Kran Funk

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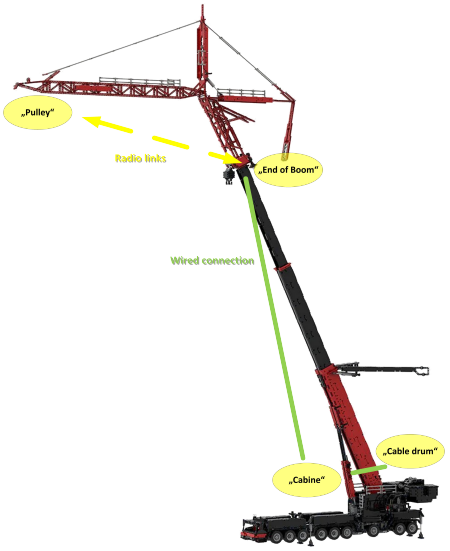
MRX.KranFunk (MRX.CraneRadio)

Video and data transmission system with mesh nodes

- **x Hybrid video system on cranes**
- **x Solution with integrated wireless interface (AZG.mesh)**
- **x High bandwidth, low latency, long range**
- **x Scalable and expandable**
- **x Full HD touch monitor for display and operation**
- **x Solution for tower and mobile cranes**
- **x Wide range of accessories**



The system MRX.CraneRadio transmits analog 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.

The receiver unit can be operated with several transmitter units simultaneously to create a point-to-multipoint architecture. Each transmitter also works as a repeater in order to be able to work “around the corner” and thus overcome connection interruptions caused by radio shadows.

The touch monitor allows the user to interact with the system (zoom, image change, etc.).

Introduction

MRX.CraneRadio is a radio-based transmission system for all types of construction machinery. Originally designed to transmit video streams from analogue and digital cameras into the crane operator's cab, it is suitable for the bidirectional transmission of many different data signals.

The system is based on AZG.mesh technology, which enables a very robust and encrypted network. AZG.mesh makes it possible to connect several nodes in a network to enable different use cases. AZG.mesh allows data to be transmitted via several stations (repeaters), creating redundancies and overcoming possible radio shadows.

The powerful nodes ensure that the video data is transmitted and processed with very low latency. This means that the crane operator always has a live image in the driver's cab.

The individual encryption of MRX.KranFunk ensures that the systems on different cranes working on the same construction site can neither interfere with nor influence each other. This prevents camera images from being incorrectly transmitted to the wrong driver's cab.

Radio transmission is carried out using modern digital technology in accordance with IEEE 802.11s with 2x2 MIMO antenna technology. This enables a long range with a large transmission bandwidth at the same time.

A wide range of accessories, including a digital zoom camera and a smart battery with various charging options, round off the MRX.CraneRadio system.

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Features

Overview

- Wired and wireless Mesh System + Video Processing
- Fully encrypted meshed network
- Different components for different applications

Mesh Radio (AZG.mesh)

- 2x2 MIMO
- 2.4GHz and 5Ghz operation:
  - max. 30dBm
  - DFS supported
- Data rate: up to 2.4 Gbit/s
- Regulatory domains supported

AZG.mesh Features

- IEEE 802.11s plus add-ons
- Fully encrypted
- Auto adapt in case of severe interference
- HWMP routing
- Repeater function

Video Features

- supported digital video formats
  - H.264, H.265, MJPEG, ...
- HW-coding for very low latency (GPU)
  - Latency: 200ms (glas-to-glas)
- Displaying system information on the monitor
  - Zoom, radio quality, temp., battery status, etc.

System interfaces

- PAL-Video
- Ethernet: 2.5GbE LAN
- HDMI (video)
- USB (touch monitor, mouse, etc.)
- Zoom pedal (Zoom-In, Zoom-Out)

MRX.battery

- LiFePO4
- 24V, 10Ah
- -20 .. +60°C
- 4.3kg
- integrated BMS
- Solar pamnel available

MRX.camera

- FullHD: 2MP, 1920x1080
- Zoom: 26x optical, 16x digital
- -30 .. +70°C
- 1.5kg
- Lens heater

Security

- Encryption of the entire radio transmission
- Secure login to the system

System management

- Interactive menu on the touch monitor
- Web-GUI
- secured remote access to video streams

Power

- Power supply:
  - DC: 12-24V

Environment

- Operation: -20 ..+60°C, abient w/air
- Storage: -20 .. +80°C
- Rel. humiditiy: 5-95%, non cond.

Certifications

- CE, eMark regulations
- RoHS
- FCC

11.07.2025. The data sheet is subject to change without prior notice. The latest data sheets can be found at www.azg-tech.com.

AZG Tech GmbH
Garbsener Landstraße 10, 30419 Hannover
www.azg-tech.com
info@azg-tech.com