The Tactical Communications Bridge 1 performs as the connection point between two radio systems. The TCB-1 incorporates many features including simplex and duplex repeater operation, different protocol radio interoperability, radio link extender and cross-band repeater operation. The ideal interface between Analog and Digital trunked radio systems.

If your requirement is for a remote, rapid deployment repeater, either simplex or duplex, the TCB-1 will meet your needs. With its 2 minute built-in voice recorder on each of the two radio ports, the TCB-1 can provide an audio store and forward system for simplex operation, and a duplex repeater mode for duplex repeater operation.

When operating the TCB-1, a local speaker and microphone port is available for local operation, without compromising the number of available radio ports. Housed with a 10 watt, 4” speaker, the TCB-1 provides plenty of audio for use in a noisy environment. The microphone port accepts RJ-45 formatted microphones. The user can also configure what radio ports the speaker / microphone audio is routed.

Adjuster Knob: Accesses the set-up and configuration menus. Serves as the up and down selection control along with the <Enter> key. Rotate the knob left or right to select features, and press the knob to <Enter> the selection.

Volume Control Knob

Ext Speaker Port

Microphone Port

Mode A/B Switch: Control the connection between the two radio ports with a flick of a switch. Switch also available remotely utilizing a six digit DTMF sequence. Utilizing a DTMF pad, the user can connect or disconnect the two radio ports with this built-in feature.

Affordable solution to interoperability without sacrificing features.

TCB-1 Features
- Powerful DSP based digital audio interface
- Adjustable VOX detector
- Non-VOX based COR inputs
- Supports Analog/Digital radios
- Support for several cellular and PTT style mobile phones
- Digital Audio Delay minimizes Trunking receiver clipping
- Speaker/ microphone for dispatch operator
- Front panel / DTMF control to select two modes of operation
- Large assortment of radio interface cables available for both handheld/mobile radios
- Windows™ based software for remote control operation
- Supports two radio ports and operates from 12VDC (AC Adapter Included)
- Affordable Price
TCB-1 SPECIFICATIONS

**POWER & TEMP**
- **Voltage**: 11V .. 18V DC / 350mA DC @ +12V/DC.
- **Current**: 2 pin Phoenix Power Connector
- **Temp**: -4°F to 158°F (-20°C to 70°C)

**SIZE**
- **Length**: 5.2 inches (132.1 mm)
- **Width**: 8.375 inches (212.7 mm)
- **Depth**: 2.625 inches (66.7 mm)
- **Weight**: 2.75 pounds (1.2 kg)

**RADIO CHARACTERISTICS**
- **Ports**: 2 radio ports, RJ-45 conn (Balanced Input / Output).

**AUDI N CHARACTERISTICS**
- **Level**: Input 150mV p-p .. 8V p-p, 96dB (16 bit digital conversion ADC)
- **Range**: > 50K ohms, AC Coupled
- **Response**: 2Hz - 3.5 KHz (-3dB point)

**OUTPUT**
- **Level**: 0V p-p .. 4.30V p-p, 96dB (16 bit ADC)
- **Range**: 600 ohms, AC Coupled
- **Response**: 15Hz - 3.5 KHz (-3dB Point), (600 Ohm Load)
- **Digital Voice**: 4 min. total per radio port, 2 min. for Simplex Repeater function
- **Local Speaker**: 4”, 6 watts nominal, 10 watts max, 1/8” mono external speaker jack
- **Microphone**: RJ-45 microphone (HMN-3596a or equiv)

**I/O CHARACTERISTICS**
- **COR & CTCSS Inputs**: 0V - 30V, (12 bit digital converted ADC), Programmable Pull-up/ Pull-down load, 55K Ohm input load
- **Access Modes**: VOX (Activates on audio), COR, CTCSS, COR & CTCSS, COR or CTCSS
- **PTT Output**: 0V - 40V, 100mA maximum current (DB-9), 0V - 200V, 2 Amp

**DIGITAL CHARACTERISTICS**
- **DSP Processor**: 40 MIPS Motorola DSP w/ field software upgrades.
- **Firmware**: Program & Data storage Flash memory based.
- **Audio CODEC**: 16 Bit @ 8 KHz sample rate, 4 KHz in/output bandwidth, LCD 16 character x 2 line. LCD Backlight control either ON, OFF or User Adjustable Timer.
- **RS-232 Port**: 300 baud - 115 K baud selectable. GUI remote control interface software from the RS-232 port or Telnet.

**OPTIONS AVAILABLE**
- **Radio Cables**: Most handheld / mobile radios are supported & more added weekly. Custom cables available for most radios listed in radio database. Contact us for pricing & availability cables & radios not listed.
- **E&M Type 3 Interface**: TCB-1 supports several E&M interfaces which enable TCB to connect to external VoIP router equipment (Cisco routers).
- **Mobile Operations Case**: Shock mount case available. Holds TCB-1 & two mobile radios. It’s constructed of ABS plastic & has both front & rear removable covers.
- **19” Rack Mount Ears**: Available for perm rack mounting.

**OPERATING MODES**
- **Conventional**: Half duplex transceiver. Receiver audio ignored when transmitter is active. Fixed audio delay available.
- **Trunked**: Same as conventional except adaptive digital audio delay & channel available tone on PTT enabled.
- **Duplex Radio**: Same as conventional except receiver audio & transmit audio paths both enabled. Duplex Repeater Receiver activity causes a PTT condition on the same port as the receiver. Ideal for analog repeater ops. Simplex Repeater Receiver audio is recorded, up to 2 min. When receiver unkeys recorded audio is played back.

**AUDIO DELAY DESCRIPTION**
- **Fixed**: The receiver audio, digitally delayed up to 3.0 sec. Used when trunked system radio does not generate a "Channel Available" tone. When port is configured as trunked port, TCB-1 configures digital audio delay into adaptive audio delay, allowing delayed audio to be varied based on info received back from trunked radio during transmit. Configure trunked radio to generate "Channel Available" tone while in transmit. TCB-1 delays audio as long as tone present. When tone stops, TCB-1 begins playing back delayed audio. Ensures no audio info’s lost during trunking channel acquisition time.

**DATABASE DESCRIPTION**
- **Radio Database**: Database set-up info for up to 50 radio types. Select radio type connected to each radio port. Once selected, receiver and transmitter setting automatically recalled for the selected radio. No adjustments needed. Tech can edit radio’s settings to exactly match the connected radio. If radio isn’t found in radio database, tech can develop own profiles using the radio set-up utility.