

# shaping the future ...in TACTICAL COMMUNICATIONS

## RADIO EQUIPMENT & ACCESSORIES



# PRC-525 Combat Net Radio

The **PRC-525** represents a revolution in the digital battlefield, enabling maximum flexibility in terms of frequency bands, waveforms and functions.

The PRC-525 based systems provide data routing, switching capability and interfacing to tactical analogue and digital networks, LAN and WAN networks, as well as PCs and other data terminal equipment connectivity. It is therefore the ideal choice for multiple roles, like network functions and mobile stations for command and control systems.

The tactical radios can be used in portable, vehicular and stationary applications including installations in movable shelters. The rugged hardware complies with the relevant MIL standards for environmental conditions. A great variety of accessories are available from EID and other suppliers for different required applications.

## Applications and Systems

### Integrated solutions for IP based tactical communications networks



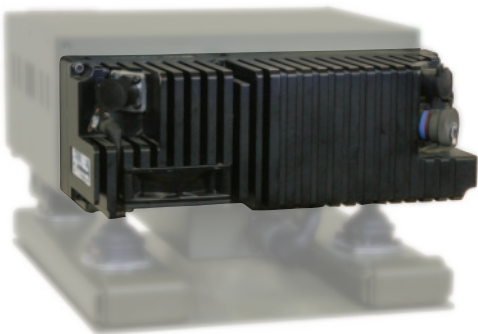
# MT-525 Radio Docking Stations



- Simple and rugged vehicular installation of tactical radios with optional VHF power amplifier (AP-525V)
- Single and double radio versions
- Shock and vibration absorbers
- Power input according to MIL-STD-1275B
- Meets demanding environmental specs MIL-STD-810E
- Ethernet connector in front panel for data access to radio
- Forced air cooling

## AP-525V 50W VHF Power Amplifier

The **AP-525V** is a Linear Power Amplifier integrated on the PRC-525 Tactical Multiband Radio family and designed to be fitted on vehicular docking stations like the MT-525. It allows continuous operation from 30MHz to 108MHz with 50W PEP/CW transmit power supporting voice and data communications either in analogue or digital modes featuring high data rate modem up to 72Kbps and high speed frequency hopping (> 500 hops/s). The control is fully automatic and includes built in protection and monitoring functions.



### Technical Characteristics

General		Environmental	Acc. to MIL-STD-810E
Frequency Range (TX / RX)	VHF: 30 to 108 MHz	Temperature	-40 °C to +70 °C (operating)
	Bypass HF: 0.1 to 30 MHz		-25 °C to +55 °C (fully specified)
	Bypass UHF: 108 to 512 MHz	Vibration	method 514.4, proc. I
Modulation and Waveform	Same as PRC-525	Shock	method 516.4, proc. I
Power Supply	18 to 32 VDC (MIL-STD-1275B)	Leakage	IP5.5 (connectors with mating or with covers)
	22 to 29 VDC (fully specified)	EMI/EMC	MIL-STD-461E CE101, CE102, CS101, CS103, CS104, CS105, CS114, RE102, CE106, RS103
RF Output Power @ 50 Ohms	1mW to 50W (with VSWR protection)	Mechanical	
Harmonics level	≤ - 60 dBc @ 50 Ω		
Intermodulation	≥ 36 dB referred to PEP		
		Dimensions (W x D x H)	290 x 140 x 101 mm
		Weight AP-525V	3.9 Kg
		AP-525VC	4.2 Kg (with cosite filter)
		Colour	RAL9005 Black

## Remote Console CDS-525 / CDD-525

- Radio Remote control
- Voice and Data Services
- Loudspeaker with Volume Control and Mute function
- Field Telephone Set Integration
- Duplex and Relay (Repeater) operation modes



# MA-250 Antenna Multicoupler

**MA-250** is a VHF wide band antenna multicoupler which allows the connection of 2 VHF transmitters to a single antenna, reducing the number of antennas in radio communication systems. The MA-250A version designed for antennas with VSWR 1:3 or higher, includes an internal attenuator to increase the isolation between the transmitters.

