



TRC 9200

VHF/FM ECCM MANPACK RADIO

- > **Combat Net Radio (CNR) communications**
- > **Wide range of more advanced services (TDMA, Packet radio mode, Tactical network access (ACNRI))**
- > **Interlaced voice & data transmission**
- > **Very high level of EPM & encryption**
- > **Fully interoperable, in all modes, with other PR4G radios (handheld, vehicle, airborne)**

TRC 9200



A VERY HIGH LEVEL OF EPM PROTECTION AGAINST JAMMING

With three interoperable ECCM modes, Fast Frequency Hopping (FFH), Free Channel Search (FCS) and an automatic mixed FH & FCS mode, the TRC 9200 provides the very best response against barrage & follower jamming. (Fig. 1)

With more than 300 hops/s, PR4G manpack is the fastest radio in ser-vice today

PROVIDE VOICE & DATA COMMUNICATIONS IN ANY HARSHNESS EW ENVIRONMENTS

In addition to the 16 kbps CVSD & analog voice modes, TRC 9200 provides several vocoders to offer a best protection against jamming (800 bps - STANAG 4479 / 2,400 bps - STANAG 4198 and a cristal voice vocoder at 4,800 bps. (Fig. 2)

PR4G manpack is perfectly suited for point-to-point data communications through its synchronous or asynchronous data interfaces up to 16 kbps.

TRC 9200 includes internetworking packet mode throughout combat radio networks for data block routing with user data rates up to 4,800 bps. Packet access service (PAS) is provided to support tactical messaging exchange in particular.

Data transmission includes EPM protection by forward correction codes (FEC) to maintain effective transmission while jamming usually stops pending communications of weakly protected ECCM radios and fixed frequency radios.

Error-free transmission in FFH mode is achieved with up to 70 % of hopping band being jammed

A mixed voice & data mode based on CSMA* traffic and random scheduler is provided to solve radio networks are shared with voice & data access in multiple point network configuration. CSMA & random scheduler is intended to avoid contention while accessing to the channel.

* Carrier Sense Multiple Access

TRC 9200 is a 5 / 10 W manpack radio. It covers 30-88 MHz VHF band. It is fully interoperable in all modes with handheld, vehicular stations and airborne radio system from the PR4G family.

Manpack is a multi-role radio offering a perfectly-suited answer to combat network radio (CNR), tactical area network radio access, communications of C² for weapon systems in TDMA mode, or automatic routing through data radio networks in Packet radio mode for C³¹ system communications.

The radio is capable of high data rate transmission up to 16 kbps. Considering current electronic warfare environments, the radio includes data-link quality test in order to optimise rates to provide seamless data transmissions of mails, files, pictures or video.

PR4G is available with a Tactical Message Terminal for e-mail/file transfer applications with automatic routing throughout HF/VHF networks connected to LAN or PSTN.

Manpack can be also used with an external GPS interface for on-the-air broadcasting of GPS positions for situation awareness. Radio can be interfaced with a tactical terminal to display GPS positions on a map.

Manpack is available with a short & long distance (up to several km) remote control unit.

All digital voice & data traffic are encrypted with the built-in COMSEC, providing highest security level.

Its autonomy is above 22 h (8/1/1) with Li-Ion battery.





TRC 9200 provides also operational short messages compatible of mixing voice and data traffic.

The very best TDMA solution available with ECCM protection

TDMA (Time Division Multiple Access) mode provides TRC 9200 with robust communications perfectly suited for early warning & weapon systems. Cycling time slots enable rapid exchange of data in support of detection, tracking & fire control sequences.

TDMA mode takes benefits of high degree of FECs to ensure high level of integrity required for communication in a weapon system. (Fig. 3)

THE WIDEST RANGE OF ADVANCED COMBAT RADIO CNR SERVICES

- Automatic net initiation, late net and traffic entry for action-free operations
- A very precise synchronisation transmitted periodically throughout radio networks for a very good resistance against jamming
- Break-in facility to allow channel pre-emption by the leader when an order must be urgently transmitted
- Simultaneous multiple selective calls at the same time of conference communications
- Broadcasting of alerts with its number and the sender ID
- Transmission of operational short messages
- Automatic traffic types recognition between voice/data, data rate and operational short messages
- Link quality test to analyse local jamming in order to set appropriate data rates
- Authentication of correspondent on request
- Anti-tampering protection & emergency erasure with alert broadcasting throughout radio net
- Automatic and multimode voice rebroadcast
- Automatic HF/VHF relay between HF SYSTEME 3000 & PR4G
 - Voice through audio relay outputs
 - Data through a Tactical Message Terminal software (TRC1731) installed on PC
- Orthogonal frequency hopping in relay configuration
- Scanning over 8 analog fixed frequencies (hailing)
- Possibility to connect external crypto device such as Vinson-KY 57

Mix Mode ►



Fig. 1: In mixed FH&FCS mode, radio automatically selects the more appropriate mode, FFH or FCS, according to EW environment.

