

RTSTM

Technical Data Sheet



MODEL MCE-325 PROGRAMMABLE USER STATION

Applications and Operations

The MCE325 can be used as a portable, or fixed user station. It can work as a headset-only for private listening or with a speaker (and microphone) for open listening freeing the user from wearing a headset. Individual channel nulling adjustments prevent acoustic feedback between the speaker and the panel microphone.

The MCS325 Modular Speaker complements the MCE325 as a dedicated unit and can be attached in a side-by-side or tandem mounting arrangement. Additionally, the MCS-325 can be placed at a distance from the MCE325 to optimize listening conditions as operationally beneficial.

When conditions exist where the operator is slightly out of reach from the station, certain controls and connections can be extended. These include the headset, panel microphone, and mic ON-OFF switch. In addition, a VOX circuit can be set to turn on the microphone in lieu of a discrete mic ON-OFF switch.

The MCE325 can be used as a master station connecting to sub-stations in a master/sub-station arrangement or connecting to other MCE325 stations in an all master station system. It can also be used as a satellite station in a central matrix intercom system. A pair of MCE325s can be connected together to act as a 4-channel split talk/listen station or an 8-channel combo talk/listen station.

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Introduction

Model MCE-325 is a four-channel, *user programmable* intercom station. With its software and hardware based programming, the MCE-325 can be operationally and functionally configured in a variety of arrangements to suit individual requirements. The MCE-325 is designed to work as a *TW Intercom System* user station. It can be used in conference-line or dedicated-line environments, in 2-wire or 4-wire line mode, or a combination of both. Enhanced analog performance, along with a powerful microprocessor controlling the digital functions, make the MCE-325 a capable and versatile user station. It can be *user programmed* from a variety of built-in options to accommodate simple or complex operations.

Features

User oriented features include a microphone limiter circuit for equalizing levels, two powerful headphone amps, silent channel-select switching, and simplified operational controls. The user can talk independently or simultaneously on either two, three, or four channels. Each talk switch functions in a momentary or latching manner depending upon the length of time the button is held down.

The two volume controls set the listen level for each set of channels. In the 2-channel mode (when using a dual-phone headset) each pair of channels is fed to each headphone separately for stereo listening. For mono headset operation, the volume controls adjust the channel levels for a mono mix.

In the 4-channel mode, channels 1 and 3 are sent to Volume 1, while channels 2 and 4 are controlled by Volume 2. Since separate listen buttons are not available in 4-channel mode, a programming sequence can be called upon to set up the listens as follows:

- 1) each selected listen follows its respective talk button,
- 2) each selected listen is set permanently on, and
- 3) each selected listen is set permanently off.

Separate talk and listen circuits allow listening to one or more channels while talking to related or unrelated channels. For example, the user can continuously monitor channels 1-4, but talk only to channels 1 and 2.

To monitor a program audio source, a third volume control, which works independently of the intercom volume controls, is used to set the program audio level. An internal programming adjustment (pin jumpers) sets the program source to left, right or both headphones.

Keying signals, when used in conjunction with the talk signals, are available to control external equipment. For example, the keying signals can be used to turn on a transmitter, key a relay for speaker muting, key a paging amplifier or any other function that be externally controlled.



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4-Wire Mode

The MCE-325 can be programmed to work as a 2 channel station with connection to 4-wire duplex circuits. Each 4-wire port allows the unit to connect directly to 4-wire equipment such as a 4-wire intercom system, two-way radios, 4-wire telephone lines, satellite circuits, etc. In addition, it is feasible to independently utilize the send and receive sections of each channel as input/output ports for one way signals.

The MCE-325 can be programmed for simultaneous 2-wire and 4-wire operation on separate channels in 2-channel mode. For example, channel 1 could be set in 2-wire mode while channel 2 would be operating in 4-wire mode.

Call-Signal

A call-signal feature serves to alert other stations on the same channel(s) while not interfering with the audio signals. An ultrasonic tone is superimposed on the line by pressing the CALL switch, which triggers a flashing light on all stations. Each station can send and receive call-signals unless programmed to ignore this function.

The call-signal LED indicator light is bright red and flashes when a call-signal is received. Accordingly, the respective channel LED will also flash. When a call-signal is sent from the MCE-325, the red LED will indicate a steady state mode. To initiate a call-signal, the call button is pressed, followed by any one or combination of talk buttons.

