

Overview

The Compact 3200 Series Administrative Communications System is a microprocessorbased, single-master intercom and sound distribution controller. It is available in rackmount and console (table-top) models. The Compact 3200 controls remote speaker stations individually for two-way communication, page announcements, or audio program distribution; and collectively for emergency and all call announcements in multiple-room buildings.

System operation is dictated by the function priority order listed below:

1. Emergency paging
2. Emergency tone distribution
3. Time tone distribution
4. All call
5. Intercom
6. Program

Higher priority functions automatically interrupt lower priority functions. Lower priority functions automatically resume when higher priority functions have ended. For example, selective intercom communication is interrupted by an all call page, which is interrupted by an emergency page.

Using the built-in front panel microphone or the optional console handset, the console operator can hold a two-way conversation with any properly equipped remote station connected to the system. The front panel INTERCOM—PUSH TO TALK button or the handset's voice-activated switch controls audio direction.

Standard Features

- Microprocessor controlled
- 12A3200 and 12A3212 UL listed
- One-touch emergency paging
- All call and selective paging
- Built-in paging microphone
- 15-Watt intercom amplifier
- 60/125/250-Watt program amplifier
- Manual time and emergency tone distribution
- Built-in tone generator with seven tone types
- Audible and visible call-in annunciation
- Program output monitoring with audible and visible level indicators
- Simultaneous intercom and distribution of background music
- Color-coded control panel
- Supervisory (privacy) signal
- +24Vdc battery backup operation capability
- Optional plug-in telephone interface

Compact 3200



Application

The console can monitor any remote station that has two-way audio capability and is not in privacy mode. An intermittent privacy tone sounds at the remote station speaker(s) during console monitoring of that station.

One-touch emergency paging is accomplished by pressing the EMERGENCY—PUSH TO TALK button, which automatically interrupts any audio program or intercom communication in progress. A tone is automatically sent to all speakers, after which an emergency announcement can be sent at a preset volume level.

All call and selective paging announcements can be sent to all or selected remote stations. These announcements can be made using the built-in front panel microphone, the optional desk microphone, or the optional console handset. All call pages can also be made using the optional remote all call microphone.

A built-in, solid-state, 15-watt amplifier module and preset incoming and outgoing speaker level controls are provided for intercom power. A power supply/power amplifier module provides DC power for the entire system. The 25-volt line output is standard, but is selectable to 45-ohm output on models 12A3200 and 12C3200. This module also provides power to the system's 24Vdc external connections for associated equipment. The module has multiple circuit protection, including power supply and output amplifier fusing to protect against major failures, thermal and short circuit protection, and current limiting.

Console Model 12A3200 includes a 60-watt program amplifier. The Console model 12A3212 comes equipped with an external 125-watt amplifier (mounted in an included external cabinet) in place of the 60-watt amplifier.

Rack model 12C3200 includes a 60-watt program amplifier. Rack Model 12C3212 comes equipped with a 125-watt amplifier in place of the 60-watt amplifier, and Model 12C3225 is equipped with a 250-watt program amplifier in place of the 60-watt amplifier.

Connections are provided for 24Vdc input from an external backup battery in case of primary AC power failure.

A diagnostic routine can be initiated at any time to check system integrity. A built-in integrated monitor checks the microprocessor during operation and automatically resets it in the event of power loss or other failure.

The PROGRAM SELECTION—TONE button can be used to manually send time tones to remote stations. Pressing the separate, locking EMERGENCY—TONE button sends an emergency tone to all remote stations until the pushbutton is released. The tone automatically interrupts any audio program or intercom communication in progress. Connections are also provided to trigger the emergency tone by the closure of external contacts.

The built-in tone generator provides seven distinct tones:

1. Emergency paging
2. Emergency tone
3. Time signaling tone
4. All call paging
5. Intercom
6. Privacy (remote station monitoring)
7. Door tone (external contact)

The tone volume levels are adjusted at the console.

The tabletop unit uses one, two, or three three-position switchbanks for capacities of 25, 50, or 75 remote stations. Rack units have a capacity of up to 150 stations. All switches in a switchbank do not have to be used if not needed. Each switchbank is equipped with 25 three-position (INTERCOM, OFF, PROGRAM) switches. Each switch controls one speaker. The LED below each switch lights and the built-in tone generator sounds a tone when a remote station calls in.

