

MWS-1000H/RD Microwave Radio Equipment

The MWS-1000H/RD microwave equipment developed by Teletechnika



transmits the radio signals of a studio to a far site radio station. After getting the baseband signals of the studios (right and left channels) the equipment processes the signals digitally, adds an error-correction code and after modulating and upconverting them into the microwave band it delivers the signal to the radio transmitter station through a 10 GHz one-way microwave link consisting of a Tx and Rx MW equipment. It is also possible to transmit additional information (9600 baud). Using this feature RDS can be transmitted apart from the main signals. The typical antenna is size is 0.56m diameter, however it is possible to use larger ones (up to 1.5m) as well if it is needed or the authority requires it. Using the equipment a hop distance of max. 30 km can be achieved depending on the terrain.

A network can be built up from MWS-1000H/RD equipments consisting one program distributing Tx station and one or more Rx stations. Both the Tx and Rx stations need sharply directed antennas. In case of more Rx stations more Tx antennas are necessary, so the directions belonging to the Tx antennas must be considered as different connections. The signal transmission is one-way, an optional backward transmission also must be considered as a different connection.

The input signals of the transmitter can be:

- Program signals
- Baseband audio signals of Q quality
- Mono or stereo signal right and left channels
- RDS TXT of 9600 baud
- AES/EBU

The output signals of the receiver can be:

- Program signal, mono or stereo signal w. right and left channels, RDS TXT signal of 9600 baud, AES/EBU

Polarization of the signal at the output of the transmitter can be:

- Horizontal (H)
- Vertical (V)

Frequency band, frequency raster and output power thresholds of the MWS-1000H/RD equipment:

According to CCIR 747 Annex 1 standard for the transmission of the radio signals the 10.532-10.560 GHz frequency range has been distributed following the principle of homogeneous rasters.

Technical parameters:

MWS-1000H/RD_EBU Transmitter:

Input	
Audio	
System	Analog
Connector	XLR Female
Impedance	600 ohm Balanced
Number	2 (L+R)
Audio Process	
Encoding Rate (Audio)	1.345Mbit/s
Audio sampling frequency	44.1 kHz
Resolution	16bit / channel
Input	
<i>Digital</i>	
System	RS-232
Bitrate	9600 Baud
Connector	DSUB-9 Female
Output	
<i>Intermediate Frequency</i>	
Modulation type	16 QAM
Frequency	480 MHz
Gross bitrate	5,6448Mbit/s
Output power	10 dBm
Connector	„F” female
Impedance	75 Ohm
DC bias at output	+13,6V
Management	SW controlled
Interface	2 x USB-2.0
Power Supply	230 V / 50 Hz
Size	Standard 19” x 1U rack
Temperature Range	+5 to +40 deg. C as per ETSI 300 019-1-3, Class

MWS-1000H/RD_EBU Receiver:

Output	
Audio	
System	Analog
Connector	XLR Male
Impedance	600 ohm Balanced
Number	2 (L+R)
THD+N	<-70dB
Output	
Digital	
System	RS-232
Bitrate	9600 Baud
Connector	DSUB-9 Female
Input	
Intermediate Frequency	
Modulation type	16 QAM
Frequency	480 MHz
Input sensitivity	44dBuV
Connector	„F” female
Impedance	75 Ohm
DC bias at input	+13,6V
Management	SW controlled
Interface	2 x USB-2.0
Power Supply	230 V / 50 Hz
Size	Standard 19” x 1U rack
Temperature Range	+5 to +40 deg. C as per ETSI 300 019-1-3, Class