RTSP, Multicast, RTP, RTP-Z		
AUDIO*			
Headphone output	Mono headphone driver		
Analogue	High gain microphone stereo pair 10V microphone bias		
Digital	SD/HD-SDI de-embedding		
Audio	Push to talk		
Audio Encoder	MPEG Layer I MPEG Layer II MPEG Layer III		
Audio Bitrate	32-448Kbits/s		
Encoder Mode	Stereo Left Mono Right Mono Dual Mono		
Audio Channel	16 Groups		
NETWORKING			
DHCP Server/Client	Supported		
Routing	Supports RIP V2		
STP	Supports SIP, Planning Tree, Protocol (PVST cisco) to allow all external routers to check for IP loops in the network		
IGMPv2	All nodes to supports IGMPv2 protocol used for establish multicast group membership. IGMP modes allows more efficient use of resources		
VLAN	Supports VLAN		
VLAN Tag	Supports Tag 1-4090		

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Static Routes	The radio supports static routes, tag, subnet, Mask, gateway & metric		
Interface	Ethernet, USB, RS232, RS485, Audio in/out, PWR, GPIO, UART		
Ethernet	10/100 Base-T		
USB-C	USB PD & USB 2 Controller		
ADDITIONAL FEATURES			
P2MP Mode	P2MP mode configures the network to act as a point to multipoint system. The downlink is the central receiver node and the uplink is a mobile node.		
Split frequency	Split UPLINK and DOWNLINK Frequency		
Radio Preset	16 Preset		
DIAGNOSTIC TOOLS			
Spectrum	Built-in spectrum		
Graphical Information	GUI displays a graphical image of all Nodes in the Mesh and the links between them.		
	Link between the nodes are shown in colour lines [bi-directional lines]		
	If any particular node is congested it gives a graphical alarm.		
GPS information	The GUI of individual radio displays the GPS coordinates of its location.		
MAPs	The radio GUI interface allows to select and upload the maps.		
	The system supports jpg, .png, .gif, .bmp		
ENVIRONMENTAL			
Temperature	-20°C to 60°C		
Humidity	Less than 85% non-condensing		
Sealing	Designed For IP67		
MANAGEMENT			
USB	For configuration, data transfer and to connect USB camera		
Ethernet	PC application control and file download, Web GUI control and file download		
Software License Code*	COFDM Transmitter, COFDM Receiver, IP Mesh Static Node, Interference Avoidance Scheme, AES Encryption		

*   Optional
**   License Optional
***   Subject to change as per form factor and enviornmental certification.

Rev 1.3