Vocoder ►

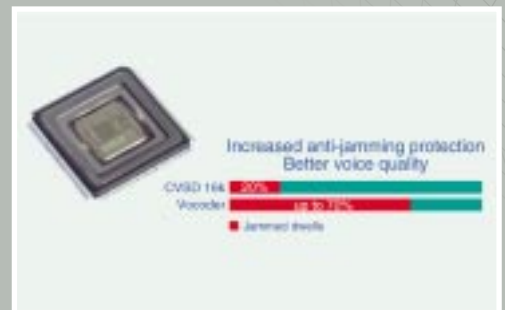


Fig. 2: Illustration of vocoder benefits compared to 16 kbps CVSD voice mode.

TDMA ►

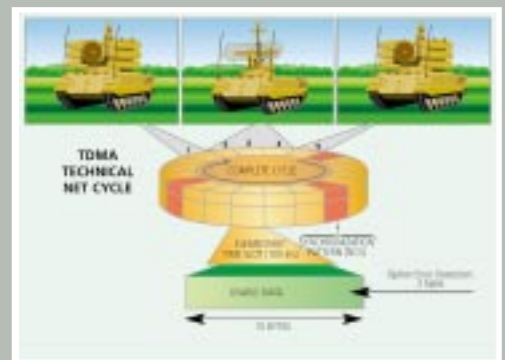


Fig. 3

TRC 9200

GENERAL CHARACTERISTICS

| | |
|-------------------------------|--|
| Frequency band | 30 to 88 MHz in 25 kHz spacing / 2,320 channels |
| STANAG 4204-compliant | F3 modulation |
| FF Modes | Analog Fixed Frequency (AFF) Digital Fixed Frequency (DFF) |
| ECCM Modes | Fast Frequency Hopping (FFH) Free Channel Search (FCS) Mixed FH + FCS mode (MIX) |
| Autonomy | ≥ 8 h with Ni-Cad battery ≥ 22 h with Li-Ion battery ≥ 24 h with Lithium pack |
| Weight | ≤ 5.3 kg |
| Dimensions (W x H x D) | 291 x 91 x 245 mm |
| Temperature range | Operational from - 40° C to + 70° C, MIL-STD-810 E |
| Humidity | 95 % at + 35° C, MIL-STD-810 E |
| Watertightness | Immersion-proof under 1m of water during 2 hours, MIL-STD-810 E |
| EMI/EMC | MIL-STD-461 C |

TRANSMISSION & RECEPTION CHARACTERISTICS

| | |
|----------------------------|--|
| RF output power | 10 W (option), 5 W, 0.5 W |
| Frequency stability | ± 2 ppm |
| Harmonic radiation | Protection better than 60 dB for 5 W |
| Spurious radiation | Protection better than 70 dB |
| Sensitivity | (S + N) / N ratio better than 22 dB for a - 113 dBm RF signal |

INTERFACES

| | |
|--------------------------------------|---|
| Audio | AF output power: Loudspeaker: 0.5 W / 4 Ω Earphone: 20 mW / 300 Ω Audio bandwidth: Voice: 300 to 3,000 Hz at ± 2 dB |
| Data | MIL-STD-188 / 114 or RS 232 data interface |
| External GPS interface (NMEA) | Direct connection of GPS receiver for periodic position reporting (option) |

PERIPHERALS / ANCILLARIES

A wide range of peripherals and ancillaries enables to tailor varied operational configurations:

- > Multiservice terminal (TRC 1731A)
- > Tactical Wireless Terminal (IBF 125)
- > Tactical Data Terminal
- > Frequency & Key Management tools (FKMU/FKLU)
- > Remote Control Unit (TRC 9730)
- > Smart Handset (TRC 9750A)
- > Fill-Gun (TRC 9724)
- > Handset, Loudspeaker, Headset
- > Li-Ion / Ni-Cd Batteries / chargers, lithium pack,
solar panel, AC power supply units
- > Carrying Harness



▲ Frequency & Key Management Unit



▲ Tactical Wireless Terminal



Remote Control Unit ▲



Smart Handset ▶

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