If an audible call-signal is needed, the MCE-325 can be easily user modified to accept a buzzer on sonalert type device to work in conjunction with the call-signal light.

Talk Off Feature

The MCE-325 features a remote "talk off" capability. This is especially handy when an absent user inadvertently leaves the talk switch (es) on in a noisy environment.

An inaudible tone (24kHz) is momentarily interjected into the line at any point in the system; this signal turns off the talk gate on each station on the respective channel. Generally, this capability is assigned to a single person within the system, although multiple tone generators can be used.

This is done by a special procedure: turn off the talk buttons, press the call button three times (this will arm the 24kHz signal), and then press the channel button(s) of choice. This will transmit the 24kHz signal, thus turning off all mics on the given channel(s).

Additional Features

For the talk switches, an electronic latching circuit allows for momentary or latching action; a quick touch for latching and an extended touch for momentary. (The long life keyboard switches are mechanically momentary action.) A green LED indicator light, located adjacent to each button, turns on when the circuit (function) is engaged.

Four sidetone (nulling) controls are accessible from the front panel. These controls serve to balance the amount of microphone signal against the incoming line signal to the headphone(s).

A voice operated switch circuit (VOX), as part of the microphone preamplifier, can be programmed on when appropos. The VOX turns on the microphone signal when a sufficient acoustic level is present and turn it off accordingly. In other words, when a user speaks into the microphone, the gate will turn on; when he stops speaking, the mic will turn off.

The simple IFB function, or program interrupt, option can be expanded in scope, allowing a quantity of MCE325 stations to interrupt the single point program audio. By parallel connecting the appropriate keying signals from the other MCE325's, any of those stations can turn on the IFB switch at the optioned station. The station that keyed the switch will also put a voice signal on the line in place of the program audio signal. The result is multiple station program interrupt to one or more destinations. Each destination could use a line-powered Model 4030 Headphone Amplifier or a self-powered small headphone amp to drive the earphones or headphones. The channel ID function serves to improve operations when using multiple channels. With mixed voices on the lines,

Connections

There are two headset connectors: One for dynamic microphone stereo and mono headsets and one for carbon-mic, Plantronics, and amplified electret headsets. (The dynamic mic headset connector is a Switchcraft 6-pin female which is also compatible with 5-pin mating connectors.)

There are two separate connectors for channels 1 & 2 and 3 & 4 as well as a line loop-thru connector for channels 1 & 2.

Two program audio input connectors accept balanced circuits at line level. The Auxiliary I/O connector contains a series of inputs and outputs that can be used to enhance and extend the MCE-325's capabilities (see list in specifications).

Programming

Optional features in the MCE-325 can be programmed as required. There are three primary programming modes: 1) front panel microprocessor level, 2) internal access circuit board mounted dip switches, and 3) internal access circuit board mounted pin-jumpers. The most commonly programmed options are delegated to the front panel access microprocessor level as listed:



MODEL MCE-325 PROGRAMMABLE USER STATION

Programming

FRONT PANEL SOFTWARE BASED PROGRAMMING

Set-Up

To enter the SET-UP mode, hold CALL button for 3 seconds (while all talk buttons are in the off mode).

Instant MIC

Turns on the microphone when a TALK button is hit (when programmed for instant mic).

Latch Defeat

Sets button to momentary action only (exceptions: PANEL MIC, SPKR ON) (CALL is always on).

Button Lock

Locks button permanently on or off. Single key stroke for lock on, double key stroke for lock-off (Indication: LED-on for locked on, LED-blink for not locked, and LED-off for locked off).

Mono

Converts stereo headset feed to mono sum of inputs.

Call Disable

Turns off call-signal function - incoming and outgoing.

4-CH Listen

In 4-channel mode, each listen may be programmed to 1) follow Talk (LED-blink), 2) set permanently on (LED-on), or 3) set permanently off (LED-off)

CH ID

Modulates respective channel LED when audio signal is present.

INTERNAL HARDWARE BASED PROGRAMMING

Dip Switches

Set-up lock out - disallows software based programming changes.

ISO mode listen disable - turns off listens when MCE-325 is connected to external station ISO system.

4-wire A install - converts channel 1 (output) into 4-wire line connection mode (additionally requires 2 pin jumper sets).

4-wire B install - converts channel 2 (output) into 4-wire line connection mode (additionally requires 2 pin jumper sets).

2-channel/4-channel mode - selects between 2-channels split talk /listen or 4-channels fixed talk/programmable listen.