The last two switches on the last switchbank can be configured to isolate these locations from any communication while the switches are off. The Model 438-672 Time Bus Relay Kit can be installed to automatically feed emergency and time tone signals to these stations, while still isolating them from all call and background music distribution.

A speaker with its own volume control and an LED bar-graph output level indicator are provided for monitoring audio program output. Distribution of background music or other audio program material does not interfere with simultaneous intercom use.

A color-coded control panel contains all controls and instructions on a single front panel for easy operation. LEDs indicate intercom mode and emergency mode use. A separate adjustment is provided for audio program output level. Program mode pushbuttons (ALL, SELECT) are provided for selecting individual remote stations or all remote stations to receive program material. The PROGRAM SELECTION pushbuttons are TONE, PANEL MIC, MIC1, TAPE/TUNER, AUX 1, and AUX 2.

An optional plug-in telephone interface allows paging and intercom functions to be performed from any standard pushbutton telephone connected to the interface. These functions include emergency page distribution, emergency tone distribution, time tone distribution, all call paging, selective paging (through the system operator), telephone-to-console intercom, and telephone-to-classroom intercom (through the system operator). A DTMF telephone connected to the PHONE 1 inputs can also monitor program channel audio through the telephone handset or the speaker of a speaker phone.

System Options

Model 110-2926 DTMF Telephone Interface PCB

This plug-in board provides paging and intercom capability from any standard DTMF telephone connected to it. These capabilities include emergency paging, emergency tone distribution, time tone distribution, all call paging, selective paging (through the system operator), telephone-to-console intercom, and telephone-to-classroom intercom (through the system operator).

Model 110-2929 Voice Call-In PCB

This board allows voice annunciation of call-in from properly equipped remote stations. Model 438-671 Output Mode Relay Kit These relays trigger external devices when the emergency, all call, or intercom call-in functions are selected.

Model 7A620 Handset

This is a telephone-style handset that can be used in place of the front panel microphone for page announcements and for privacy during intercom conversations. It includes a plug-in handset interface PCB.

Model 110-2925 Interface Panel

This panel supplies screw terminal connections for:

- Model 110-2926 DTMF Telephone Interface PCB
- Model 110-2929 Voice Call-In PCB
- Model 438-671 Output Mode Relay Kit
- Model 7A620 Handset

This panel is required when any of the options listed above are installed. Model 438-672 Time Bus Relay Kit This kit automatically

feeds emergency and time tone signals to the last two stations of the last switchbank when those stations have been isolated from all call and background music distribution. The two isolated stations can be used to control remote stations, such as outdoor speakers, that do not need to receive all call pages or background music.

Model 15A266B Multitone Generator

This generator supplies additional tone types, including chime. It attaches to the rear panel of the console.

Model 7A625 External Page Microphone

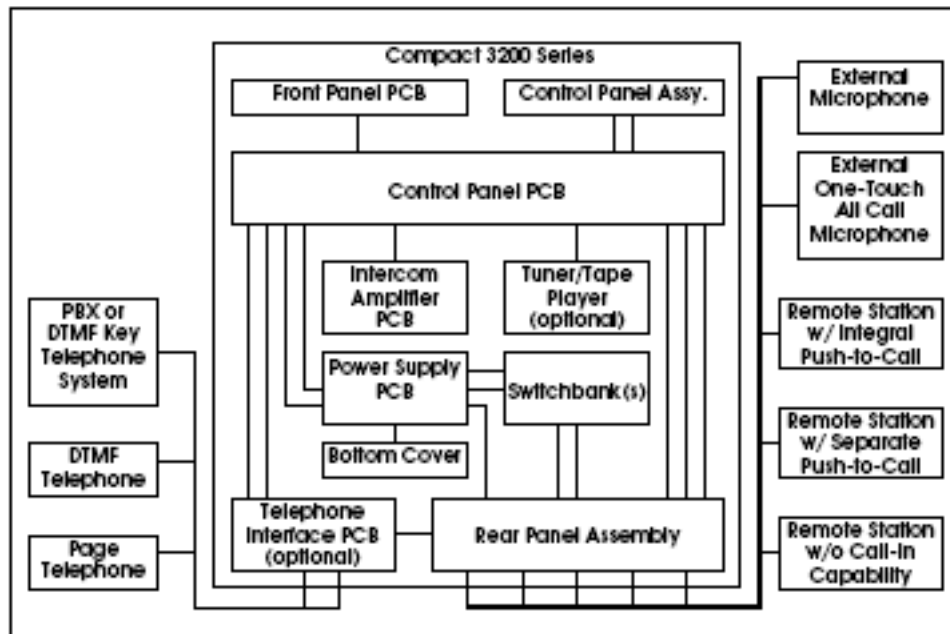
An additional microphone can be connected to the MIC 1 inputs for all call and selective paging. A remote external microphone can be connected to the MIC 2 inputs to allow one-touch all call paging. Pressing the microphone's PUSH TO TALK button automatically initiates the all call tone.

