

NETWORK RADIO ULS-N

KEY FEATURES

- frequency ranges (version-dependent)
 - 4.9-5.8 GHz (ULS-N-1)
 - 2.3-2.5 GHz (ULS-N-2)
 - 4.4-4.5 GHz (ULS-N-2 + ULS-MU)
 - (other frequencies on request)
- 500 mW output power
- RF bitrate up to 54 Mbps
- 10 to 36 Vdc isolated power supply
- wireless point-to-point and networking capabilities
- communication ports: RS232 and Ethernet 100Base-TX
- integrated tracking antenna control interface



Dimensions
58 x 120 x 230 mm

DESCRIPTION

The ULS-N network radio is the component at the heart of WINS, the modular IP transmission system. Its main use is for networking mobile units, such as unmanned aircraft and a ground station, with the aim of achieving the highest data rate possible while also working over long ranges. The ULS takes the burden of wireless-related technical worries away from the user and provides an Ethernet connection at each station so that the whole system works like a conventional WLAN. The preferred frequency ranges are 4.4 - 4.5 GHz and 4.9 - 5.8 GHz; however, the modular design makes it possible to have systems for any required frequency.

Use under actual conditions is made much easier by the integrated automatic antenna tracking feature that is always available for operation without manual adjustment. The information required by each station about geographical location and spatial orientation is supplied by GPS together with an electronic compass and accelerometers, even making an accurate horizontal orientation of the ground antenna unnecessary.

By using the wireless link, each unit knows the position of the other units and can control the direction of its own antenna. In addition, there is a protocol interface for accepting external attitude and position data; in the airborne system, for example, supplying the current values of roll, pitch and heading can improve the accuracy of the control. The ground system can also be used as a tracking system for other wireless systems if it is supplied with the appropriate target position.

Functionally, the ULS-N consists of the central processor unit, the HF section and various auxiliary and supply units.

FUNCTIONAL BLOCK DIAGRAM

- folgt in Version 003

SPECIFICATIONS

Model	ULS-N
Frequency Range	4.9 to 5.8 GHz (ULS-N-1) 2.3 to 2.5 GHz (ULS-N-2) 4.4 to 4.5 GHz (ULS-N-2 with Amplifier ULS-MU) other frequencies on request
Output Power	0.6 Watt (programmable)
TX Channel Width Support	5/10/20/40 MHz
Data Rates	1.5 to 54 Mbps
OFDM long range mode	up to 3.2 μ s multipath distortion protection
Power Supply	10 to 36 Vdc (isolated)
Supply Current	0.6 A @ 12 V; 0.3 A @ 28 V
Supply Current with ULS-MQ	2.0 A peak @ 28 V
Temp. Range	-30°C to + 80°C
Power Connector (J1)	Circular Industrial, male, AMPHENOL C016 30C006 100 12
Auxiliary Port Connector (J2)	M12 Female 4-Way TYCO 1838891-2
Ethernet Connector (J3)	Ruggedized RJ45, NEUTRIK NE8FAV (plug = NE8MC)
RF Connector (J4)	N-female (DC & control signals to remote amplifier)
NAV System Connector (J5)	M12 Female 4-Way TYCO 1838891-2
Extension Connector (J6)	Circular Industrial, femal, AMPHENOL C016 30G006 100 12
Earth Connection	M6 V2A

INTERFACE CONNECTIONS



J1 Power Connector	Pin 1+2	input	36 Vac (a) { @ ground station }
	Pin 3	return	10 to 36 Vdc (-)
	Pin 4	input	10 to 36 Vdc (+)
	Pin 5+6	return	36 Vac (b) { @ ground station }
	Pin 7	return	Earth (connected to Case & RF Ground)
J2 Auxiliary Port Connector	Pin 1	input	VCC (+5 Vdc)
	Pin 2	output	RS232 TxD
	Pin 3	return	Ground
	Pin 4	input	RS232 RxD
J3 Ethernet Connector	Pin 1	output	TX+ (ws/or)
	Pin 2	output	TX- (or)
	Pin 3	input	RX+ (ws/gn)
	Pin 6	input	RX- (gn)
J4 RF Connector	RF signal & Amplifier/Antenna DC/control signal		
J5 NAV System Connector	Pin 1	input	VCC (+5 Vdc)
	Pin 2	output	RS232 TxD
	Pin 3	return	Ground
	Pin 4	input	RS232 RxD
J6 Extension Connector	Pin 1+2	output	36 Vac (a) { @ ground station }
	Pin 3	return	Ground
	Pin 4	in/out	serial control signal
	Pin 5+6	return	36 Vac (b) { @ ground station }
	Pin 7	return	Earth (connected to Case & RF Ground)