Talk off transmit - enables or disables 24kHz transmit capability

VOX enable - turns on voice operated switch for microphone circuit

Circuit Board Level Programming

IFB (simple) install - feeds program audio input to aux output with interrupt from microphone via talk button (works on channels 3 & 4 only) (pin jumper).

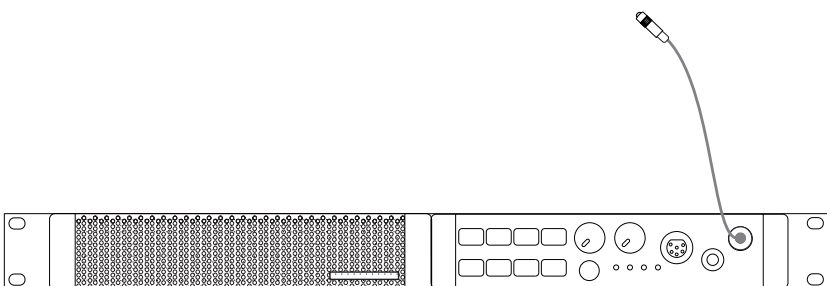
Minimum volume - prevents volume from completely turning off audio (circuit board trace cut).

Headset mic - sets input circuitry for balanced or unbalanced (standard).

Speaker-dim adjust - sets level of speaker when microphone IUs switched on (trim pot).

True sidetone - sets amount of microphone signal to headphone (sidetone available when speaker is off (trim pot).

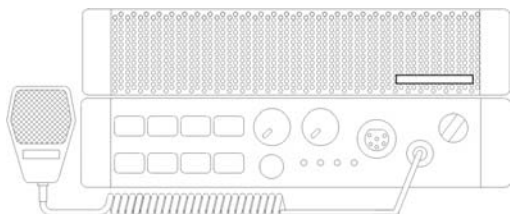
Program assign - assigns program audio to left or right headphone and/or speaker (pin jumper).



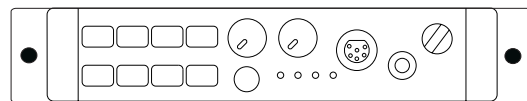
RACK MOUNT SPEAKER STATION
MCE325 ELECTRONICS
MCS325 SPEAKER
MCP1 RACK MOUNT KIT
MCP-90 SERIES MICROPHONE



RACK MOUNT HEADSET STATION
MCE325 ELECTRONICS
MCP2 RACK MOUNT KIT



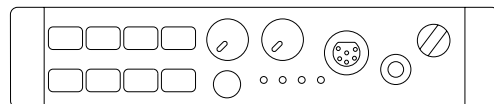
PORTABLE SPEAKER STATION
MCE325 ELECTRONICS
MCS325 SPEAKER
MCP4 TANDEM MOUNT KIT
MCP7 HANDHELD MIC
-ALT: MCP-90 SERIES MIC



CONSOLE MOUNT HEADSET STATION
MCE325 ELECTRONICS
MCP3 CONSOLE MOUNT KIT



MODEL MCS-325 MODULAR SPEAKER



DESKTOP HEADSET STATION
MCE325 ELECTRONICS
MCP8 SIDE CHANNELS

RTS™

MODEL MCE-325 PROGRAMMABLE USER STATION

MCE-325 Specifications

INTERCONNECTION

Front Panel Connections

Dynamic Microphone Headset	6-pin female XL type connector (accepts 6-pin or 5-pin mating connector)
Carbon Microphone Headset	1/4" TRS jack

Rear Panel Connections

Intercom Line CH 1-2	3-pin femal XL type connector Alt.: 4-wire A output*
Loop Thru CH 1-2	3-pin male XL type connector
Intercom Line CH 3-4	3-pin female XL type connector Alt.: 4 wire B output Alt.: Aux 1-2 In/out
Speaker Output	1/4" TRS Jack
Program Input 1	1/4" TRS Jack
Program Input 2	1/4" TRS Jack
Auxiliary	25-pin D female connector
AC line code	European or American type plug
Fuse Holder	European or American size fuse

Standard Options on on Auxiliary 25-pin D Connector

- 1) Unswitched mic output
- 2) Iso connection to VCP6A/VCP12A/VCP12B
- 3) Mic on-off external switch
- 4) Remote headset
- 5) Remote panel microphone
- 6) DC power input +12 or +17 vdc
- 7) Common / ground circuit
- 8) 4-wire inputs A & B
- 9) External speaker mute
- 10) Key outputs

