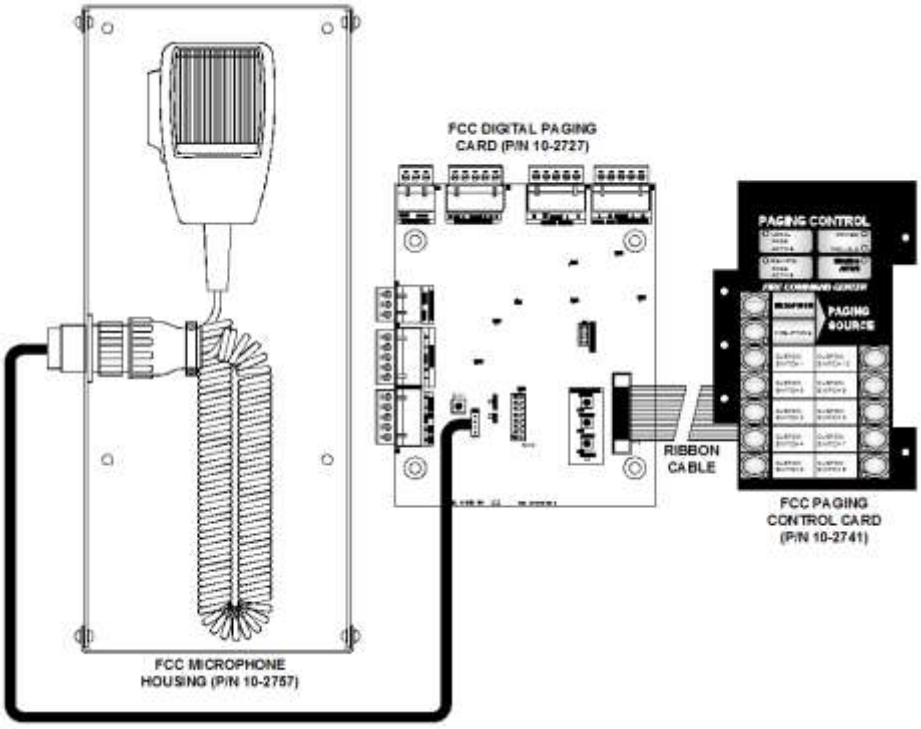
1. PURPOSE

The purpose of this guide is to provide information concerning the general operation and proper application of Fike's Integrated Emergency Communication System (ECS). It briefly outlines the basic operating principles and design options that you will need to consider when quoting or designing a Fike voice system. The information provided in this application guide is very high level and does not purport to show all components necessary to form a complete voice system. Refer to the product documentation supplied with each component or contact Fike Product Support for further details or assistance.

2. SYSTEM COMPONENTS

Fike's emergency communication system is a combination in-building Fire Emergency Voice/Alarm Communication System (one-way and two-way) and in-building Mass Notification System designed to meet the requirements of NFPA 72, National Fire Alarm Code. The components that make up the system are designed so that they can be seamlessly integrated into the CyberCat® fire alarm system architecture. A brief description of the components that form the back-bone of Fike's ECS subsystem is provided below.

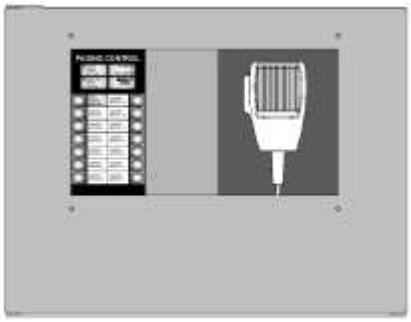
FCC Digital Paging Assembly (P/N 10-2751) is the primary component of the audio subsystem and is the only component required to be installed in the fire command center enclosure. The assembly includes the FCC Digital Paging Card (P/N 10-2727), microphone housing (P/N 10-2757) and FCC paging control card (P/N 10-2741) that provides ten (10) configurable switches for manual operation of the ECS system.



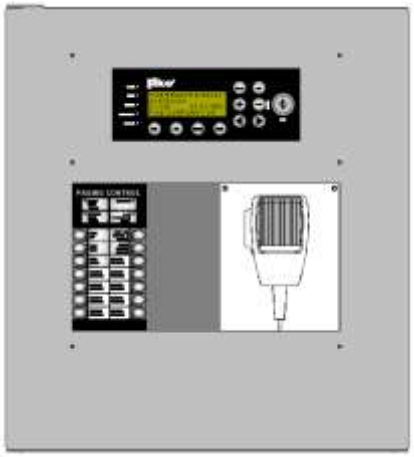
Digital Paging Assembly

The assembly connects to the CyberCat panel's peripheral bus for command and control interface and is the source of the system's network audio riser which consists of a single cable run connecting all local operating consoles and amplifiers together in a Class A configuration. All live audio messages (page) are distributed over the audio riser to the system amplifiers. The assembly also provides connection points for the system's FCC firefighter's telephone handset and is the source of the system's fire-fighter's phone riser.

Local Operating Console (P/N 10-2800 and 10-2801 w/ RDU) allows paging and ECS control capabilities to be initiated from a location other than the fire command center. Each console includes a LOC Digital Paging Card (P/N 10-2816), microphone assembly (P/N 10-2813), and LOC paging control card (P/N 10-2798) that provides thirteen (13) configurable switches for manual operation of the ECS system. The LOC connects to the CyberCat panel's peripheral bus for command and control interface and to the FCC Digital Paging Assembly's network audio riser for transmission of live audio (page).

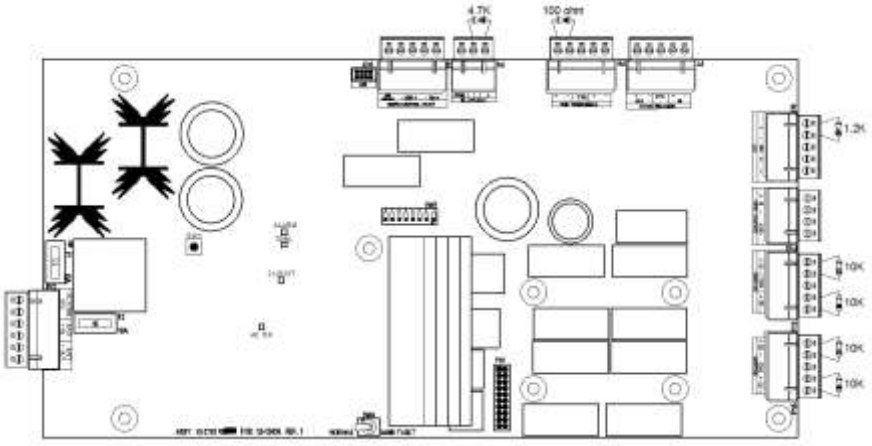


Local Operating Console Local



Operating Console with RDU

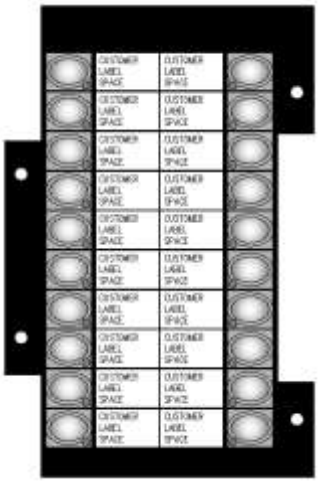
Distributed Amplifier (P/N 10-2773) is designed to store and amplify the system's prerecorded audio messages (maximum 16 messages) during playback. The amplifier is designed to feed a single audio zone (50 watts max.) and provides a single integral 24VDC notification appliance circuit and four supervised Class A or B speaker circuits, configurable for 25 or 70 Vrms output. Each amplifier connects to the CyberCat panel's peripheral bus for command and control interface and to the FCC Digital Paging Assembly's network audio riser for transmission of live audio (page).



