AR20 - Automatic rebroadcast station

Type designation: **AR20**

PN (RN): **2315.100.02**

The AR20 automatic rebroadcast station is a device allowing automatic rebroadcasting in fixed frequency operation modes of transceivers complying with the requirements of the STANAG 4204 standard and of transceivers communicating in frequency hopping modes using HW20 modulation, i.e. RF23, RF20, RF2050.

Operation features

• Automatic rebroadcasting of services in simplex or semi-duplex frequency hopping channel, such as transmission of short text messages, ALERT, authentication, and notification of interruption BREAK IN.
• Automatic rebroadcasting of P2P data communication or according to MIL-STD-188-220 (NET) in simplex or semi-duplex frequency hopping channel.
• Automatic synchronization of all terminal transceivers from the AR20.
• Automatic rebroadcasting of voice communication in simplex or semi-duplex fixed frequency channel or frequency hopping channel.
• Automatic rebroadcasting of data communication in simplex or semi-duplex fixed frequency channel according to MIL-STD-188-220 (NET).
• Automatic rebroadcasting of voice communication in simplex or semi-duplex fixed frequency channel with encryption unit enabled.
• Automatic rebroadcasting of short encrypted FLASH messages in simplex or semi-duplex fixed frequency channel.
• Rapid transition to radio communication between AR20 and terminal transceivers without rebroadcasting to another network.
• Connection to a third radio station, which is a terminal transceiver of another rebroadcast station, while ensuring compatibility of all types of communication in fixed frequency or frequency hopping channels.

Technical parameters

Frequency range	(25–108) MHz (140.025–145.9875) MHz
Frequency range in frequency hopping modes	(30–87.975) MHz
Input and output impedance	50 Ω

MESIT asd, s.r.o.
Sokolovská 573, Mařatice
686 01 Uherské Hradiště
Česká republika

asd@mesit.cz
T +420 572 522 200
F
www.mesitasd.cz

Receiver sensitivity	0.7 µV in (30–90) MHz band
	0.6 µV in (25–30) MHz band
	0.5 µV in (90–108) MHz band
	(140.025-145.9875) MHz band
Transmitter power	
– nominal	50 W –1/+2 dB at 24 V
	50 W –3/+2 dB at 12 V
– reduced	5 W –1/+2 dB
Modulation	FM
Frequency deviation	6.5 kHz or 3.3 kHz
Channel spacing	
(30–108) MHz band	25 kHz, 12.5 kHz and 6.25 kHz
(25–29.975) MHz band	25 kHz
(140.025–145.9875) MHz band	25 kHz, 12.5 kHz
Channel spacing in frequency hopping modes	25 kHz
Compatibility of operation (1.5 m antennas)	(30–90) MHz
Compatibility of operation (30 m antennas)	(25–30) MHz, (90-108) MHz
	(140.025–145.9875) MHz
Minimum separation between receiving and transmitting frequency	10 %, for 6 dB receiver sensitivity drop
Current consumption during communication, one transceiver transmitting	25 A at 12 V
	12 A at 24 V
Current consumption without communication, receiving transceiver	2.8 A at 12 V
	1.4 A at 24 V
Power requirements	MIL-STD-1275B
Operating temperature range	-40 °C to +70 °C

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Dimensions (without attached cables and cooling unit)	W 430 mm x H 285 x D 225 mm
Weight	max. 30 kg
Climatic resistance	MIL-STD-810E

Documentation

RF2050 operating instructions	2310.010.12
RF2050 short operating instructions	2310.011.12
AR20 operating instructions	2315.010.02

Set

Type designation	**PN (RN)**	**Name**
AR20	2315.000.02	Automatic rebroadcast station set

Accesories

Type designation	**PN (RN)**	**Name**
RU20	2315.110.01	Rebroadcast unit
	7007.100.72	Frame
	1050.601.03	AF cable
	1050.631.02	AF cable
	1050.340.01	Data cable
	1050.341.01	Data cable
	1050.126.02	Power supply cable 3 m
	1050.993.01	Grounding
	1050.993.21	Grounding
	2036.100.23, 2036.100.24	2.6 m VHF vehicle antenna
	2036.100.38	Groundplane antenna
	2036.100.68	Discon antenna

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	2036.100.39	Antenna mast
RF13.3	2022.100.52	Handset
	2026.700.01	Handset holder
	2315.205.01	Holder
PK20	2320.000.02	Fill gun set
	2011.904.01	Antenna cable (3 m)
	2011.904.02	Antenna cable (10 m)
	1050.299.01	PC interconnection cable (USB)
	1050.290.01	Data cable (RS232C)
	2010.900.01	RF cable
	2010.900.02	RF cable
	1050.405.02	RF cable
	5605002002	High frequency protection 1 GHz 200 V 400 W
	2025.500.51	CD for modem configuration