

M A I N S T A T I O N



CS-210 TWO-CHANNEL MAIN STATION

F E A T U R E S

- Supports up to 60 Remote Stations on 2 channels
- Accepts mic-level or line-level Program Input
- Program assignable to either or both channels
- Visual Call Signalling
- Stage Announce to external systems
- Separate intercom, program, and sidetone level controls
- Mic limiter
- Circuit-breaker-protected with short circuit indicator and re-set button
- Switch-selectable operation from 115 VAC or 230 VAC mains
- Lightweight, weather-proof, portable enclosure



D E S C R I P T I O N

The CS-210 is a portable main station with a regulated power supply and a versatile monitoring system. It features Clear-Com's excellent speech intelligibility in high- and low-noise environments.

The CS-210 contains a mic preamp with limiter and drives a standard Clear-Com headset to levels greater than 110 dB SPL.

MONITORING SYSTEM

The CS-210 supports two channels containing as many as 60 remote headset stations or 12 speaker stations. The operator monitors the intercom activity on the channels with locking "Monitor Select" buttons. These buttons light dimly when engaged. Either channel may be accessed (monitored) separately or both simultaneously (without the two being tied together).

For paging applications, the CS-210 provides a balanced, line-level output signal to a "Stage Announce" connector on the rear panel. The front panel button labelled "S/A" activates the output, giving the operator access to an external speaker/amp system.

SIGNALLING

Visual Signalling attracts the attention of operators who've removed their headsets or turned off their speakers. The CS-210 Call button signals all stations on the channel(s) that have been previously chosen with the Monitor Select buttons. For instance, if the Channel A Select button is engaged, pressing the

Call button signals all stations using Channel A.

When a remote station operator sends a Call signal, the Monitor Select button (on the CS-210) associated with that station's channel will light brightly, whether in the "on" or "off" position. The Visual Signal Circuit is also used to activate the optional remote page feature at other stations.

SIDETONE

Sidetone control allows the operator to vary the level of his/her own voice as heard in the headset; it also suppresses acoustic feedback when using an external speaker. The CS-210 provides a sidetone adjustment for the station operator, who need not readjust it, even when other stations join or leave the system.

PROGRAM INPUT

The CS-210 accepts a balanced, mic- or line-level program input for monitoring in the station's headset or for mixing with the intercom audio on either or both channels. The CS-210 provides a single program volume control for intercom line headset level.

POWER SUPPLY PROTECTION

The CS-210 provides a red LED to indicate a short circuit in the system, and a circuit-breaker re-set button that enables instant operation once the short is removed. The station's power supply is regulated, current-limited, and provides 30 volts DC,

continued

using a 115V or 230V AC mains supply. The CS-210 also provides audio termination for each channel.

EASY INTERCONNECTION

The CS-210 connects to the remote stations with standard two-conductor mic cable. The station's rear panel provides three 3-pin, male XLR connectors for the output of Channel A and three for Channel B (six connectors total).

ACCESSORY

Part # 820020 CS-210 Rack-ear Kit converts CS-210 to rack-mounting intercom; fits in standard 19" equipment racks.

SPECIFICATIONS

Amplifier Design: Solid state IC. Current limited and short circuit protected

MICROPHONE PREAMP

Input: Low impedance (~1k Ω) for 200 Ω nominal dynamic elements
Input Level: -55dBv nominal, -19dBv maximum before clipping*
Nominal Gain: +37dB
Limiting Compression Range: 25dB
Frequency Response: 250Hz-12kHz with a contoured response to enhance voice intelligibility

HEADPHONE AMPLIFIER

Drives any load of at least 150 Ω to full output (+20dBv)
Distortion: < 2% THD at 1kHz
Gain: (from intercom line) +37dB max
Frequency Response: 150Hz-18kHz \pm 2dB

PROGRAM AMPLIFIER

Gain, Input to Intercom Line, Max: +54dB (mic) -1dB (line) (the gain to headset output is a maximum of 37dB more than to intercom line)
Input Impedance: 3.6k balanced (mic) 300k balanced (line)
Input Level: Nominal: -75dBv (mic) -15dBv (line) max before clipping, volume full on: -52dBv (mic) +3dBv (line)*
Frequency Response: 150Hz-18kHz

POWER SUPPLY

Output Voltage: 30VDC, regulated
Output Current: 1 amp maximum, circuit breaker protected

Channel Separation: >50dB
Signal to Noise: >55dB

OPERATING CONDITIONS

Channel Monitoring: Pushbutton-selectable A, B or both
Call Circuitry: Receives a signal from remote stations whether or not channel is monitored. The Call button sends a signal to remotes only on the channel(s) being monitored
System Impedance: 200 Ω , internally terminated (jumper removable)
System Level: -15dBv nominal, 0dBv before clipping*
Call Light Sensitivity: 4V max
Call Voltage: 11V min
Stage Announce: Balanced, line level (~0dBv*) transformer-isolated 600 Ω output from mic preamp