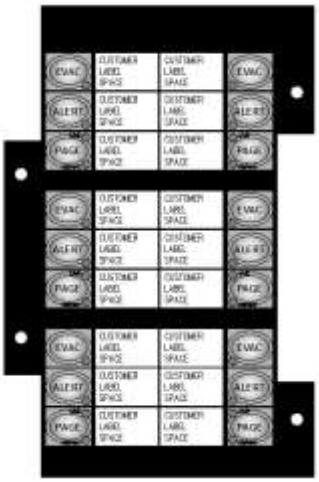
Amplifier Card

Amplifiers can be mounted in the Fire Command Center enclosure with the CyberCat panel or they can be remote mounted in any of the three available remote audio enclosures: 1 amp (P/N 10-2797); 3 amp (P/N 10-2754); and 5 amp (P/N 10-2755).

CONTROL CARDS provide push button switches that can be programmed to facilitate manual control of the in-building Fire Emergency Voice/Alarm Communication System (one-way) and in-building Mass Notification System. The control cards can be added in any combination to suit specific project requirements. The Input/Output card (P/N 10-2659) provides twenty (20) configurable switches for manual operation of the ECS system. The six zone audio card (P/N 10-2661) provides six (6) groups of three (3) switches that are hard coded to provide EVAC, ALERT, and Page operation for any audio zone(s). Cards are designed to be mounted in the Fire Command Center enclosure and Remote Display Unit enclosure and connect to the CyberCat panel's peripheral bus for command and control interface.

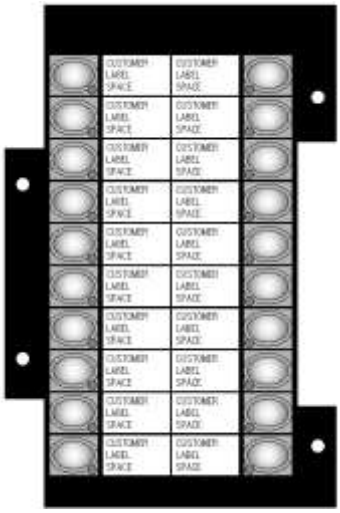


Input/Output Card



Audio Card

FIRE-PHONE CARDS provide push button switches that can be programmed to facilitate manual control of the systems two-way fire fighter's phone system. The fire-phone card (P/N 10-2728) provides twenty (20) configurable switches that can be used by the system operator to selectively connect fire-phones to the phone system. The fire-phone card provides the sole source of the systems fire-phone addressable loop (Series 500), which allows connection of up to ninety-nine (99) fire-phone control modules. The fire-phone card connects to the CyberCat panel's peripheral bus for command and control interface. The supplemental fire-phone card (P/N 10-2730) provides an addition twenty (20) configurable switches that operate exactly like the fire-phone card switches. Up to four (4) supplemental cards can be connected directly to the fire-phone card via a ribbon cable connection, expanding the fire-phone control switch quantity to ninety-nine (99). The last unused control switch operates as a local audible silence for the primary fire-phone card audible by default.

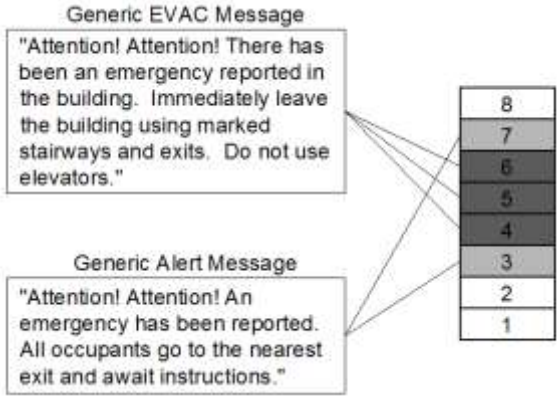


Fire-phone Card

3. GENERAL OPERATION

The design of Fike's Emergency Communication System (ECS) allows both the Fire Emergency Voice/Alarm Communication System (EVACS) and the in-building Mass Notification System (MNS) to be integrated into a common operating system; however, the general operation of the two systems is independent of each other for the most part, with only a few exceptions. Both sub-systems can be activated automatically and manually as described below.

AUTOMATIC OPERATION of the Emergency Communication System (EVACS and MNS) is based on the CyberCat panel's standard Zone and State relationship. During system configuration, each of the panel's 254 zones can be configured to automatically initiate EVAC or Alert signals in other zones in response to the zone of incidence entering into the Alarm State (zone mapping); thus allowing selective evacuation and alert notification of building occupants in response to the fire event.



EVAC/ALERT Mapping Example

Each amplifier must be programmed to activate its speaker circuits (4 total) based on the operational state of a specific zone (1-253). In addition, each operational state can be assigned to play a different canned audio message (16 available) in response to the event; however, each amplifier is capable of playing only a single audio message at time (single channel audio). When more than one event occurs in a zone, the amplifier assigned to that zone will play the audio message assigned to the operational state with the highest priority (See Control Priorities).

MNS AUTOMATIC OPERATION is accomplished via activation of the Contact Monitor input on the FCC digital paging card. This input allows the in-building mass notification system to be interfaced with a Wide-Area mass notification system for transmission of emergency messages. When active, all system amplifiers will turn on and will play the audio message provided to the line level input on the FCC digital paging card by the Wide-Area mass notification system (based on the control priority setting for the contact monitor input).

