Kran Funk

AZG Tech

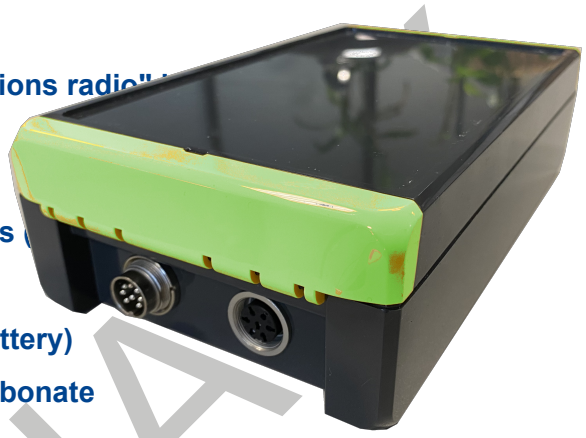
x

MRX.eth

Sales ID: 2101-1301 /2.4GHz /DC

Camera connection and mesh node for MRX.Crane Radio

- **x Digital radio unit for MRX.KranFunk**
- **x Repeater mode for range extension and "diversions radio" supported**
- **x High data rate (up to 400 Mbit/s)**
- **x Encrypted/meshed radio based* on IEEE 802.11s**
- **x PoE interface for digital camera (ETH/IP)**
- **x Battery monitoring in battery mode (external battery)**
- **x Plastic housing made of UL certificated polycarbonate**



The MRX.CraneRadio system transmits analogue and digital camera images from different positions on cranes to a touch monitor in the crane operator's cab. Data is transmitted via a robust, encrypted and meshed radio network.

MRX.eth is a converter unit for transmitting digital video streams via radio. The mode of operation is bidirectional, so there are different application options depending on the use case. MRX.eth can be operated as a repeater in order to extend the range and overcome radio shadows.

Introduction

MRX.eth is part of the MRX.CraneRadio system and works together with MRX.cabin. Two MRX.eth can also be used standalone in "back-to-back" operation.

MRX.eth works as a digital media converter between Ethernet (10/100BaseT) and AZG.mesh radio technology. The mode of operation is transparent in both directions, so that not only video streams but also control, monitoring and other data are transmitted.

MRX.eth has an internal PoE unit, which is used to power the connected camera.

An additional internal measuring unit allows the input voltage and current to be measured. In battery mode, the remaining battery capacity is determined and transmitted to the central unit for display.

The camera's supply voltage can be switched off so that the battery is not unnecessarily drained when the system is not in use.

MRX.eth can be used as a repeater/amplifier in the radio network. This can be used to increase ranges, but above all to overcome potential "radio obstacles".

MRX.eth is optimised for use on construction machinery and for operation with or without a battery. The input voltage range is 9-36VDC. The specified temperature range is from -40°C to +85°C. The device does not require a fan.

The built-in wireless interface works according to the IEEE 802.11s standard with 2x2 MIMO antenna technology. The MRX.eth antenna is built into the housing to offer maximum protection against mechanical loads.

Kran Funk

Technical Specifications

Overview

- Wireless Router + PoE-Injector
- Fully encrypted wireless meshed network
- 1x Mesh-IF

Mesh Radio

- 2x2 MIMO
- 2.4GHz:
  - BW: 20/40MHz
  - Std: 2.412 ~ 2.472GHz
  - max. 20dBm
- 5GHz:
  - BW: 20/40MHz
  - Std: 5.180 ~ 5.825GHz
  - max. 23dBm
  - DFS supported
- Data rate: up to4300 Mbit/s
- Modulation techniques
  - OFDM: BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM
- Antenna insite

Mesh Features

- IEEE 802.11s
- Fully encrypted
  - SAE key exchange
  - AES-SIV (RFC5297)
- HWMP routing
  - self forming & self healing
- Up to 32 units per mesh system

Video Features

- supported digital stacks
  - IP, TCP, UDP, HTTP, RTP, RTSP

Digital interface

- 10/100 BaseT
  - IEEE 802.3
  - Auto-MDIX
  - Auto negotiation
- Fedding (power in)
  - opt. pPoE phantom power
  - opt. pPoE spare pair power
- Connection: M16/8-pin socket

Security

- Encryption of the entire radio transmission
- Secured login to device

System management

- Web-GUI
- SNMPv2c, SNMPv3

Physics

- Fan less
- Weight: 750g
- Dim: 231x125x60mm (BxHxD)

Housing: plastics

- Material: PC UL 94 V0
  - flame-retardant, self-extinguishing
  - UV stabil (f1 listing acc. UL 746C)
  - R22 acc. DIN EN 45545-2
- Protection: IP67
- Mounting:
  - Wall mount
  - Pole mount

Power

- Power supply:
  - DC: 9-36V
  - Connector: M16/8-pin plug
- Power demand
  - <4W (w/o camera)

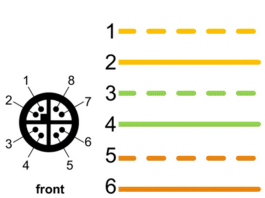
Environment

- Operation: -40 .. +85°C, ambient w/air
- Storage: -20 .. +70°C
- Rel. humidity: 5-95%, non cond.

Certifications

- CE, eMark regulations
- RoHS

Pin assignment for MRX.camera



1	TX+
2	TX-
3	RX+
4	RX-
5	V- (GND)
6	V- (GND)
7	V+ (12/24VDC)
8	V+ (12/24VDC)

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