Model 10A186 AM-FM Tuner/Cassette Tape Player

This is a single, front panel mounted unit with a sensitive AM-FM tuner and digital readout, and an auto reverse tape player for standard size cassettes.

Functional Description

1. Facility for function priority control which allows higher level



System Block Diagram

Available System Models

	Number of Stations	Console	Rack
60-Watt Program Amplifier	25 stations	12A3200-25	12C3200-25
	50 stations	12A3200-50	12C3200-50
	75 stations	12A3200-75	
125-Watt Program Amplifier	25 stations	12A3212-25*	12C3212-25
	50 stations	12A3212-50*	12C3212-50
	75 stations	12A3212-75*	12C3212-75
	100 stations		12C3212-100
	125 stations		12C3212-125
	150 stations		12C3212-150
250-Watt Program Amplifier	50 stations		12C3225-50
	75 stations		12C3225-75
	100 stations		12C3225-100
	125 stations		12C3225-125
	150 stations		12C3225-150

*12A32-xx models have 125W amps mounted in an external cabinet (included when ordering system)

functions to automatically interrupt lower level functions. The system shall automatically restore the lower level function when higher level functions are ended.

- Facility for a diagnostic routine that can be initiated at any time during operation to check system integrity.
- Facility for distribution of a paging announcement to all remote stations, regardless of switchbank switch position, using the control panel microphone (all call function).
- Facility for single-switch distribution of an emergency page or announcement to all remote stations, regardless of switchbank switch position, using the control panel microphone (emergency function).
- Provides a choice of two separate auxiliary inputs and preamplifiers for two optional external page and all call microphones.
- Facility for two-way voice (intercom) communication with any selected, properly equipped remote station.
- Facility for annunciation of remote station call-ins by individual visual indicator and common call-in tone.
- Facility for separate service level controls for all five program inputs (to balance program sources).
- Facility for monitoring and pre-monitoring all programs both visibly by an LED bar graph and audibly through the panel speaker.
- Facility for generation and distribution of an intermittent supervisory tone to a remote station being monitored.
- Facility for privacy function at a remote station. The privacy function allows all signals to reach the remote station but prevents monitoring when the privacy switch at the station is activated.
- Facility for connecting 24Vdc battery backup power for operation during primary AC power failure.

Functions Requiring Additional Equipment

- Facility for receiving AM or FM broadcasts and/or cassette tape programs for distribution to any or all speakers through the addi-

tion of a Model 10A186 AM-FM Tuner/Cassette Tape Player.

- Facility for access to emergency paging, emergency tone distribution, time tone distribution, all call paging, selective paging (through the system operator), telephone-to-console intercom, and telephone-to-classroom intercom (through the system operator) using one or more standard DTMF telephones. Requires optional the Model 110-2926 DTMF Telephone Interface Board and Model 110-2925 Interface Panel.
- Facility for voice call-in to allow voice annunciation of call-ins from properly equipped remote stations. Requires the Model 110-2929 Voice Call-In Board and Model 110-2925 Interface Panel.
- Facility for triggering external devices by relays when the emergency, all call, and/or intercom call-in functions are selected. Requires the optional Model 438-671 Output Mode Relay Kit and Model 110-2925 Interface Panel.
- Facility for supplying additional tones, including chime, using an external tone generator that fastens to the rear of the console. Requires the Model 15A266B Multitone Generator.

Additional Equipment

GE Model 15A266B Multitone Generator

The Multitone Generator is a solid-state tone generator capable of

operating from either 12Vdc or 24Vdc. The generator can produce seven separate and distinct signals: wail, warble, hi-lo, alarm, repeating chimes, single-stroke chime, and tone. The unit is equipped with a pitch control that affects the chimes and the tone function, and a volume control that affects all functions. Priority and tone hierarchy may be established through an external activation switch network.