An emergency connection is provided for one transmitter/receiver, bypassing all multicoupler electronics.



## Technical Characteristics

General		Environmental	
Frequency Range	30 to 108 MHz	Temperature	MIL-STD-810F
Maximum RF Power (per input)	60 W (PEP, CW)		-40 °C to +70 °C (operating)
Impedance	Input and Output: 50 Ω		-25 °C to +55 °C (fully specified)
Transmitter isolation	≥20 dB @ 50Ω	Vibration	method 514.5
	≥10 dB with VSWR = 1:3 (MA-250)	Shock	method 516.5
	≥15 dB with VSWR = 1:3 (MA-250A)	Leakage	EN 60529 IPX5
Insertion loss	≤3.8 dB via coupler (MA-250)	Mechanical	
	≤6.8 dB via coupler (MA-250A)	Dimensions (W x D x H)	160 x 92 x 185 mm
	≤0.1 dB via emergency connection	Weight	3.5 kg

# SA-525/20 Antenna Tuning Unit

The **HF Antenna Tuning Unit SA-525/20** features automatic matching of electrically short HF antennas, as usually found in vehicular applications.

The SA-525/20 offers two modes of operation, the Active and the Silent tuning. In Active tuning the unit generates RF signal, optimizes VSWR and stores the tuning parameters. In Silent tuning pre-stored parameters are used. Tuning process can be remotely controlled via coaxial or optical interface for optimal NVIS behaviour. Furthermore the SA-525/20 is frequency hopping capable.



## Technical Characteristics

General		Environmental	
Frequency Range	1.5 to 30 MHz	Temperature range	MIL-STD-810F
Maximum Power Input	25 W (PEP, CW)		-40 °C to +70 °C (operating)
Power Supply	MIL-STD-1275B		-25 °C to +55 °C (fully specified)
Matched Antennas	Whip antenna ≥3m	Vibration	method 514.5
	Long-wire and broadband antennas ≤15m	Shock	method 516.5
		Leakage	method 512.4
Tuning Mode	Active or Silent tuning	EMC	MIL-STD-461E
Built-In Test	Continuous monitoring of RF level, temperature, supply voltage, etc.		CE102, CE106, CS101, CS114, RE102, RS103
		Mechanical	
		Dimensions (W x D x H)	147 x 72 x 225 mm
		Weight:	2.0 Kg



# CC-230 Active Loudspeaker

The **CC-230** is an active 15W Class D Audio Amplifier designed to monitor received signals from a radio equipment or Intercom in a compact and rugged design, adaptable to a wide range of installation needs.

- 10 level discret volume control
- Local handset / headset connection



## Technical Characteristics

### General

#### Functions

Loudspeaker with volume control and Mute function

Voice RX/TX via auxiliary handset/headset connector

Automatic Current Limit

Power Supply 10-33 VDC (MIL-STD-1275B)

Audio frequency range 350 to 5800 Hz

Audio Output Power 15W / 8 Ohms Max.

### Environmental

MIL-STD-810F

#### Temperature

-40 °C to +70 °C (operating)

-25 °C to +55 °C (fully specified)

#### Leakage

EN 60529 IPX5

### Mechanical

Dimensions (W x D x H) 174 x 72 x 134 mm

Weight 1.8 Kg

Colour RAL 6014 (Nato Green)

# ER-525V 50W PRC-525 relay station

- Range extension node and gateway between nets
- Rugged, transportable enclosure
- Two 50W PRC-525 transceivers
- Modes of Operation: Fixed Frequency, Digital Fixed Frequency, Frequency Hopping
- Services: Voice and Data (up to 72Kbps)
- Power supply box: includes gel batteries charged from AC net, diesel generator, or 300W solar panels