MANUAL OPERATION of Emergency Communication System (EVACS and MNS) is accomplished by the activation of control switches that can be located in the Fire Command Center enclosure or in any of the Local Operating Consoles located throughout the building. Each of the control switches can be configured to initiate any of the following ECS functions:

1. *Voice Alert* – when pressed, the panel places the assigned zone(s) into Alert mode. All amplifiers assigned to the selected zone(s) will turn on and begin to play the stored Alert message.
2. *Voice EVAC* – when pressed, the panel places the assigned zone(s) into EVAC mode. All amplifiers assigned to the selected zone(s) will turn on and begin to play the stored EVAC message.
3. *Voice Page* – when pressed, all amplifiers assigned to the selected zone(s) will turn on and broadcast the live page being delivered over the network audio riser.
4. *Voice Record Page* – when pressed, all amplifiers assigned to the selected zone(s) will turn on and broadcast the live page being delivered over the network audio riser. In addition, the amp will record the live page into its onboard memory and then will repeat the recorded message over and over once the microphone is released.
5. *Voice Page To Alert* – when pressed, all amplifiers currently in Alert mode will switch to Page mode and will broadcast the live page being delivered over the network audio riser.
6. *Voice Page To EVAC* – when pressed, all amplifiers currently in EVAC mode will switch to Page mode and will broadcast the live page being delivered over the network audio riser.
7. *Voice Play Message ID* – when pressed, all amplifiers assigned to the selected zone(s) will play the assigned audio message ID (1 – 16) that is stored in the amplifier.
8. *MNS Page* – when pressed, all amplifiers assigned to the selected zone(s) will turn on and broadcast the live page being delivered over the network audio riser.
9. *MNS Record Page* – when pressed, all amplifiers assigned to the selected zone(s) will turn on and broadcast the live page being delivered over the network audio riser. In addition, the amp will record the live page into its onboard memory and then will repeat the recorded message over and over once the microphone is released.
10. *MNS Play Message ID* – when pressed, all amplifiers assigned to the selected zone(s) will play the assigned audio message ID (1 – 16) that is stored in the amplifier.

RESET AND SILENCE of the EVACS and MNS systems are required to be independent of each other; therefore, activation of the system's standard RESET and SILENCE switches will not affect any active MNS events and vice versa. Separate and dedicated switches must be provided to RESET and SILENCE the MNS system.

CONTROL PRIORITIES are used by the CyberCat system to determine which event or control switch has operational priority over another. The CyberCat system allows a priority level to be assigned to each panel state and control switch that activates the ECS system. The table below indicates the default priority levels assigned to each panel state.

Operational State	Priority
Alarm	4 (initiates EVAC and Alert)
Test Alarm	5
Supervisory	6
Process	7

CyberCat State Priority Table

The panel priority settings can be changed to allow MNS events to have a higher operational priority than Fire events, when determined acceptable by the risk analysis for the project; however, the system will maintain the operational priorities associated with the standard fire alarm events. For example, an Alarm event must always take precedence over a Supervisory event.

Just like the priority levels set for each CyberCat operational state, each control switch must be assigned a priority level. The priority levels allow the control panel to resolve if the activated switch will be allowed to override the current panel event or if the active switch will be allowed to override another active switch programmed for the same operation. A switch with a lower priority setting cannot override a switch with a higher priority. Switches with the same priority setting can override another switch with the same priority setting (toggle) or a lower priority setting. Each switch must be assigned a priority level from 1-254 using the CyberCat panel's configuration software C-Linx. A setting of 1 gives the switch the highest priority and a setting of 254 gives the switch the lowest priority. In most cases, manual activation of the voice system via activation of a control switch will override the systems automatic operation.

4. AUDIO SYNCHRONIZATION

During operation of the ECS system, it is possible for the audio messages generated by the system amplifiers to become out of sync (i.e., audio message starts and stops at different times). This can potentially cause an echo effect where multiple amplifiers serve a common audio zone due to message playback delay. Page operation is the most common cause for the amplifiers to become out of sync. For example: If a page is initiated to one or more amps, it temporary interrupts the playback of the automatic audio message. Once the page is complete, the amplifier(s) will recommence playback of the automatic audio message, which will now be out of sync with the amplifiers not affected by the page.

If your project requires audio synchronization, the ECS system (FCC Digital Paging Card, LOC Digital Paging Cards, and Amplifiers) must be configured to provide the required sync operation. There are three configuration options available. Selection of which option to use is determined by how the ECS system is configured and the type of sync operation required as described below.

A. Option 1 – Provides sync operation to individual zones on a single panel or networked panel system where zones are not shared across the network.

B. Option 2 – Provides sync operation between multiple zones on a single panel system.

C. Option 3 – Provides sync operation across networked panels and zones.

Refer to Fike documents P/N 06-564 "FCC Digital Paging Assembly", P/N 06-613 "LOC Digital Paging Assembly", or P/N 06-576 "Amplifier Kit" product manuals for synchronization configuration settings.

ⓘ **Note:** Audio Synchronization is only available on CyberCat panels with version 6.0 or newer firmware.

5. DESIGN OPTIONS

For reference purposes, this guide will illustrate three different ways that Fike's voice system can be applied to a ten (10) story hotel that requires automatic evacuation of the fire floor and alert notification of the floor above and below the floor of incident.

Fike's integrated ECS system can be designed for **Single Channel**, **Dual Channel** or **Page Only** system operation. Selection of which option best suits your project will depend upon how the customer wants the system to operate. A description of each design option and how it is applied to a typical installation (in this case a ten story hotel) is provided below:

5.1. OPTION 1 – SINGLE CHANNEL SYSTEM

In a single channel system, individual amplifiers are distributed throughout the hotel with each amp serving a single, continuous audio/paging zone (i.e. single floor, stairwell, elevator cabs, etc.). This configuration provides the following features and functions:

D. Each amplifier can be configured to play area (zone) specific messages in response to the following system events: Drill, EVAC, Alert, Alarm, Test Alarm, Supervisory, and Process.