Standard Features

- 12 or 24 Volt operation
- Seven functions
- 1-octave pitch control for repeating chimes, single chime, and tone
- Volume control
- Single switch closure to select each function

Engineering Specification for Model 15A266B Multitone Generator
The generator shall be completely solid state and shall operate on either 12Vdc or 24Vdc. The generator shall be capable of producing seven separate and distinct signals: wail, warble, hi-lo, alarm, repeating chimes, single-stroke, and tone. The unit shall be equipped with a pitch control that affects the chimes and the tone function, and a volume control that affects all functions. All terminations shall be to a feed-through, screw-type terminal block. Priority and tone hierarchy may be established through an external activation switch network.

Telephone Handsets

The Telephone Handset shall be the GE Model 7A950 or an approved equal. It shall be suitable for use in telephone paging and intercom systems, and with sound system consoles to provide telephonic intercom. The handset shall be molded, high impact, black plastic, equipped with a heavy duty, black coil cord 13 inches (33 cm) long when retracted and at least 5 feet (1.5 m) long when extended. The cord shall have four conductors. The dynamic receiver shall have approximately 50 Ohms impedance, and the carbon transmitter shall have approximately 200 Ohms. The handset with coil cord shall weigh 1 pound (448 g).

Model 7A955

The Telephone Handset shall be the GE Model 7A955 or an approved equal. It shall be suitable for intercom operation in school sound systems. The handset shall be molded, high impact, black plastic, equipped with a heavy duty, black coil cord 13 in (33 cm) long when retracted and at least 5 feet (1.5 m) long when extended. The cord shall have four conductors. The dynamic receiver shall have approximately 50 Ohms impedance, and the dynamic transmitter shall have approximately 50 Ohms. The handset with coil cord shall weigh 1 pound (448 g).

Model 7A945A

The Telephone Station shall be the GE Model 7A945A or an approved equal. It shall be suitable for use in telephone-paging intercom systems, and with sound system consoles. The station shall

consist of a high impact, black plastic handset, a black coil cord, a hookswitch, and a two-gang stainless steel wallplate 4-1/2 in (11 cm) high and 4-1/2 in (11 cm) wide. The handset shall incorporate a dynamic receiver and a carbon transmitter, and shall operate on 24Vdc. The station shall mount on a standard two-gang electrical wall box with a minimum depth of 1-1/2 in (3.8 cm). All electrical connections shall be to screw terminals.

Model 9A1520A

The Wallplate and Hookswitch Assembly shall be the GE Model 9A1520A or an approved equal. It shall be suitable for telephone-paging intercom systems. The assembly shall incorporate all necessary switching facilities and terminal strip connections for use with a carbon handset. The assembly shall consist of a stainless steel switchplate 4-1/2 in (11 cm) wide, a two-pole, double-throw switch, and a chrome plated hanger. It shall mount on a standard two-gang electrical wall box with a minimum depth of 1-1/2 in (3.8 cm).

Model 9A1525

The Wallplate and Hookswitch Assembly shall be the GE Model 9A1525 or an approved equal. It shall be suitable for use in telephone-paging intercom systems. The assembly shall incorporate all necessary switching facilities and terminal strip connections for use with a [carbon] [dynamic] handset. The assembly shall consist of a stainless steel plate 8-1/4 in (21 cm) high, 4-1/2 in (11 cm) wide, a four-pole, double-throw switch, and a chrome plated hanger. It shall mount on a standard, four-gang electrical box mounted vertically. The minimum mounting depth required shall be 1-1/2 in (3.8 cm).

Model 7A965

The Desk Base Assembly shall be the GE Model 7A965 or an approved equal. It shall be suitable for telephone-paging intercom systems. The assembly shall incorporate the necessary switching facilities and terminal strip connections for use with a carbon handset. The assembly shall consist of a steel base assembly with a high impact beige plastic case. The cradle switch shall consist of one Form C contact, one Form A contact, and one Form B contact. The assembly shall weigh approximately 4 pounds (1.8 kg)

Model 9A685A

The Wallplate and Hookswitch Assembly shall be the GE Model 9A685A or an approved equal. It shall be suitable for use in telephone-paging intercom systems. The assembly shall incorporate all necessary switching facilities and terminal strips for use with a carbon handset. The assembly shall consist of a stainless steel switchplate 4-1/2 in (11 cm) high, 2-3/4 in (7 cm) wide, and 1-3/4 in (4.5 cm) deep, a lever switch, and a black cast aluminum hanger. It shall fit any standard, vertically mounted, single-gang electrical box with a minimum depth of 2-3/4 in (7 cm).

