



TELEFUNKEN
RACOMS



CNR-9000HDR COMBAT IP RADIO

Advanced Multi Mode VHF/FM COMSEC/ECCM Radio System
for Superior Voice and Data Communications

The CNR-9000HDR (High Data Rate), a new member of the well-known combat proven CNR-9000 family, is TELEFUNKEN RACOMS' response to the emerging combat requirements for VHF/FM tactical radio networks with better voice qualities and higher data transmission capabilities. In addition to the outstanding features of the basic CNR-9000 radio, the CNR-9000HDR provides 115 kbps data speed with IP connectivity and control to allow real data communications over the military 25 kHz narrow-band, VHF/FM channels.

Technical Specifications

General	
Frequency	30.000 – 107.975 Mhz
No. of Channels	3120 at 25 kHz spacing
Modulation	F3 simplex, voice, analog and digital data
Modes of Operation	Fixed frequency: Clear and COMSEC Frequency hopping: ECCM/COMSEC
Preset Channels	100
Frequency Stability	±3 ppm
Scanning	up to 4 pre selected channels
Selective Call/Selective Bar:	Individual and group communication
Vocoder (optional)	2400, 4800 bps
GPS	Including radio position transmission (automatic/manual)
Communication Controller (optional)	Per MIL-STD-188-220
User-End Interfaces	Ethernet (IEEE802.3) 10 base2 10 Mb/s Serial – ASY at 115 Kb/s
Radio Interface	Synchronous up to 16 Kb/s
Built-in-Test (BIT)	On-line and operator initiated, microprocessor controlled
Display	Menu driven LCD, large graphic display, that presents a wide variety of radio status
Power Source	
Manpack	12 VDC nominal
Primary Battery	TLS-020 Lithium battery TLS-015/A Lithium battery BA-3791 Alkaline battery
Rechargeable Battery	TNH-2012 NiMH battery TNC-2188 NiCad battery TLI-9380 Lilon battery
Vehicular	24 VDC nominal per MIL-STD-1275
Airborne	28 VDC nominal per MIL-STD-704A

Environmental	
Operating Temperature	-40°C to +70°C
Dynamic & Mechanical	MIL-STD-810E
Relative Humidity	95 %
Immersion	up to 1 meter of water for 2 hours
Electromagnetic Interference	MIL-STD-461C/462
Ancillaries	compatible with backward ancillaries
RT MTBF per MIL-STD-217F	> 7500 hours

Dimensions and Weights	
Manpack (WxDxH) including battery	226 x 245 x 86 mm
Vehicular Dimensions (WxDxH)	
VRC-906	245 x 300 x 195 mm
VRC-950	245 x 325 x 195 mm
VRC-920	245 x 325 x 195 mm + 146 x 100 x 115 mm (C-6200)
VRC-980	375 x 280 x 245 mm
VRC-990	375 x 280 x 245 mm + 147 x 268 x 160 mm (AM-9050)
RT Weight	3.3 kg

Receiver	
Sensitivity	-116 dBm for 10 dB SINAD or 10 ⁻¹ BER at 16 kbp/s
Disortion	< 5 %
IF Rejection	100 dB
Audio Outputs	
Adjustable	20 mW/600 Ω (earphone) 200 mW/45 Ω (speaker)
Fixed Level	220 mV/150 Ω
Squelch	OFF, ON: 150 Hz tone or noise activated
Front-end Protection:	+38 dBm

Transmitter	
Power Output	
Manpack	0.25, 10 W
Airborne	0.25, 10, 50 W
Vehicular	0.25, 10, 50 W
Output Protection	Open & short circuit
Spurious Emission	-75 dBc
Harmonics	-47 dBc
Wideband Noise Level	-137 dBm/Hz at 10 % off carrier
Frequency Deviation	5.6 kHz

Anti-Jamming (ECCM)	
Technique	Synchronous orthogonal frequency hopping over the entire frequency band (30-108 Mhz) or partial band
Frequency hopping rate	Medium
No. of preset hopping keys	Two sets of 10 keys each
No. of preset frequency Tables	10 tables
Synchronization	Acquired at up to 4.5 minutes T.O.D difference. Auto resynchronization capability
Maximum radio silence Time	No limited for full synchronization
Late entry	Fully automatic, no special procedures required
Orthogonality	Up to 64 orthogonal nets over any frequency table
Special Feature	Hailing from frequency hopping to fixed frequency and vice versa
Programming & Data Loading	Via keyboard, Keygun loader, another CNR-9000 radio or personal computer

Encryption (COMSEC)	
Type	Digital, very long non-linear »white« sequences
No. of Keys	Two sets of 10 keys each
Synchronization Time	Less than 250 msec
Special Features	CLEAR override, COMSEC alarm, auto resynchronization capability
Programming & Data Loading	Via keyboard, Keygun loader, another CNR-9000 radio, personal computer

Data Communication	
Type	Analog (varied standards), digital synchronous and asynchronous
Rate: Basic Mode	32 kbps w/o error correction, 50 to 19,200 bps asynchronous with error correction
HDR Mode	FF: 85.33 kbps with error correction, 115.2 kbps with error correction FH: 48 kbps with error correction
Flash:	Very short data transmission with minimum delay
SMS (Short Message Service)	
Data Type	900 codes and 200 preformatted messages
Data Entry	Via keyboard, data loader and PC
Features	Storage of last 16 messages (up to 320 charac. each). Message acknowledgment. Message displayed on radio front panel
Special Features	Automatic rate and data type adaptation

TELEFUNKEN

Radio Communication Systems
GmbH & Co. KG

Eberhard-Finckh-Strasse 55
89075 Ulm-Boefingen, Germany

Phone +49 (0)7 31 . 15 53 - 0
Fax +49 (0)7 31 . 15 53 - 111

www.tfk-racoms.com

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