## HF wire antennas



- 1.5 to 30 MHz frequency range
- Horizontal polarization
- 150W CW input power
- Vehicular and portable applications

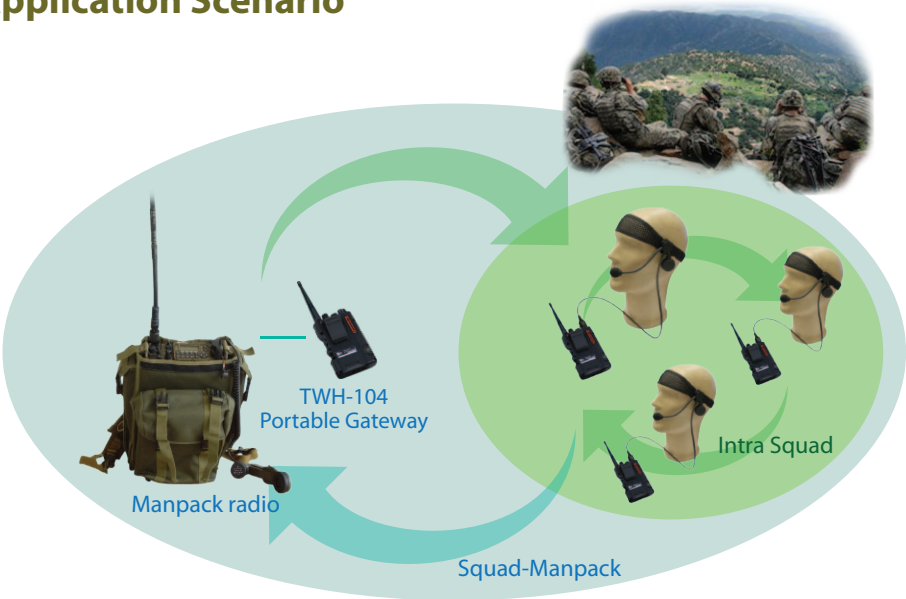
# TWH-100 series Personal Radio

The **TWH-100 series Personal Radio** is a very compact military wireless unit that provides mobility and extended features to the field deployed squads. It features encrypted voice and data, full duplex multiuser conference, separated control of communication (to squad members, to combat net radio, between squad leaders, etc.), VOX, Whisper mode and guided voice prompt menus for easy operation.

The main components of TWH-100 series Personal Radio are the TWH-101R/104R Personal Radios, a lightweight, compact and low power wireless stereo radio transceiver compatible with different kinds of headset and helmets; the TWH-104G, a gateway from a deployed TWH radio network to a combat net radio such as PRC-525 and the TWH-101C, a charger station for the mobile transceivers.



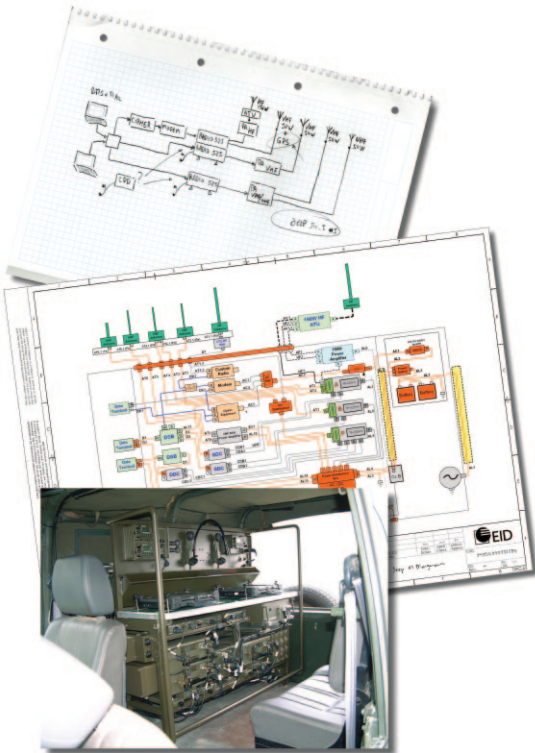
## Typical Application Scenario



## Vehicle Installation

EID resources include a qualified and experienced team in radio communications offering fast response to customer specific requirements ranging from system concept definition to system deployment and maintenance support.

