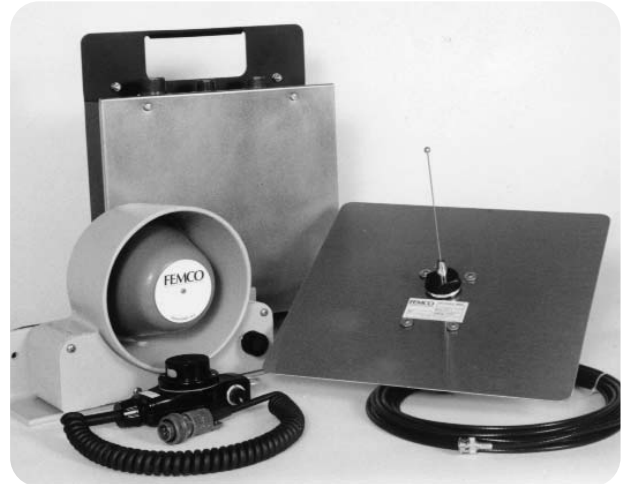


### Features

- **Compatible with Existing Handheld Radios**
- **Utilizes a Ritron 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 Six Channel 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, manningot buggies, or any moving equipment where hardwired systems will not work or are not economical. GAI-Tronics' Six Channel 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 Six Channel Radio uses a radio frequency which is less subject to interference than most other radios. In order to allow easy upgrade, the Six Channel 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 Six Channel radio uses modular construction and pre-wired connectors to allow quick change-out if service is required.



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

The Six Channel 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 Six Channel 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.

In addition, GAI-Tronics offers an automatic, voice-activated (VOX) audio coupler designed to interface the Six Channel radio system to Page/Party<sup>®</sup>, and Call/Talk<sup>®</sup> systems. The dual audio coupler is manufactured as a dust-resistant, rugged industrial package and includes a transmitter and receiver connected to a dedicated Six Channel Radio base station.

## SPECIFICATIONS

### Electrical

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

Supply Voltage Range

#### 4512-001

(270VDC) Voltage ..... 200 to 350VDC range, (270VDC nominal)  
(270VDC) Power Consumed ..... Standby/Max. 8 Watts / 30 Watts

#### 4514-001

(120VAC) Voltage ..... 90/132VAC range (50/60 Hz), (120VAC nominal)  
(120VAC) Power Consumed ..... Standby/Max. 8 Watts / 30 Watts  
(220VAC) Voltage ..... 80/260VAC range, (50/60Hz) (220VAC nominal)  
(220VAC) Power Consumed ..... Standby/Max. 8 Watts / 30 Watts

Supply Voltage Filtering ..... TP4512ASYN Two Stage LC, RES, MOV

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

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

Speaker ..... 651301/102 Cast Aluminum, 16 ohm with Volume Control

Antennas ..... CN3614 3dB Whip Antenna  
CN3871 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 watts

Frequency Stability (-30°C to 60°C) ..... 5PPM

Modulation Distortion ..... Less than 4%

Spurious and Harmonic Frequencies ..... -50dBc 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 (-30°C to 60°C) ..... 5PPM

Sensitivity ..... 12dB Sinad 0.25 µV VHF, 3 µV 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 ..... 12.2.25(311.2)W x 15.5(394)H x 6.25(158.8)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

**4512-001FR** 270VDC Transceiver Factory Programmed at Factory  
**4514-001FR** 120/220VAC Transceiver Factory Programmed at Factory  
**M12895** Handheld Amplified Dynamic Microphone

**651301/102** Cast Metal 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  
**CN3871** Stubby Whip Antenna  
**CH3272** Mounting Plate  
**CN3017** Power Cable 270VDC  
**CN3205** Power Cable 120VAC  
**1931888-3011** VOX operated Page/Party® to Radio Coupler  
**19101-024** Radio Programming Kit

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Quality Management Systems Certified - ISO9001:2000

The policy of GAI-Tronics is one of continuous improvement; therefore the company reserves the right to change specifications without notice.