

## Features

- **Compatible with Existing Handheld Radios**
- **Utilizes a Synthesized Radio.**
- **Frequency Range 450-480 MHz.**
- **Frequencies and Private Line Tones are easily modified via computer.**
- **Transmission Time Limiter Circuit - Limits transmission time to prevent locking up and damaging the transmitter.**
- **Rugged Industrial, Dust-Resistant Package.**
- **Clear, Reliable Voice Communication.**
- **Battery Back-up Option**

GAI-TRONICS' 4500 Series Industrial Radio is a wireless station providing two-way voice communication in the UHF band. Radio communications are possible even in the most severe environmental conditions: on bridge and gantry cranes, ore and coal bridges, unloaders, manlifts, or any moving equipment where hardwired systems will not work or are not economical. GAI-Tronics' Industrial Radio operates reliably over the wide temperatures and voltage variations found in heavy industrial environments. This unit also promotes safety and increases productivity by eliminating confusing hand signals and by keeping all personnel in constant communication.

GAI-TRONICS' Industrial Radio uses a radio frequency which is less subject to interference than most other radios. In order to allow easy upgrade, the Industrial radio adapts to the same mounting plates and microphone, speaker, and power connections as existing Trolleyphone systems, and is equally rugged and dust-resistant. The Industrial radio uses modular construction and pre-wired connectors to allow quick change-out if service is required.



**Components of GAI-TRONICS Industrial Radio System include: Transceiver with power cord; ground plane antenna; handheld dynamic microphone; and wall mountable loudspeaker with volume control.**

The Industrial Radio features Private Line capabilities which can be modified via computer. The Private Line feature allows individuals to receive conversations appropriate to them and avoid hearing unrelated conversation. Private Line programmed units can only have two way communications with units that have identical Private Line programming. Private Line tones can be Continuous Tone Coded Squelch System (CTCSS) or Digital Quiet Call (DQC).

The Industrial Radio offers six separate channels for independent communications. These channels are programmed via computer and thus are easily changed to meet specific needs. A typical configuration has one channel dedicated to communication from ground to crane or between cranes, and the other channels dedicated to communication with a control room, maintenance personnel or another segment of the plant.

### SPECIFICATIONS

#### Electrical

Frequencies ..... As Specified by the Customer (Must be between 450 - 480MHz)

Supply Voltage Range

#### 4512-001

(270 V dc) Voltage ..... 200 to 350 V dc range, (270 V dc nominal)

(270 V dc) Power Consumed ..... Standby/Max. 8 Watts / 30 Watts

#### 4514-001

(120 V ac) Voltage ..... 90/132 V ac range (50/60 Hz), (120 V ac nominal)

(120 V ac) Power Consumed ..... Standby/Max. 8 Watts / 30 Watts

(220 V ac) Voltage ..... 80/260 V ac range, (50/60Hz) (220 V ac nominal)

(220 V ac) Power Consumed ..... Standby/Max. 8 Watts / 30 Watts

Speaker Amplifier ..... 8 Watts max into 16 ohm

Microphone ..... M12895 Dynamic, Amplified, Noise Cancelling

Speaker ..... 13354-001 Wall-mount 16 watt with volume control

Antennas ..... CN3614 3dB Whip Antenna; 19502-009 Flexible Stubby Whip Antenna

Construction ..... Dust Resistant Steel Enclosure

Connections ..... MS series connectors

Watch Dog Timer ..... Factory set at 1/2 min. Also strappable for 1 or 2 min.

#### Radio Transceiver 450-480-MHz

##### Transmitter

RF Output ..... Switchable 2 or 5 watts

Frequency Stability ..... 5PPM

Modulation Distortion ..... Less than 4%

Spurious and Harmonic Frequencies ..... -50dB max

Modulation ..... 1000KHz max/500Hz min.

Encode Capabilities ..... Continuous Tone Coded Squelch System (CTCSS), Digital Quiet Call (DQC)

##### Receiver

Channel Spacing ..... 12.5 KHz

Useable Bandwidth ..... 15mHz VHF, 20 mHz UHF

Audio Output ..... 8 watt, 8 or 16 ohm

Frequency Stability ..... 5PPM

Sensitivity ..... 12dB Sinad 0.25  $\mu$ V VHF, 3  $\mu$ V VHF

Selectivity ..... 70dB @ 30 KHz, 65dB @ 25 KHz

Intermodulation ..... 65dB

Decode capabilities ..... CTCSS, DQC

Audio Response ..... +1, -3dB from, 6dB/octave, preemphasis from 300-3KHz

Audio Distortion ..... Less than 3%

##### Mechanical

Dimensions ..... 14.125 (358.8)H x 11.250 (285.75)W x 3.00 (76.2)D; inches (mm)

Weight ..... 10 pounds (4.5 kg)

Construction ..... Painted cold rolled steel enclosure with stainless steel cover

Mounting ..... Accepts mounting bracket CH3272 with carry handle;

four 5/16(7.94mm)dia. mounting holes in mounting feet in the four corners

Connections ..... Power Cord, BNC antenna connector, Microphone connector, Speaker connector

Channel Selector ..... Six position rotary

Adjustments ..... Speaker volume (part of external speaker); CTCSS frequency select dip switch

##### Environmental

Sealing ..... Dust Resistant Steel Enclosure

Vibration ..... Exceeds EIA Standards

Temperature Range ..... -30° C to +60° C

### ORDERING INFORMATION

**4512-001** 270 V dc Transceiver  
**4514-001** 120/220 V ac Transceiver  
**4512-001FR** 270 V dc Transceiver Factory Programmed  
**4514-001FR** 120/220 V ac Transceiver Factory Programmed

**MI2895** Handheld Amplified Dynamic Microphone  
**13354-001** Wallmount speaker with volume control  
**CN3614** 3dB Antenna 25' Cable  
**CN3614HT** 3dB Antenna 25' Hi Temp Cable  
**CN3615** 3dB Antenna 50' Cable

**CN3616** 3dB Antenna 75' Cable  
**CN3617** 3dB Antenna 100' Cable  
**19502-009** Stubby Whip Antenna  
**CH3272** Mounting Plate  
**CN3017** Power Cable 270 V dc  
**CN3205** Power Cable 120 V ac  
**19101-024** Radio Programming Kit