CONNECTIONS

Headset: Two XLR 4-pin male connectors (one has mic on/off switch)
Channel Outputs: Three XLR 3-pin male connectors for each channel
S/A: XLR 3-pin male
Program Input: XLR 3-pin female
External Speaker: 1/4" mono phone jack

Power Requirements: 105-125 or 210-250 VAC, 50-60Hz, switch selectable from rear panel; 60 watts maximum

Dimensions: 3 1/2" Height x 9 11/16" Width x 11 11/16" Depth (front to back)
 89mmH x 254mmW x 305mmD

Environmental: Operating temperature range 0-50°C (32-122°F)

Specifications subject to change without notice
 *0 dBv is referenced to 0.775 volts rms.

ARCH/ENG SPECS

The main station shall be a 2-channel portable intercom station. It shall have an internal power supply with an output of 30 VDC, regulated, and a current capacity of 1 ampere, maximum. The power supply shall be short circuit protected, with an LED short indicator and circuit breaker reset button on the front panel. The LED shall glow when the circuit breaker trips in response to a short. Clearing the short shall cause the LED to go out and permit normal operation as soon as the reset button is pushed. The power supply shall operate on an AC line voltage of 105-125 or 210-250 VAC, 50-60Hz, switch-selectable from the rear panel. It shall consume no more than 60 watts, and shall provide power for up to 60 headset or 12 speaker stations. The rear panel shall have a fuse for the primary circuit. The station shall have two lighted pushbutton channel monitor switches. These will permit selection of either or both (simultaneously) the channels (A and B) for two-way communications with the main station. Stations on one channel shall remain isolated from the other channel even when the operator is communicating with both channels. The electronics shall be solid state plug-in printed circuit board type with socketed ICs, for ease in field service and replacement. The intercom microphone preamp shall be accessible from either of the two front panel headset connectors (one of which is switched). It shall shut off automatically when no headsets are plugged in. It shall accept a 200 Ω dynamic type microphone with a nominal level of -55dBv and a gain to intercom line of +37dB. The limiter circuit shall maintain a level of approximately -20 to -10dBv on the intercom line from a mic level of -55 to -30dBv. The preamp's frequency response shall be 250Hz to 12kHz, contoured for enhanced intelligibility. It shall be able to drive both intercom lines to 0dBv before

clipping. The program preamp's gain shall be switch-selectable from the rear panel for either mic level (-75dBv nominal) or line level (-15dBv nominal). The input shall be balanced (may be operated single-ended) 300k Ω in line position, 3.6k Ω in mic position. Its response shall be 150Hz-18kHz. Internal jumpers shall determine whether the program signal is fed to the intercom line(s) or fed directly to the station's headset(s). A single front panel volume control shall set the program level to either. A rear panel switch shall route the program to either or both of the intercom lines when the jumpers are set to feed program to the intercom lines. The intercom line circuits shall be of the high-impedance bridging type, with individual sidetone null controls. The intercom line terminations shall be jumper-removable, thus allowing operation as a remote station. The headset amplifier shall be short circuit protected and capable of driving any headset(s) of 150 to 2k Ω impedance (combined) to the maximum output of +20dBv before clipping. A front panel control shall adjust the overall intercom level in the station's headsets; the maximum gain from line to headset shall be +37dB. A separate front panel adjustment shall allow the operator to add the desired amount of sidetone to the station's headsets without affecting the null of the individual channels. The amplifier's frequency response shall be 150Hz-18kHz \pm 2dB, and THD at 1kHz shall be less than .2%. For paging applications, a balanced line level (~0dBv) signal from the intercom mic preamp shall be applied to a rear panel 3-pin male XLR connector when the front panel S/A switch is pressed. This switch shall also normally interrupt the mic feed to the intercom channels (defeatable by addition of an internal jumper). The integral lamps in the monitor buttons shall glow dimly to indicate monitoring of that channel, or brightly to indicate a call to/from a remote station. A call signal shall be received from a remote station regardless of whether that channel's monitor button is engaged, but the main station's call button shall send a call signal only to the channel(s) being monitored. The rear panel shall also have three XLR 3-pin male connectors for each channel and a 3-pin female XLR type for the program input. Its dimensions shall not exceed 3.50" height (excluding feet and strap), 9.66" width and 11.66" depth. It shall weigh no more than 8 lbs. It shall have all necessary controls and connectors for compatible operation with Clear-Com products, and shall be called a Clear-Com CS-210.

CS-210 BLOCK DIAGRAM