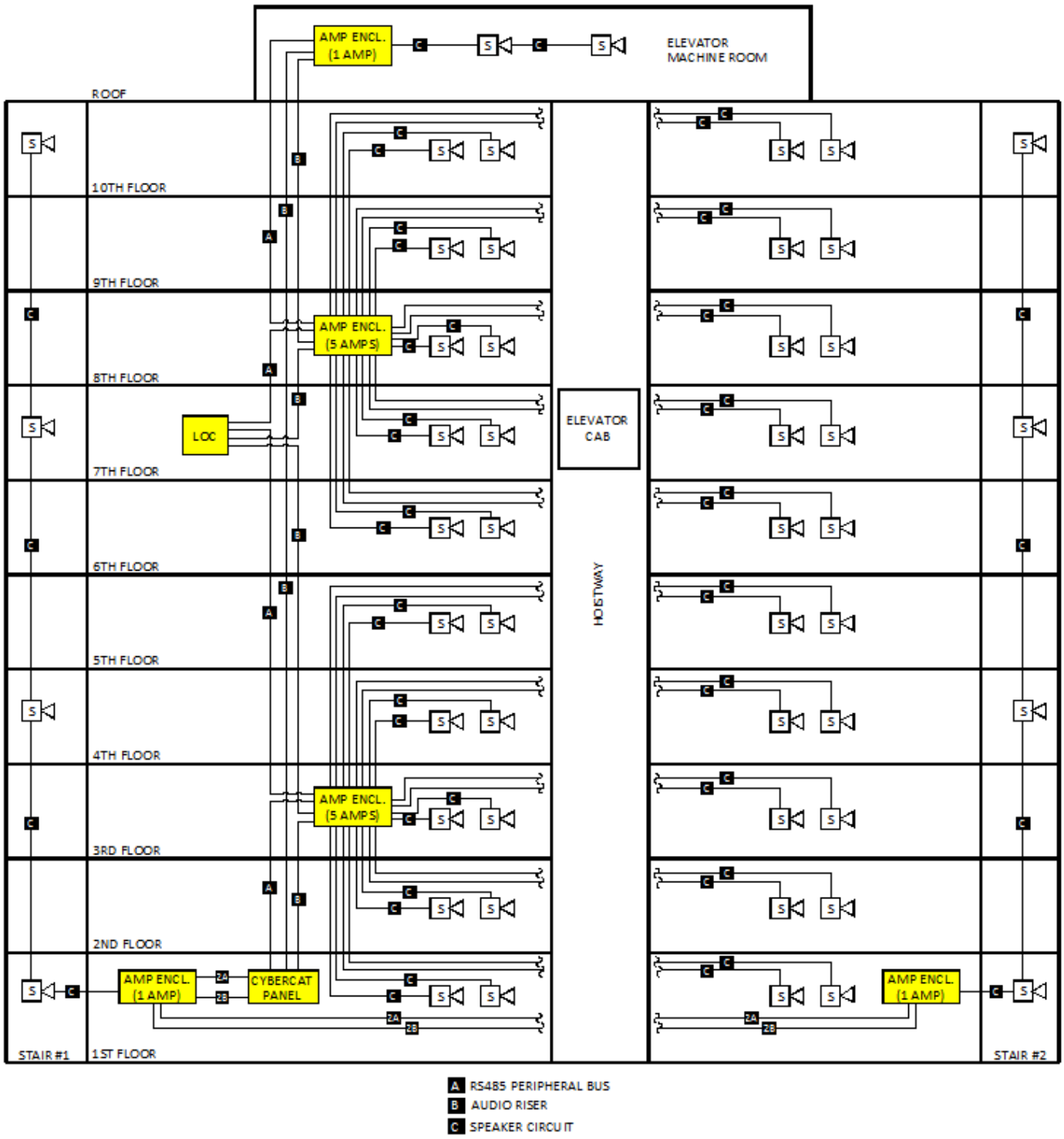
E. Each amplifier can supply a total of 50 watts maximum to its four (4) speaker circuits.

F. Capable of executing the following page functions during normal and alarm operation: Page to selected Zone(s); Record and Repeat Page to selected Zone(s); Page to Alert; Page to EVAC; MNS Page to Zone(s); MNS Record and Repeat Page to selected Zone(s).

G. One or all of the amplifier's four speaker circuits can be utilized to distribute audio throughout the zone; however, all four circuits must be assigned to a single zone. *Individual zoning of the amplifier's four speaker circuits is NOT allowed on a single channel system.*

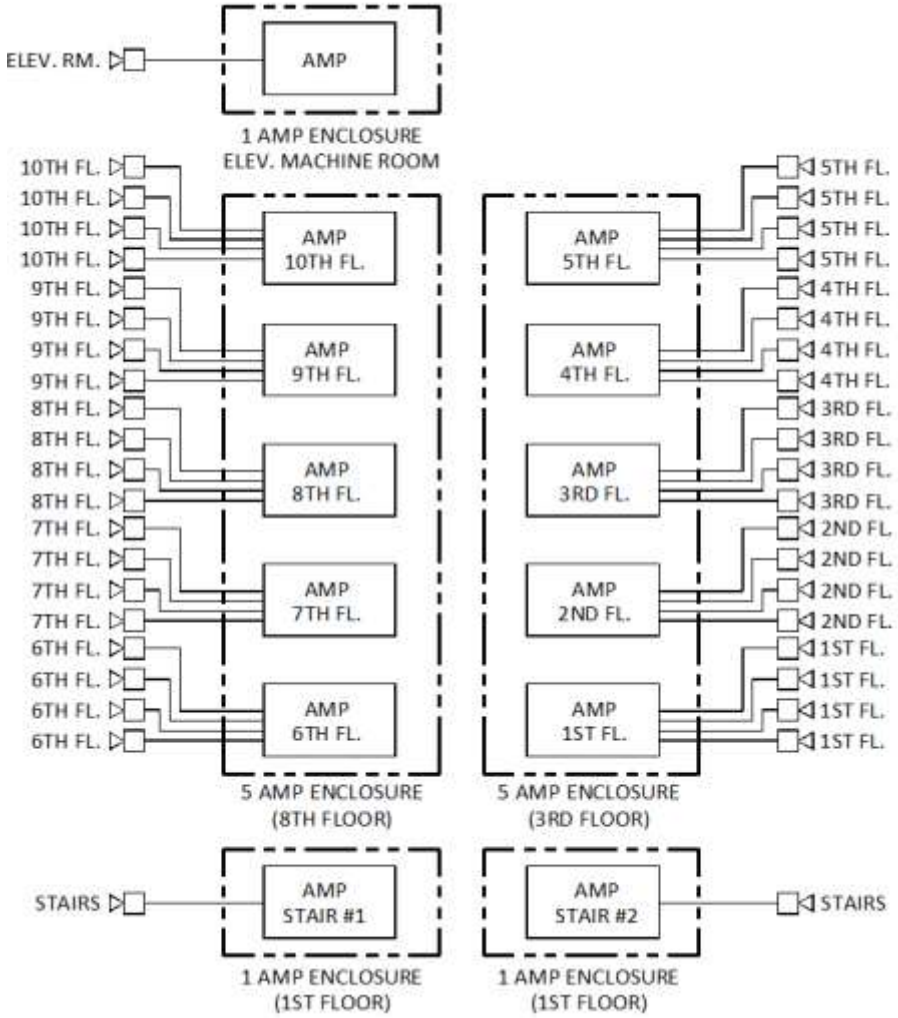
H. If a speaker circuit is physically not going to be used, the circuit can be disabled.

The example shown on the next page depicts a typical single channel system layout, where individual amplifier cards have been installed to serve each floor and each stairwell of the hotel. This configuration provides zoned evacuation and selective paging capabilities by providing an amplifier for each individual notification/paging zone. In this application example, all four of the amplifier's speaker circuits are being utilized to connect to the system speakers; thus, reducing the overall length of the speaker circuit(s). An alternate method would be to utilize a single circuit to connect to the system speakers (max. 50 watts).



EXAMPLE OF A TYPICAL SINGLE CHANNEL SYSTEM

Fike offers several enclosure options for mounting the system amplifiers, ranging from a single amp enclosure to a five amp enclosure for larger applications. In this application example, the amplifier cards serving each floor of the hotel are centrally located in two (2), five amp enclosures located on the 3rd and 8th floors. Two (2), single amp enclosures with amp are installed to service the stairwells.



