Systems & Projects

Mobile Air Traffic Control Tower

ROHDE&SCHWARZ

The mobile Air Traffic Control Tower MT2001 is a completely self-contained system for use as a mobile and/or temporarily Air Traffic Control Centre.
The cabin is mounted on a trailer and can be towed by any suitable truck.
A roller system is provided, so that the mobile tower can be loaded in a HERCULES C-130 aeroplane without requiring external assistance of cranes etc. Fixing of the cabin in the cargo is performed by using the locking mechanism of the C-130 and special accessories supplied with the mobile tower.

Communication system

Antenna System

The antenna system of the mobile ATC-Tower MT2001 consists of one VHF multiple dipole antenna type D2260, one UHF multiple dipole antenna type D2219 and one VHF-UHF coaxial dipole type HK014.

The two multiple dipole antennas are mounted directly onto diagonal opposed corners of the shelter by using the supplied antenna adapters.

With this minimum antenna configuration the ATC-Tower is completely operational.

Two additional antenna adapters are supplied for later extension of the antenna system.

Minimum antenna configuration

For rapid deployment only the two multiple dipole antennas have to be mounted on the roof of the shelter. Each multiple dipole contains 3 separate wideband dipole antennas.

The RF-outputs of both VHF-transceivers and both UHF-transceivers are connected to the multiple dipole antennas by means of an EMP-protector. One VHF and one UHF wideband dipole stays available for reception purposes. These receiving antennas are connected to the Line Distribution Unit LDU01 by means of EMP-protectors. In the Line Distribution Unit the two antenna signals are combined to one VHF-UHF signal and then via the antenna patch panel on the frontpanel connected to the antenna multicoupler VE340F1 from where the signal is distributed to the different transceivers.

Maximum antenna configuration

To reduce collocation problems, a separate receiving antenna can be set up, approximately 180m away from the shelter. A special low-loss cable is supplied with the antenna which has to be unrolled completely.

The RF-outputs of both VHF and both UHF transceivers are connected to the respective VHF or UHF wideband dipole by means of an EMP-protector.

The receiving antenna HK014 is connected to the Line Distribution Unit by means of a special 180m low loss coaxial cable and an EMP-protector situated on the Telephone Connection box. The received VHF-UHF signal is then connected to the antenna multicoupler VE340F1 via the antenna patch panel located on the frontpanel of the Line Distribution Unit. The RF signal is then distributed to the different transceivers.

Radiosystem

General

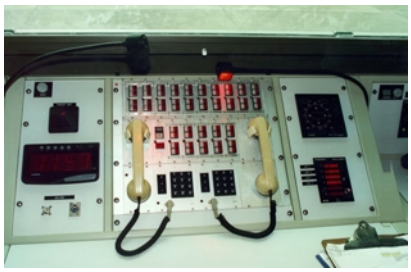
The radio system has two operator positions, both having the same capabilities. Each operator position contains two Remote Control Units GB404 and one Audio Control Unit GB089. Each Remote Control Unit is dedicated to a VHF transceiver XU452U2 or a UHF transceiver XD432U2.

RF- Control

Frequency setting and channel selection can be performed by using the Remote Control Unit GB404 or locally on the transceivers itself. Each Remote Control Unit is connected to a dedicated VHF or UHF transceiver via the Line Distribution Unit. Power for the Remote Control unit is supplied by the connected VHF or UHF transceiver.

Audio & Signalling path

Modulation is performed by using the supplied headphones or microphones which are connected to the Audio Control units GB089. The audio and the PTT signal is then distributed to the selected transceivers by means of the Line Distribution Unit. The Squelch signalling coming from the different transceivers is rooted to the Audio Control unit via the Line Distribution Unit. Power to the Audio Control Units GB089 is supplied via the Line Distribution Unit.



Frequency display

To indicate the frequency settings of the transceivers to the operators, a frequency display type GH057 is mounted in the console between the two operators. In the Line Distribution Unit, the frequency information is extracted form the data strings between the remote control units GB404 and the different transceivers. Power to the frequency display GH057 is supplied via the Line Distribution Unit.

METEO SYSTEM

The power and signal cables coming from the Anemometer WAA15A and the Wind Vane WAV15A are connected to the screw terminal block in the junction box fitted to the cross arm WAC15. The frequency output of the Anemometer and parallel gray-code output of the Wind Vane being available at the screw terminal block are past to the Wind Sensor Control Unit WATT11 via a multiwire cable and the connector situated near the fixing point of the meteo mast.
In the Wind Sensor Control unit the Wind sensors information is converted to a two-wire serial ASCII-code format.
The serial output of the Wind Sensor Control Unit is then connected to the appropriate connector on the Telephone Connection Box after passing through a surge arrester.
The Input of the averaging display is connected directly to the appropriate connectors on the Telephone Connection Box by means of a surge arrester.

Technical Data

Dimensions

- Cabin : 2437 mm x 2590 mm x 6057 mm (W x H x L)
- Trailer (without towing device) : 2480 mm x 6200 mm (W x L)
- Trailer Height : 940 - 1450 mm (adjustable)

Weight

- Cabin : approximately 6850 kg
- Trailer : approximately 2600 kg

Power Supply

- 1 x 220VAC/50 Hz
- 3 x 220VAC/50 Hz
- 3 x 380VAC/50 Hz

approximately 10 kVA

Fire Protection Management System

- Mode : Automatic/manual.
- Detectors : Ionisation smoke detector SIH-E and Photo electric smoke detector SLK-E
- Optic Signals : Flash light inside cabin SL-1 and Warning light "FM200" outside cabin
- Extinguishing principle : Chemical gas FM200
- Gasstorage: FM200 is stored in a steel pressurised vessel
- Weight approximately 15 kg

Airconditioning

- Outdoor Unit : RY71DJV1
- Indoor Unit : FHY71DJV1
- Control Unit : FHY
- Heating Element : KEA5C71V1L
- Cooling Capacity : 7800 Watt
- Heating Capacity : 7900 Watt
- Power Consumption :approx. 3500 Watt

Alternative configurations, options and accessories
- Other shelter dimensions
- Shelter lifting device
- direction finders
- HF communication
- etc.
on request.

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