

# Voice Radio

Hubbell Unitized Radio Communication Systems

Catalog 31.500 • April 1999 • New  
Replaces Catalog Sheet 31510 of May 97

Hubbell Voice Radio Systems provide clear, distinct voice communications and paging between widely separated locations in a plant, without the need for extensive cable runs. A typical Voice Radio is wall mounted in a NEMA 12 enclosure and provides seven separate channels plus an "All Call" or "Paging" channel, which is monitored continuously. Also available are a two-channel radio and versions that retrofit a "Trolleyphone" installation. All Voice Radios are designed to withstand the rough usage associated with steel mill service, yet the sets are attractive enough for use in locations where appearance is important. Noise canceling mikes are standard. The eight-channel set is available with either the mike or a telephone style handset. The handset uses a noise canceling mike element and a "push-to-talk" bar switch.

All Voice Radios are programmable and fully compatible with hand-held radios utilizing the 450 to 470 MHz band. Tone coded squelch (CTCSS) and digitally coded squelch (DCS) are user selectable and programmable. All channels are half duplex (push-to-talk).

## Features

- Solid state hook switch
- Speaker volume adjustment through front panel
- Noise canceling electret mike
- Up to 8 programmable RF channels
- Compatible with hand-held radios (450–470 MHz)
- Speaker amplifier rated 12 Watt
- Transmitter rated at 2 Watt RF power
- Simple to operate
- Attractive appearance
- Full line of speakers, antennas, and other accessories



**8 – Channel Voice Radio with Mike  
NEMA 12/Indoor**



**8 – Channel Voice Radio with Handset  
NEMA 12/Indoor**



**2 – Channel Voice Radio with Mike  
NEMA 12/Indoor**

## Typical System Configuration

A typical Hubbell Cat. 31.500 Voice Radio Unitized Communication System might consist of:

### 4 - Indoor 8-channel Voice Radios with handsets

- 4 Cat. 31.510, 8-Channel Voice Radios with handset, wall mount, NEMA 12 indoor, 120V ac.
- 4 SP 2766 Horn Speakers with integral driver, 30W, standard, (10"h, 10"w, 11"d), indoor/outdoor.
- 4 Antennas with 25 ft. of coax cable with BNC connector.

### 2 - Outdoor 8-channel Voice Radios with mikes

- 2 Cat. 31.510, 8-Channel Voice Radios with mike, wall mount, NEMA 12 indoor, 120V ac.
- 2 NEMA 4X outdoor fiberglass boxes for above Voice Radios.
- 2 SP 2566 Horns, standard, (17"dia., 13"d)
- 2 SP 2714 Compression Drivers, 30W, indoor/outdoor, for above horns.
- 2 Antennas with 25 ft. of coax cable with BNC connector.

### 3 - Indoor 2-channel Voice Radios with mikes

- 3 Cat. 31.520, 2-Channel Voice Radios with mike, wall mount, NEMA 12 indoor, 120V ac.
- 3 SP 2585 Horn Speakers with integral driver, 15W, small, (8"dia., 7"d), indoor/outdoor.
- 3 Antennas with 25 ft. of coax cable with BNC connector.

### 1 - Transceiver and Coupler

- 1 Cat. 31.540, 2-Channel Voice Radio dedicated transceiver, wall mount, NEMA 12 indoor, 120V ac.
- 1 Cat. 31.650, Coupler, voice activated, for tying the Voice Radio into the Wired Audio System. Wall mount, NEMA 12 indoor, 120V ac.

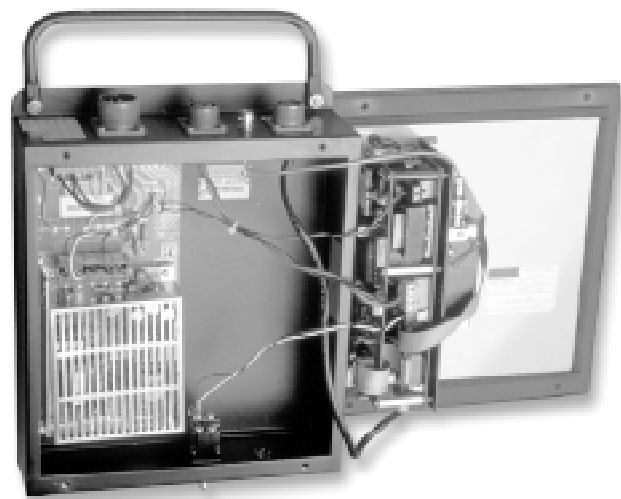
For a complete selection of speakers, please refer to Catalog 31.600, Hubbell Wired Audio.

## Voice Radio To Replace a "Trolleyphone" Installation

This custom designed Voice Radio package is a "Radio" replacement for a "Trolleyphone" installation. The radio transceiver has mounting studs to fit directly onto an existing trolleyphone mounting plate, and "MS" connectors on top for quick and easy exchange. Simply mount the transceiver, and connect the power, mike, speaker, and antenna.

A complete retrofit package would use a radio set in the crane cab and another on the floor. Such a system might include the following:

- 2 Cat. 31.530, 2-channel Voice Radios with "MS" connectors, NEMA 12 indoor.
- 2 Noise canceling mikes with "MS" connector.
- 2 Power cords (5 ft.) with "MS" connector.
- 1 Remote Box Speaker with 9 ft. cord and "MS" connector, for the crane cab.
- 1 Remote Horn Speaker with 9 ft. cord and "MS" connector, for use on the floor.
- 2 Antennas with 25 ft. coax cable and BNC connector



## Radio Transceiver

*for use with Audio Couplers*

The Voice Radio system can be connected to a Wired Communication system through the use of a dedicated radio transceiver and a coupler. Depending on system configuration, this may also give hand-held radios access to the Wired Communication system.