ELECTRICAL AND MECHANICAL

Headphone Amplifier

Maximum voltage gain	30dB
Freq. Response	100Hz to 8,000Hz, ± 3 dB
Headphone impedance	50 to 600 ohms
Output power / per amplifier	150 milliwatts / 50 ohms
Output voltage level	8 volts peak - to - peak

Microphone Preamplifier

Maximum voltage gain	54 dB
Freq. Response	100 Hz to 8,000 Hz, ± 3 dB
Input Impedance	1,000 ohms, balanced
Limiter Range	30dB

Program Input

Maximum input level	+20 dBu
Nominal input level	-10 to + 8dBu
Freq. response	100Hz to 12kHz, ± 3 dB

Speaker Amplifier

Maximum voltage gain	30dB
Freq. Response	100Hz to 8,000Hz, ± 3 dB
Speaker Impedance	8 to 16 ohms
Output power / per amplifier	5 watts / 8 ohms
Output voltage level	16 volts peak to peak

Current Source

Transfer Ratio	3.3 milliamps / volt
Output	± 5 milliamps into 200 ohms ± 1 volt peak (limiter threshold)

General

Input AC voltage*	115 VAC / 230 VAC
Input power	20 VA, max
Input DC voltage	12 to 35 volts DC
DC Current	200 to 250 milliamps, quiescent 575 milliamps, max

Impedance across line	10,000 ohms typical
Noise contribution to 200 ohm line	-75 dBu
Call light freq.	20 kHz, crystal controlled
Talk-off freq.	24 kHz, crystal controlled
Talk switch action	Momentary / alternate action; momentary only programmable

Audible alert option

Dimensions	1.72" H x 8.19" W x 8" D, 4.5 lbs.
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Metal / Finish	43.6 H x 208.02 W x 203.2 D, 1.93 kg
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	Thermo-plastic front panel, aluminum case, light gray finish.
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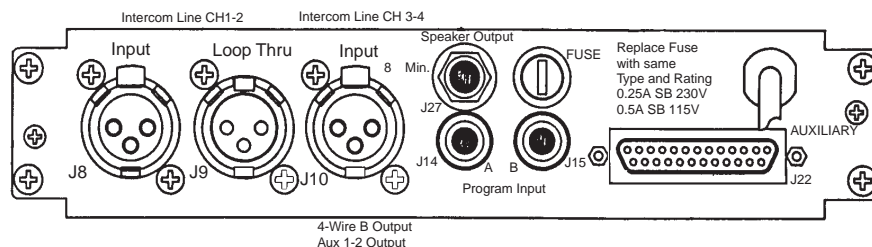
* The MCE-325 is normally equipped for 115 VAC; 230 VAC must be specified when ordering.

Ordering Information

Main components for intercom station
MCE325 Programmable User Station
MCS325 Modular Speaker

Optional mounting components and accessories

MCP1	Rack Mount Kit - includes 2 short rack ears, 2 link bars and fasteners
MCP2	Rack Mount Kit - includes 1 short rack ear, 1 long rack ear and fasteners
MCP3	Console Mount Kit - includes bezel frame, 2 short rack ears and fasteners
MCP4	Tandem Mount Kit - includes stack brackets and fasteners
MCP-90	Panel Mount Microphone 12", 20"
MCP7	Hand-Held Microphone w/ 6-pin connector
MCP8	Side Channels (pair)



Model MCE325 Programmable User Station - Rear Panel View

Warranty

Products are warranted by Telex Communications, Inc. to be free from defects in materials and workmanship for a period of three years from the date of sale.

The sole obligation of Telex during the warranty period is to provide, without charge, parts and labor necessary to remedy covered defects appearing in products returned prepaid to Telex. This warranty does not cover any defect, malfunction or failure caused beyond the control of Telex, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the manual, defective or improper associated equipment, attempts at modification and repair not authorized by Telex, and shipping damage.

To obtain warranty service, follow the procedures entitled "Procedure for Returns" and "Shipping to Manufacturer for Repair or Adjustment".

This warranty is the sole and exclusive express warranty given with respect to RTS products. It is the responsibility of the user to determine before purchase that this product is suitable for the user's intended purpose.

ANY AND ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS EXPRESS LIMITED WARRANTY.

NEITHER TELEX NOR THE DEALER WHO SELLS TELEX PRODUCTS IS LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.