AMPLIFIER ENCLOSURE LAYOUTS

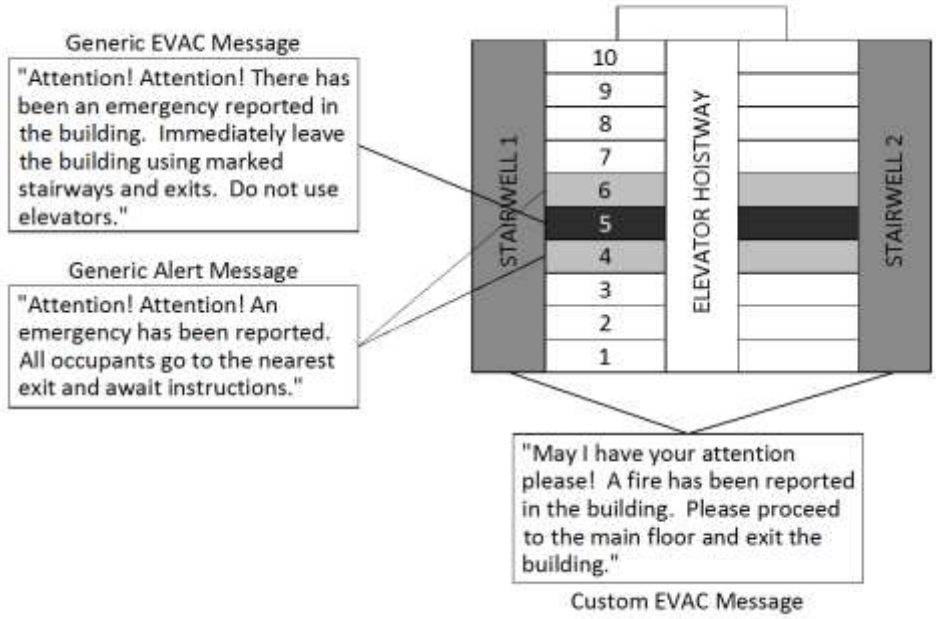
The following equipment list is very high level and does not reflect all components necessary to form a complete ECS system:

1. CyberCat control panel (254 or 1016), Qty. 1
2. Digital paging assembly, P/N 10-2751, Qty. 1
3. Single amplifier enclosure, P/N 10-2797, Qty. 3
4. Five amplifier enclosure, P/N 10-2755, Qty. 2
5. Amplifier kit, P/N 10-2773, Qty. 1
6. Local Operating Console, P/N 10-2800 or 10-2801, Qty. 1
7. 33 AH Battery Enclosure, P/N 10-2154, Qty. 2

5.1.1. SINGLE CHANNEL SYSTEM OPERATION

In response to an Alarm event on the 5th floor, the amplifier serving the 5th floor and its associated speaker circuits will turn on and begin to play the prerecorded EVAC message. Based on zone mapping, the amplifiers serving the 4th and 6th floors and their associated speaker circuits will turn on and begin to play the prerecorded Alert message. Amplifiers serving the stairwells will turn on and play a custom message that is different from the standard EVAC and Alert messages played on each floor. Amplifiers in non-affected areas will not turn on. See example below.

Should the fire condition spread, amplifiers in adjacent areas will automatically change from playing the Alert message to the EVAC message and amplifiers in adjacent zones not previously involved in the notification process will begin to play the Alert message in response to the spread of the fire.



EXAMPLE OF EVAC AND ALERT OPERATION ON A SINGLE CHANNEL SYSTEM

ⓘ **Salesmen/Designer Note:** To determine the total number of amplifiers required for a single channel system, you must first determine the total number of individual paging zones/areas (i.e., stairwells, elevator cabs, individual floors, etc.) that your system requires. Next you will need to verify that the total wattage output of the speakers connected to any single amplifier does not exceed 50 watts. If it does, additional amplifiers will be needed. Next, you will need to perform voltage drop calculations on each speaker circuit to determine if the voltage drop is too great. If it is, consider moving the amplifier(s) closer to the area served, increase the size of the wiring used on the speaker circuit(s), or install additional amplifier cards.

ⓘ **Operational Note:** On a single channel system, each amplifier serves a single paging zone allowing pages to be issued to any zone(s).

5.2. OPTION 2 - DUAL CHANNEL SYSTEM

In a dual channel system, two amplifiers are tied together to form a single dual channel amplifier with eight (8) speaker outputs. Each of the eight (8) available speaker circuits can be configured to serve a different audio/paging zone (i.e. single floor, stairwell, elevator cabs, etc.). This configuration provides the following features and functions:

A. One amplifier must be configured as the EVAC amp and the other as the Alert amp.

B. Each amplifier pair (EVAC and Alert) will activate in tandem in response to an Alarm event in their assigned zone(s). The EVAC amp will play the evacuation message and the Alert amp will play the alert message. Each of the eight (8) speaker circuits will select either the EVAC or Alert amplifier as their audio source based on system programming.

C. Each amplifier pair (EVAC and Alert) can be configured to play specific audio messages in response to the following system events: Drill, EVAC, and Test Alarm. Both amplifiers will operate in tandem in response to these events.