Armoured vehicles, fast patrol boats, small vessels and shelters are examples of EID implemented solutions and proved customer satisfaction.



# PRC-525

## Combat Net Radio

The **PRC-525** high-performance digital radio covers HF, VHF and UHF bands using a single unit.

Thanks to different high-speed data modes and protocols as well as different antijam modes, it perfectly integrates into secure tactical communications networks.

All versions of the PRC-525 family are based on one mechanical platform, with a common logistic concept and the same man machine interface.

The equipment is software defined, so new features and releases can be simply downloaded even in the field.



## Technical Characteristics

General		
Frequency Range		1.5 to 512MHz
Channel Spacing	HF	1 Hz
	V/UHF	1 Hz, 5, 6.25, 8.33, 12.5, 25, 50 KHz
Frequency Stability		± 1 ppm
Pre-set Pages		100 (10 available on rotary switch)
Modulations		A1A (CW), A3E (AM), J3E (USB, LSB), J2D, F3E (FM), F3E WB, F1D, A3E WB
Waveforms		Secom H (HF frequency hopping), Secom V (VHF and UHF frequency hopping), OFDM, Stanag 4285, Stanag 4529, Stanag 4539, Stanag 4538, Have Quick
Operation Modes		Fixed frequency (FF), secured frequency hopping (HF, VHF and UHF) and DDF, GPS mode (time, position), ALE
Built-In Test (BITE)		Power Up BIT, Manual BIT, Continuous Monitoring
Power Supply		16 to 30 VDC 19 to 30 VDC (fully specified)
Manpack	Battery	Li Ion (rechargeable)
	Autonomy	>20 h (5 W, FM, 1:1:8 at 25°C)
Receiver		
Sensitivity		(for 10dB SINAD)
	HF-SSB	-115 dBm
	VHF-FM	-115 dBm
	UHF-FM	-112 dBm
Squelch		Syllabic squelch, 150 Hz tone squelch, signal squelch, RSSI (relative signal strength indication)

Transmitter		
RF Power Output		
HV Version	HF	1 mW, 0.5, 1, 2, 5, 10, 20 W
	VHF	1 mW, 0.5, 1, 2, 5, 10 W
VU Version	VHF, UHF	1 mW, 0.5, 1, 2, 5, 10 W
Options		
Frequency Hopping	SECOM H, SECOM V, HAVE QUICK II	
Data transmission	STANAG 4285, STANAG 4539, STANAG 4529 (HF), OFDM 72 kbps (VHF, UHF, FF)	
ALE (HF)	2G: FED-STD-1045/1046/1049	
	3G: MIL-STD-141B, STANAG 4538	
Environmental		MIL-STD-810E
Temperature	-40 °C to +70 °C (operating)	
	-25 °C to +55 °C (fully specified)	
Vibration	method 514.4	
Shock	method 516.4	
Leakage	method 512.3	
	1 m immersion during 2 h	
EMC		MIL-STD-461E
		CE102, CE106, CS101, CS103, CS104, CS105, CS114, RE102, RS103, RS105
Mechanical		
(manpack with battery pack)		
Dimensions (WxDxH)	199 x 309 x 74 mm	
Weight	5.9 Kg	

## Vehicular Radio Communications Solutions

- PRC-525 multi-band Combat Net Radio
- Docking Stations
- Power Amplifiers
- Remote Consoles
- Active Loudspeaker
- Antenna Multicouplers
- Antenna Tuning Units
- Power Units
- Relay Stations
- HF Wire Antennas
- System Engineering

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