The dedicated transceiver (Cat. 31.540) is in a wall mount NEMA 12 enclosure with "MS" connectors on top for easy connection to the cables coming from the audio coupler. This transceiver picks up the radio signals and feeds them into the wired audio system via the coupler.

Fully automatic voice activated couplers (Cat. 31.650) are furnished, as most appropriate to the specific application.



**Dedicated Transceiver**  
*for use with Coupler*



**Audio Coupler**  
*(see Cat. 31.650)*

## Components

**Box Speaker** (SP 2769) with integral volume control and 9 ft. long cable with "MS" connector. (12"h, 10"w, 5"d)



**Horn Speaker** (SP 2777) with 9 ft. long cable and "MS" connector. (8"dia., 7"d)

**Microphone** (MI 3115), noise canceling electret type, with coiled cord and "MS" connector.



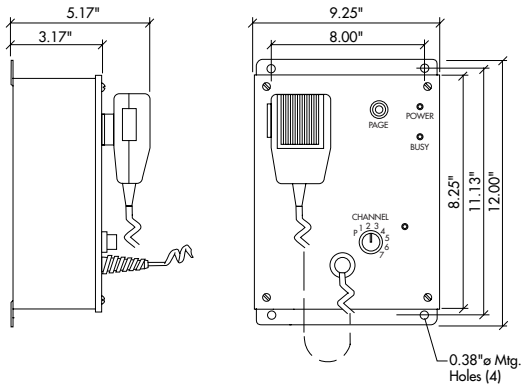
**Power Cables** 5 ft. long with "MS" connector.

120 Volt ac (CN 4255)

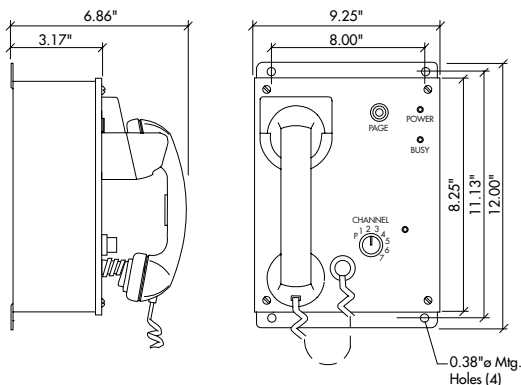
240 Volt ac (CN 4254)

250 Volt dc (CN 4254)





NEMA 12 Voice Radio with Mike – Wt. 9 lbs.



NEMA 12 Voice Radio with Handset – Wt. 10 lbs.

## Specifications

### Electrical

#### 12.5 Vdc Model

Voltage ..... 11.25–13.75 Vdc range, (12.5 Vdc nominal)  
 Power Consumption ..... 2.25 W (standby), 22.7 W (max.)

#### 270 Vdc Model

Voltage ..... 200–350 Vdc range, (270 Vdc nominal)  
 Power Consumption ..... 7.7 W (standby), 35.8 W (max.)

#### 120 Vac Model

Voltage ..... 90–132 Vac range (50/60 Hz),  
 (120 Vac nominal)  
 Power Consumption ..... 11.6 VA (standby), 30.4 VA (max.)

#### 220 Vac Model

Voltage ..... 180–260 Vac range (50/60 Hz),  
 (220 Vac nominal)  
 Power Consumption ..... 16.6 VA (standby), 57.2 VA (max.)

### UHF Transmitter

RF Power Output ..... 2 Watts  
 Conducted Spurs ..... -16 dBm (max.)  
 Frequency Stability ..... -5 ppm (max.)  
 FM Hum & Noise ..... -37 dB  
 Modulation Sensitivity ..... 70 mV RMS/kHz  
 Audio Response ..... 6 dB (preemphasis)  
 Audio Distortion ..... <5%  
 Attack Time ..... <10 msec

### UHF Receiver

Sensitivity ..... 12 dB SINAD – 0.40  $\mu$ V (max)/0.28  $\mu$ V (typ.)  
 Frequency Stability .....  $\pm$ 5 ppm (max.)  
 Conducted Spurs ..... -57 dBm (max.)  
 Selectivity ..... 60 dB (typical)  
 Intermodulation ..... 60 dB (typical)  
 Spurious Rejection ..... 50 dB (typical)  
 Image Rejection ..... 50 dB (typical)  
 FM Hum & Noise ..... -37 dB  
 Frequency Response .....  $\pm$ 2 dB (flat) from DC to 10kHz

### Audio

Audio Output ..... 12 W RMS (max.) into 8 or 16 ohms  
 Audio Distortion ..... <5%

### Squelch

Squelch ..... Combined CTCSS (Continuous Tone Coded Squelch System) and DCS (Digitally Coded Squelch) custom designed module. Pre-programmed with the standard CTCSS tones and DCS codes.

### Mechanical

Dimensions ..... 9.25" (W) x 12" (H) x 6.5" (D)  
 Weight ..... 10 lbs  
 Construction ..... NEMA Type 12 Painted cold rolled steel enclosure  
 Mounting ..... Wall Mount

<http://www.hubbell-icd.com/communications/>



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