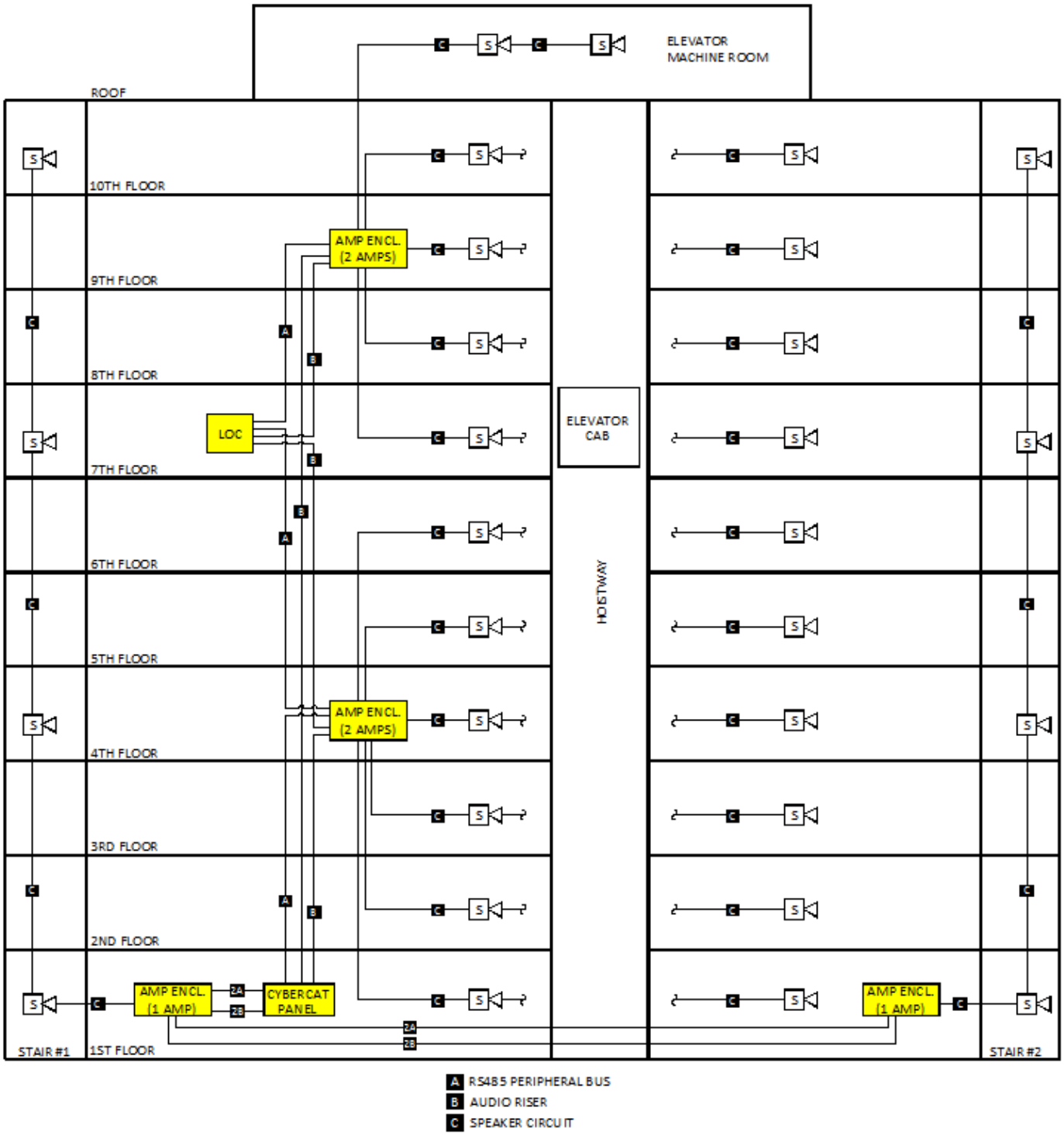
D. Each amplifier pair can supply a total of 50 watts maximum to the eight (8) speaker circuits.

E. Each speaker circuit can be configured to serve a different zone.

F. If a speaker circuit is physically not going to be used, the circuit can be disabled.

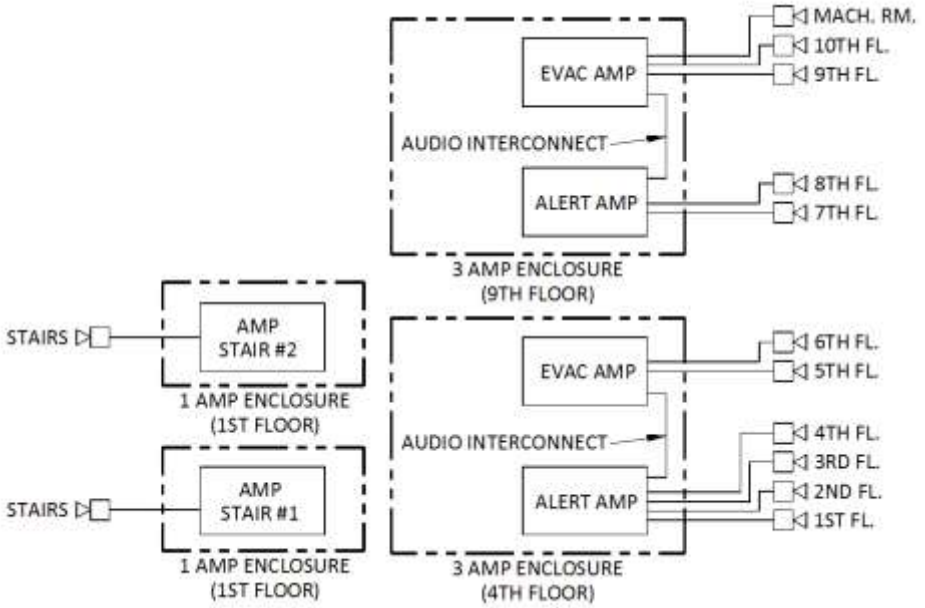
G. Page operation in a dual channel system varies depending upon the operational state of the voice system (i.e., normal operation or alarm active). Refer to “Dual Channel Paging Operation” for further details.

The example shown on the next page depicts a typical dual channel system layout, where two sets of interconnected amplifiers have been installed to serve all ten floors of the hotel. Two interconnected amplifiers have been installed on the 4th floor of the hotel and will serve the 1st through 6th floors. While a second set of interconnected amplifiers have been installed on the 9th floor of the hotel and will serve the 7th through 10th floors and the elevator machine room. Two additional amplifiers (single channel) are installed to service each stairwell.



EXAMPLE OF A TYPICAL DUAL CHANNEL SYSTEM

Fike offers several enclosure options for mounting the system amplifiers, ranging from a single amp enclosure to a five amp enclosure for larger applications. In this application example, two sets of interconnected amplifiers have been installed in two (2), three amp enclosures located on the 4th floor and 9th floors of the hotel. Two (2), single amp enclosures with amp are installed to service the stairwells.



AMPLIFIER ENCLOSURE LAYOUTS

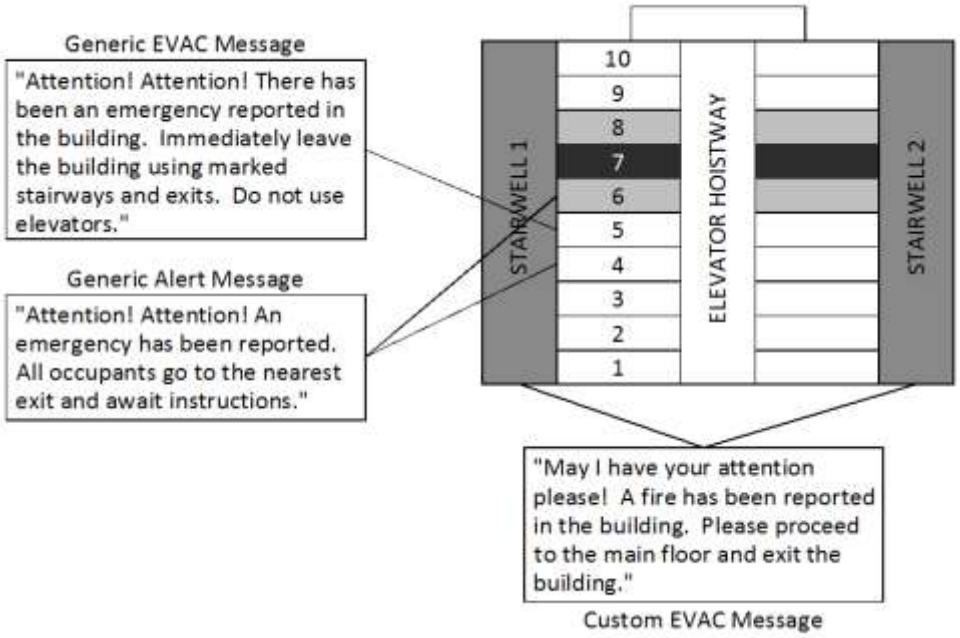
The following equipment list is very high level and does not reflect all components necessary to form a complete ECS system:

