



Clockwise: ICS-22 mounted in DT-Box (shown with optional mic), ICS-21, ICS-24

## FEATURES

- **Smaller format stations mount in wall, console, or portable enclosure**
- **Models offer one-, two-, or four-key operation**
- **Connect directly to port of a matrix frame**
- **Support matrix call signaling**
- **Program talks and listens with matrix configuration software**
- **Separate analog program input for ICS-21 and ICS-22**
- **Fit into standard U.S. 4-gang and 2-gang electrical boxes**
- **Optional desk-top enclosure for ICS-21 and ICS-22**

## DESCRIPTION

The ICS-21 and ICS-22 speaker stations are wall-, console-, or enclosure-mountable units for the Matrix Plus digital intercom system. These units have one and two keys, respectively. The ICS-24 is a 4-key headset station.

All of these units connect directly with a port in the matrix card frame, allowing talk and listen functions between the station and other stations or interfaces within the system. The multi-key stations permit the user to talk and listen on any one of the assigned keys at a time.

Talk and listen assignments for the individual keys are programmed via the PGM-WIN configuration software. The graphical interface depicts the station, and the system administrator enters the desired talk and listen labels into the provided fields.

All of these matrix stations have answer-back capabilities, and feature call stacking. Any station in the matrix communications system may address an ICS-21, ICS-22, or ICS-24, even if it is not one of the selected stations on these units' keys. The user may toggle through and answer any or all of the calls, which will be indicated by the flashing of the call-waiting LED and/or an audible call signal.

### ICS-21 SINGLE-KEY PUSH-TO-TALK SPEAKER STATION

The ICS-21 is a single-channel station, operating with the matrix intercom in a push-to-talk mode. The unit has an integral, flush-mounted microphone, and an internal speaker. It features audible and visual call signaling, and analog speaker-level adjustment. The station's microphone may be activated via a listen key of another ICS station, for applications where remote listening is desired.

The ICS-21 is powered by an external AC power-supply module. It may be wall or console mounted in a standard 4-gang electrical box, or mounted in the DT-Box portable desktop enclosure.

### ICS-22 TWO-KEY FULL-DUPLEX SPEAKER STATION

The ICS-22 operates as a two-key station, permitting communication with one of two assigned labels at a time. The full-duplex unit may be used with a headset, or with an optional gooseneck microphone and the internal speaker. When used with the gooseneck mic, the adjustable VOX circuitry automatically detects the user's voice, opening the mic circuitry and dipping the speaker level to minimize feedback.

*Matrix Plus 3*  
DIGITAL INTERCOM

by Clear-Com

**SPECIFICATIONS****ICS-21, ICS-22, ICS-24**

**SYSTEM COMPATIBILITY:**  
MTX-A8 or MVX-A8 matrix card

**SOFTWARE VERSION:**  
PGM-WIN Version 2.2 or higher

**LINE INPUT/OUTPUT**

Type: Transformer Balanced

Input Impedance: 8K Ohms bridging

Output Impedance: 150 Ohms

Level: 0 dBv nominal

Frequency Response: 100 Hz - 15 kHz, +/-2 dB

**INTERNAL CONNECTORS**

Intercom: RJ-45

AC Power: 2-position plug-on screw terminals

Program (ICS-21, ICS-22): 3-position  
plug-on screw terminals

**POWER REQUIREMENTS**

Voltage: 16 - 20 VAC from external power supply  
(or 16 VAC doorbell transformer)

Current,

ICS-21, ICS-22: 100 mA, average

ICS-24: 30 mA, average

**ENVIRONMENTAL**

32 degrees - 122 degrees F (0 degrees - 50 degrees C)

**ICS-21**

**NUMBER OF KEYS:** 1

**PANEL MICROPHONE PRE-AMP**

Input Type: Electret

Panel Mic Gain Shift with Sensitivity Switch:  
+6.5 dB

**PRE-AMP RESPONSE CURVE**

Frequency Response: 250 Hz - 12 kHz,  
contoured for intelligibility

Limiter Range: 20 dB

**SPEAKER AMPLIFIER**

Speaker Type: 2.5" round, 16 Ohms

Power Output: 2 watts into 16 Ohms

Frequency Response: 200 Hz - 15 kHz, +/-3 dB

Signal-to-Noise: 75 dB

Distortion: < 0.5% THD @ 1 kHz

Speaker Level: 98 dB SPL @ 3 feet

**PROGRAM AMPLIFIER**

(Transformerless, balanced differential input)

Input Level: -20 dBV

Input Impedance: >100K Ohms

Frequency Response: 150 Hz - 15 kHz, +/-3 dB

**INTERNAL CONTROLS**

(1) Mic sensitivity switch

(1) Minimum Volume Level control

(1) Remote operation option switch

**FRONT PANEL CONTROLS  
& INDICATORS**

(1) Program level control (1) Answer-back button

(1) Intercom level control (1) Talk LED

(1) Talk button (1) Call-Waiting LED

**DIMENSIONS**

8.25" W x 4.5" H x 1.75" D

(210 mm x 114 mm x 44 mm)

**WEIGHT**

1.14 lbs. (0.51 kg)

The ICS-22 features audible and visual call signaling, and analog speaker-level adjustment. The station is powered by an external AC power-supply module. It may be wall or console mounted in a standard U.S. 4-gang electrical box, or mounted in the DT-Box portable desktop enclosure.