PCS499 Call-In Switch with Privacy

The GE PCS499 Call-In Switch with Privacy is designed for use with a remote speaker in intercom-equipped sound systems. A three-position (Privacy, Normal, Call) rocker switch is mounted on a brushed

stainless-steel single-gang plate. The rocker switch provides a momentary contact in the call position and a maintaining contact in the privacy position. The privacy position provides absolute speaker privacy, preventing the calling station from monitoring the speaker location while allowing the location to be called. The switch has nonremovable, hot-stamped wording. Screw terminals are provided on the rear for connections. The switch assembly mounts on a standard single-gang electrical box.

Standard Features

- Privacy or normal speaker operation selection
- Momentary contact for call-in
- Maintained contact for privacy feature
- Stainless-steel wallplate
- Screw terminal connections

Engineers Specification for Call-In Switch with Privacy

1. The call-in switch shall be the GE Model PCS499 Call-In Switch with Privacy.
2. The call-in switch shall use one, three-position rocker switch secured to a brushed stainless-steel wallplate for mounting to a standard or flush-mounted single-gang electrical box.
3. The switch shall provide for selecting privacy or normal operation in intercom-type sound systems. The switch shall have spring return closure in the CALL position for placing calls from a speaker location.
4. The switch used shall provide momentary contact in the CALL position, maintained contact in the PVCY position.
5. One button shall be capable of both normal and emergency call-in. A normal call-in becomes an emergency call-in when the CALL position is held and switch contact maintained for 3 seconds.
6. External connections shall be to screw terminals.
7. The switch shall bear PVCY and CALL designations in nonremovable, hot-stamped lettering.
8. The dimensions of the call-in switch shall not exceed 4-1/2 in (11.4 cm) high, 2-3/4 in (7 cm) wide, and 1-3/16 in (4.6 cm) deep.

9A1765 Call-In Switch

The GE Model 9A1765 Call-In Switch is designed for use with a remote speaker in a sound system equipped for intercom. When the PUSH TO CALL pushbutton is pressed, it provides a closure for plac-

ing a call from the speaker location.

Standard Features

- Single switch operation
- Designated switch function
- Stainless steel wall plate
- Screw terminal connections
- Precious metal contacts

Engineers' Specification for 9A1765 Call-In Switch

The call-in switch shall be the GE Model 9A1765 Call-In Switch. It shall consist of a single pushbutton secured to a stainless steel wall plate for mounting to a standard flush-mounted, single-gang electrical box. The button shall be a momentary contact type that provides a single closure when pressed. The wall plate shall bear the designation PUSH TO CALL. External connections shall be made to screw terminals. The dimensions of the call-in switch shall not exceed 4-1/2 in (11.4 cm) high, 2-3/4 in (7 cm) wide, and 7/8 in (2.2 cm) deep. The net weight shall not exceed 2 oz (56 g).

Specifications

12A/C3200, 12A/C3212, 12C3225 Compact 3200 Series Administrative Communications System

Rated Output Program:	60W (rms), 25V or 45 Ohms output (only on models 12A/C3200) 125W (rms), 25V output (external on console models 12A/C3212) 250W (rms), 25V output (standard on rack model 12C3225)
Intercom:	15W (rms), 25V or 45 Ohms output
Power Required	
60W Models:	120Vac, 60Hz, 2.0A at rated output +24Vdc, 5.5A (battery backup for AC) at rated output
125W Models:	120Vac, 60Hz, 5.0A +24Vdc, 17A (battery backup for AC) at rated output
250W Models:	120Vac, 60Hz; 7.0A at rated output +24Vdc at 25.5A (battery backup for AC) at rated output
Auxiliary Power Output	+24Vdc at 0.25A
Inputs	Two low impedance: microphone Three high impedance: tuner/tape, auxiliary 1, auxiliary 2
Input Sensitivity	
Low Impedance:	300 μ V nominal, balanced
High Impedance:	300 μ V nominal, greater than 10kOhms
Frequency Response	Program: 50Hz to 15kHz Intercom: Voice filtered for maximum intelligibility
Filters	RF filter to suppress interference on intercom listen channel
Distortion	Program: Less than 2% at full load Intercom: Less than 2% at full load
Noise Levels	Microphone -60dB; Auxiliary -60dB; Intercom -60dB
Output Regulation	Program: Better than 2dB from no load to full load Intercom: Better than 2dB from no load to full load
Indicators	Five-segment LED bar graph for program power output level Power-on LED INTERCOM mode LED EMERGENCY mode LED
Fuses	AC Line — 2A (60W amplifier), 3A (125W amplifier) slow-blow, 5A (250W amplifier) slow-blow DC Supply — 6.25A slow-blow
Terminations	CHAMP connectors, screw terminal strips, and RCA phono jacks
Dimensions	Console 14-1/2 in (36.8 cm) high x 20-1/2 in (52.1 cm) wide x 16-3/8 in (41.6 cm) deep; Rack 53 in (134.6 cm) high x 21 in (53.3 cm) wide x 17-1/2 in (44.5 cm) deep External 125W amp cabinet for model 12A3212-xx: 6 in (15.2 cm) high x 18-1/2 in (47 cm) wide x 8 in (20.3 cm) deep