1. CyberCat control panel (254 or 1016), Qty. 1
2. Digital paging assembly, P/N 10-2751, Qty. 1
3. Single amplifier enclosure, P/N 10-2797, Qty. 2
4. Three amplifier enclosure, P/N 10-2754, Qty. 2
5. Amplifier kit, P/N 10-2773, Qty. 6
6. Local Operating Console, P/N 10-2800 or 10-2801, Qty. 1

5.2.1. DUAL CHANNEL SYSTEM OPERATION

In response to an alarm event on the 7th floor, both sets of dual channel amplifiers located on the 4th and 9th floors will turn on and will begin to play their prerecorded EVAC and Alert messages. Based on zone mapping, the speaker circuits serving the 7th floor will select the EVAC amp as their audio source and will play the EVAC message; whereas the speaker circuits serving the 6th and 8th floors will select the Alert amps as their audio source and will play the Alert message. Speaker circuits serving non-affected areas will not turn on. See example below.

Should the fire condition spread, active speaker circuits currently playing the Alert message will automatically switch to play the EVAC message and speaker circuits serving zones not previously involved in the notification process will begin to play the Alert message in response to the spread of the fire.



EXAMPLE OF EVAC AND ALERT OPERATION ON A DUAL CHANNEL SYSTEM

ⓘ **Salesmen/Designer Note:** To determine the total number of amplifiers required for a dual channel system, you must first determine the total number of evacuation zones/areas (i.e., stairwells, elevator cabs, individual floors, etc.) that your system requires. If certain areas (i.e., stairwells, elevator cabs, etc.) require that a distinct evacuation or alert message is played in response to an Alarm event, you will need to provide a separate amplifier to play the distinct message in each zone/area. Next you will need to verify that the total wattage output of the speakers connected to any dual channel amplifier pair does not exceed 50 watts[1]. If it does, additional amplifiers will be needed. Next, you will need to perform voltage drop calculations on each speaker circuit to determine if the voltage drop is too great. If it is, consider moving the amplifier(s) closer to the area served, increase the size of the wiring used on the speaker circuit(s), or install additional amplifier cards.

[1] Each set of dual channel amps is limited to a maximum of 50 watts output due to possibility that all eight speaker circuits could be required to play either the EVAC or Alert message on all eight circuits at the same time.

5.2.2. DUAL CHANNEL PAGING OPERATION

On a dual channel system, it is important to remember that each speaker circuit on an amplifier can be configured to serve a separate audio/paging zone.

Paging During Normal Operation – When the CyberCat system is in Normal operation, page commands can be manually initiated to any zone(s) by pressing a control switch programmed for the selected page operation. Upon switch press, the CyberCat panel will initiate a page command for the zone(s) assigned to the switch. Amplifiers and their associated speaker circuits that are assigned to the selected paging zone will activate and distribute the live page.

Paging During Alarm Operation – When an Alarm event is present on the CyberCat system, page commands are limited to Page All, Page to EVAC and Page to Alert and can be manually initiated by pressing a control switch programmed for the selected page operation.

- Page All – Upon switch press, all amplifiers will switch to Page mode and will broadcast the live page being delivered over the network audio riser.
- Page To Alert – Upon switch press, all amplifiers currently in Alert mode will switch to Page mode and will broadcast the live page being delivered over the network audio riser.
- Page To EVAC – Upon switch press, all amplifiers currently in EVAC mode will switch to Page mode and will broadcast the live page being delivered over the network audio riser.

During Alarm operation, paging to individual zones is no longer possible due to the fact that in a dual channel system, interconnected amplifiers serve the same zones and both will activate in tandem in response to an alarm event with one playing the EVAC message and the other playing the Alert message. If a page to zone command is initiated, both amplifiers will switch to page operation causing both the EVAC and Alert messages to stop playing on all eight speaker circuits until the page operation to the selected zone is complete.