**ICS-24 FOUR-KEY HEADSET STATION**

The ICS-24 headset station operates as a four-key station, permitting communication on one of four assigned labels at a time. The full-duplex unit is used with a headset, and may be wall- or console-mounted in a standard U.S. two-gang electrical box. An answer-back button and call-waiting LED are provided. The station is powered by an external AC power-supply module.

**PROGRAM INPUT**

The ICS-21 and ICS-22 offer a separate balanced program input, with a front-panel level control. Program material can be locally fed to the speaker stations, independent of the matrix, for monitoring applications.

**SYSTEM WIRING**

The ICS stations are connected to the ports of the matrix card frame with 4-pair CAT-3 cable and RJ-45 connectors. The units are locally powered via the provided external power supply module.

Use 2.0" depth minimum electrical box

**ICS-22**

**NUMBER OF KEYS:** 2

**HEADSET MICROPHONE PRE-AMP**

Input Type: Dynamic

Impedance: 1,000 Ohms

Input Level: -55 dBV nominal; -10 dBV max.

**PANEL MICROPHONE PRE-AMP**

Input Type: Electret

Input Level: -45 dBV nominal

Panel mic gain shift when VOX is tripped: +10 dB

**PRE-AMP RESPONSE CURVE**

Frequency Response: 250 Hz - 12 kHz,  
contoured for intelligibility

Limiter Range: 20 dB

**HEADPHONE AMPLIFIER**

Load Impedance Range: 50 - 2,000 Ohms

Output Level:

+20 dBV across 600 Ohms, minimum

Distortion: < 0.5% THD @ 1 kHz

Frequency Response: 200 Hz - 15 kHz, +/-3 dB

Power Output: 110 dB SPL

**SPEAKER AMPLIFIER**

Speaker Type: 2.5" round, 16 Ohms

Power Output: 2 watts into 16 Ohms

Frequency Response: 200 Hz - 15 kHz, +/-3 dB

Signal-to-Noise: 75 dB

Distortion: < 0.5% THD @ 1 kHz

Speaker Level: 98 dB SPL @ 3 feet

**PROGRAM AMPLIFIER**

(Transformerless, balanced differential input)

Input Level: -20 dBV

Input Impedance: >100K Ohms

Frequency Response: 150 Hz - 15 kHz, +/-3 dB

**FRONT PANEL CONNECTORS**

Panel Mic: (1) 1/4" panel mounting jack

Headset: (1) XLR-4M

**FRONT PANEL CONTROLS  
& INDICATORS**

(1) Panel/Headset

Mic switch

(1) VOX control

(1) Talk/Listen selector

(1) Program level control

(1) Intercom level  
control switch

(1) Sidetone control

(1) Answer-back button

(1) Speaker On-Off

(1) Talk LED

(1) Call-Waiting LED

(1) Talk button

**DIMENSIONS**

8.25" W x 4.5" H x 1.75" D

(210 mm x 114 mm x 44 mm)

**WEIGHT**

1.34 lbs. (0.61 kg)

Use 2.0" depth minimum electrical box

**ICS-24**

**NUMBER OF KEYS:** 4

**HEADSET MICROPHONE PREAMP**

Input Type: Dynamic

Impedance: 1,000 Ohms

Input Level: -55 dBV nominal; -10 dBV max.

**PRE-AMP RESPONSE CURVE**

Frequency Response: 250 Hz - 12 kHz,  
contoured for intelligibility

Limiter Range: 20 dB

**HEADPHONE AMPLIFIER**

Load Impedance Range: 50 - 2,000 Ohms

Output Level:

+20 dBV across 600 Ohms, minimum

Distortion: < 0.2% THD @ 1 kHz

Frequency Response: 200 Hz - 15 kHz, +/-3 dB

**FRONT PANEL CONNECTORS**

Headset: (1) XLR-4M

**FRONT PANEL CONTROLS &  
INDICATORS****INDICATORS**

(1) Intercom level control (1) Channel selector

(1) Sidetone control (1) Talk LED

(1) Talk button (1) Call-Waiting LED

(1) Answer-back button

**DIMENSIONS**

4.625" W x 4.5" H x 1.75" D

(117 mm x 114 mm x 44 mm)

Use 2.0" minimum electrical box

**WEIGHT**

0.64 lbs. (0.28 kg)