Net Weight	Console 50 to 55 lb (22.7 kg to 25 kg) Rack 140 to 150 lb (63.6 kg to 68.2 kg) External 125W amp cabinet for model 12A3212-xx: 26 lb (57.2 kg)
Finish	Charcoal-colored, baked enamel with gray trim
Tones	Emergency paging, emergency tone, time tone, door tone, all call paging, intercom, privacy tone
Controls	Five input selector locking pushbuttons One tone input selector pushbutton Two program selector locking pushbuttons One EMERGENCY—PUSH TO TALK pushbutton One EMERGENCY—TONE locking pushbutton One INTERCOM—PUSH TO TALK pushbutton Three-position room selector switches Two level controls, listen and program
Capacity	25, 50, or 75 stations for consoles; up to 150 stations for rack units 60W or 125W program amplifier for console models, up to 250W for rack models

15A266B Multitone Generator

Rated Output	1Vrms nominal
Output Load	10k Ohm or greater
Power Required	12 or 24Vdc selectable, 30mA
Controls	Output level control and pitch control
Dimensions	5-1/2 in (14 cm) high, 4-1/4 in (10.8 cm) wide and 1-1/2 in (3.8 cm) deep
Finish	Charcoal-colored, baked enamel
Terminations	Feed-through, screw-type terminal block

PCS499 Call-In Switch with Privacy

Switch Type	Three-position rocker. Locking privacy position, momentary (spring-action return) call position, and normal position
Designations	PVCY and CALL
Terminations	Screw terminals
Net Weight	2-1/2 oz (71 g)
Dimensions	4-1/2 in (11.4 cm) high by 2-3/4 in (7 cm) wide and 1- 3/16 in (4.6 cm) deep
Finish	Brushed stainless-steel
Mounting	Flush to standard single-gang backbox more than 2 in (5.1 cm) deep

9A1765 Call-In Switch

Switch Type	SPDT momentary pushbutton (spring-action return)
Designation	PUSH TO CALL
Dimensions	4-1/2 in (11.4 cm) high, 2-3/4 in (7 cm) wide, and 7/8 in (2.2 cm) deep
Terminations	Screw terminals
Net Weight	2 oz (56 grams)
Finish	Satin-finished stainless steel
Mounting	Standard flush-mounted single-gang backbox more than 2 in (5.1 cm) deep

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Ordering Information

Model	Description
12A/C3200, 12A/C3212, 12C3225 Compact 3200 Series Administrative Communications System and Associated Equipment	
PCS822	Remote station telephone handset (black) for 25V system with hookswitch and single-gang plate
PCS821	Remote station telephone handset (black) with rocker call-in switch and two-gang plate
PCS820	Remote station telephone handset (black, single-gang)
PCS819	Remote station telephone handset (black, two-gang)
PCS499	Call-in switch, privacy, single-gang
9A1765	Call-in switch, single-gang
110-2925	Interface Panel
438-672	Time Bus Relay Kit
110-2926	DTMF Telephone Interface PCB
110-2929	Voice Call-in PCB
438-671	Output Mode Relay Kit
10A186	AM/FM Tuner / Cassette Tape Player
7A625	External Page Microphone
7A620	Handset
9A1890	Voice Call-in Switch
24A715 / 24A715M	Master Time / Program Clock
15A266B	Multitone Generator
17A437	Power Supply for Multitone Generator