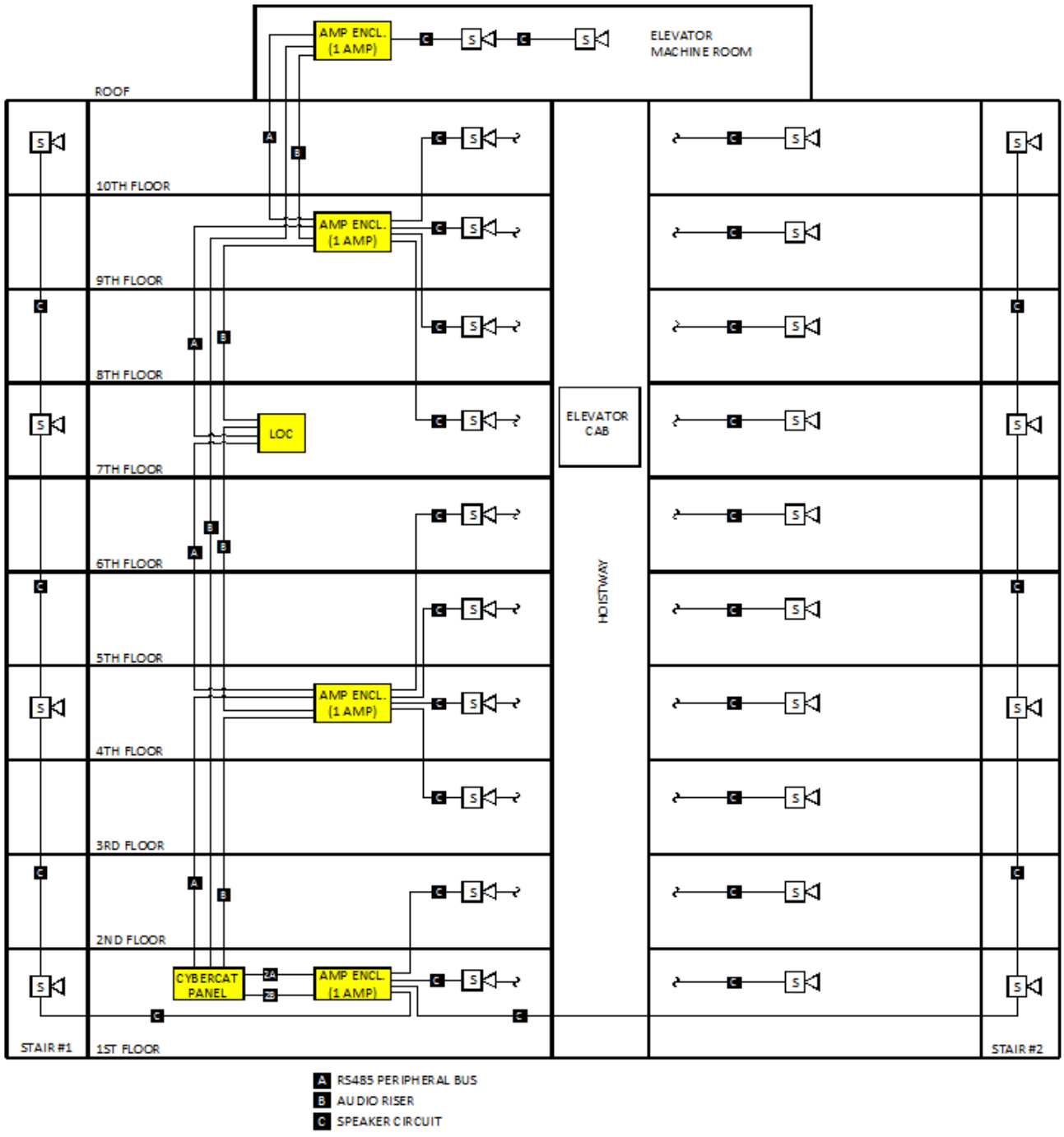
5.3. OPTION 3 - PAGE ONLY SYSTEM

In a page only system, the amplifier(s) is utilized for paging purposes only. No automatic voice messaging is involved. This configuration provides the following features and function:

A. Individual amplifier cards are distributed throughout the hotel with each amp being capable of serving up to four (4) individual paging zones (i.e. single floor of a high rise building, stairwell, elevator cab, etc.).

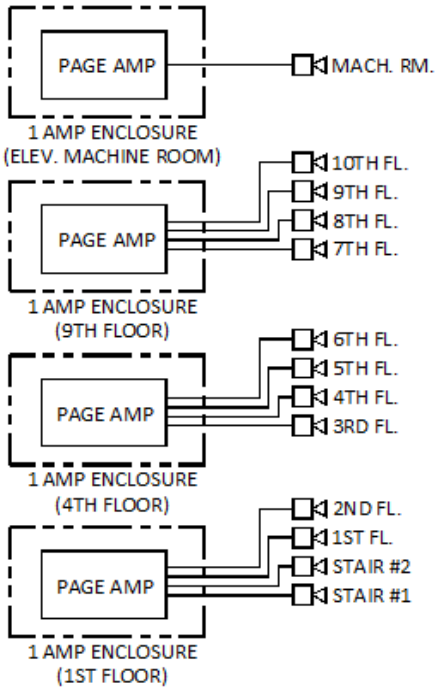
B. One or all four of the amplifier's speaker circuits can be utilized for paging purposes. If a speaker circuit is physically not going to be used, the circuit can be disabled using the system configuration software.

The example below depicts a typical page only system layout.



EXAMPLE OF A TYPICAL PAGE ONLY SYSTEM

Fike offers several enclosure options for mounting the system amplifiers, ranging from a single amp enclosure to a five amp enclosure for larger applications. In this application example, three (3) individual amplifiers have been installed in single amp enclosures located on the 1st, 4th and 9th floors of the hotel.



AMPLIFIER ENCLOSURE LAYOUTS

The following equipment list is very high level and does not reflect all components necessary to form a complete ECS system:

1. CyberCat control panel (254 or 1016), Qty. 1
2. Digital paging assembly, P/N 10-2751, Qty. 1
3. Single amplifier enclosure, P/N 10-2797, Qty. 4
4. Amplifier kit, P/N 10-2773, Qty. 4
5. Local Operating Console, P/N 10-2800 or 10-2801, Qty. 1

5.3.1. PAGE ONLY OPERATION

In a page only system, page commands can be manually initiated to any zone(s) by pressing a control switch programmed for the selected page operation. Upon switch press, the CyberCat panel will initiate a page command for the zone(s) assigned to the switch. Amplifiers and their associated speaker circuits that are assigned to the selected paging zone(s) will activate and distribute the live page.

ⓘ **Salesmen/Designer Note:** To determine the total number of amplifiers required for a page only system, you must first determine the total number of individual paging zones/areas (i.e., stairwells, elevator cabs, individual floors, etc.) that your system requires. Next you will need to verify that the total wattage output of the speakers connected to any single amplifier does not exceed 50 watts. If it does, additional amplifiers will be needed. Next, you will need to perform voltage drop calculations on each speaker circuit to determine if the voltage drop is too great. If it is, consider moving the amplifier(s) closer to the area served, increase the size of the wiring used on the speaker circuit(s), or install additional amplifier cards.

6. AHJ SPECIFIC APPLICATIONS

The cities of Boston, Chicago and New York require the emergency communication system to operate in a specific manner in order to be approved for use. Therefore, a Voice City configuration option has been added to Fike's ECS system components. When a specific city is selected, certain configuration options are no longer available and new configuration options are added in order to comply with the operational requirements of the selected city. Contact Fike for a complete description of the AHJ specific applications.

7. EMERGENCY COMMUNICATION SYSTEM PARTS LIST

The part numbers listed are top level and do not reflect the entire part number required to order the part. Refer to Fike's latest published price list for complete part number ordering format.

Part Number	Description
10-2751	Digital Paging Assembly
10-2727	FCC Digital Paging Card; included in 10-2751
10-2757	FCC Microphone Housing; included in 10-2751
10-2741	FCC Paging Control Card; included in 10-2751
10-2756	FCC Fire-Phone Housing
10-2773	Amplifier Kit
10-2726	Amplifier Card; included in 10-2773
02-10881	120 V Power Transformer; included in 10-2773
02-10882	240 V Power Transformer; included in 10-2773
02-12825	Audio Transformer; included in 10-2773
10-2797	Single AMP Remote Audio Enclosure
10-2746	AMP Class A Speaker Card
10-2754	Three AMP Remote Audio Enclosure
10-2755	Five AMP Remote Audio Enclosure
10-2659	I/O Card, Dead Front Mount
10-2661	Six Zone Audio Card; Dead Front Mount
10-2728	Primary Fire-Phone Card; Dead Front Mount
10-2730	Supplemental Fire-Phone Card; Dead Front Mount
10-2800	Local Operating Console
10-2801	Local Operating Console with Remote Display Unit
10-2816	LOC Digital Paging Card; included in 10-2800 & 10-2801
10-2813	LOC Microphone Housing; included in 10-2800 & 10-2801
10-2798	LOC Paging Control Card; included in 10-2800 & 10-2801
24-133	Fire-Phone Jack
24-135	Addressable Fire-Phone Module (Series 500)
24-134	Portable Fire-Phone Handset
24-131	Emergency Telephone Enclosure w/ Handset
24-138	Fire Warden Telephone Enclosure w/ Handset
24-132	Emergency Telephone Storage Cabinet – 5 phones
24-139	Emergency Telephone Storage Cabinet – 10 phones