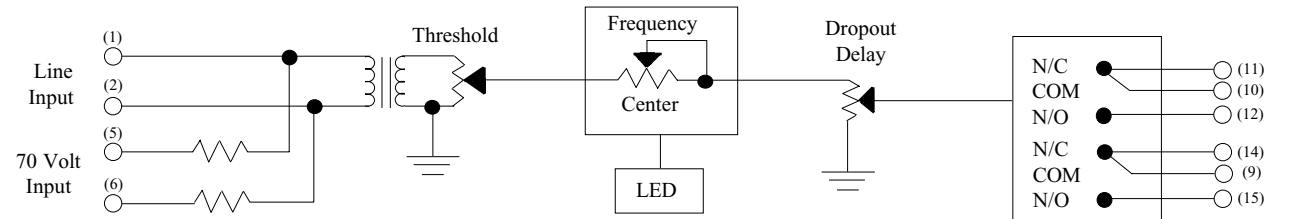


# CONNECTIONS & SPECIFICATIONS

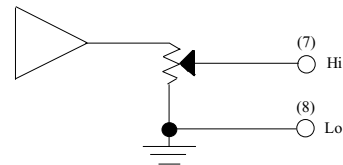
# SUPERVISORY SYSTEM MODULES

## Block Diagram



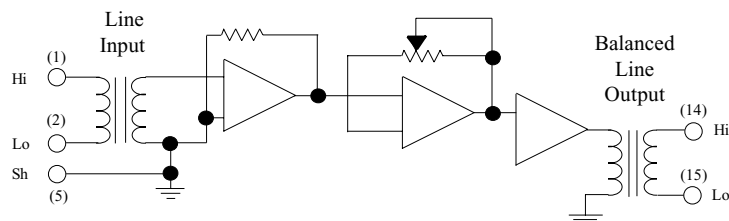
## Block Diagram

**Model 562B  
Model 546B**



## Block Diagram

**Model 517B**



## Specifications Model 685

Input Impedance..... Line Input = 10K Ohms, Balanced  
70 Volt Input = 20K Ohms, Balanced  
Minimum Input Level..... -20dB, 25Hz  
Detector Bandwidth..... 25Hz, ±0.5dB  
Indicators..... LED, Detector Activation  
Controls..... Detector Level Adjustment, -20 to 70volts  
Frequency Trim Adjustment  
Relay Dropout Delay, 0 to 30 seconds,  
Contact Configuration..... Adj. 2 Form C, 1A @ 30VDC  
Power Requirements..... 15-24VDC @ 40ma  
Size..... 2.5"H x 8.0"D x 1.1"W  
Operating Temperature..... 0 To 70 Degrees C

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

## Specifications Model 517B

Maximum Input..... +18dB  
Notch Depth..... 0-40dB, Adjustable  
Notch Width..... ±0.5dB  
Maximum Output..... +20dBm  
Frequency Response..... 100Hz To 20KHz, +0, -1dB  
Distortion..... 0.25% Maximum @ +14dBm  
Noise..... -85dB Below +4dBm Out  
Power Requirements..... ±15-18VDC @ 25ma  
Size..... 2.5"H x 8.0"D x 1.1"W  
Operating Temperature..... 0 To 70 Degrees C

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

## Specifications Models 546B & 562B

Frequency..... Model 546 = 1KHz  
Model 562 = 25Hz  
Output Level..... -20 To + 8dBm, Adj.  
Recommended Load..... 600 Ohms Or Higher  
Distortion..... Less Than 0.01%  
Power Requirements..... ±15-18VDC @ 25ma  
Size..... 2.5"H x 8.0"D x 1.1"W  
Operating Temperature..... 0 To 70 Degrees C

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

## Architect's & Engineer's Specifications

The (Supervisory Detector, Notch Filter, Oscillator) shall be constructed as a plug-in printed circuit board module. It shall be designed to allow up to 10 modules to fit in a rack mount card frame, requiring no more than 3.5" of vertical rack space. The (Supervisory Detector, Notch Filter, Oscillator) shall be unplugable from the front of the card frame, without the need to disconnect wires attached to the rear connector. The Supervisory Detector shall have a transformer isolated, balanced audio input. It shall be capable of accepting audio inputs from both balanced and unbalanced lines, without loading or unbalancing the lines. The unit shall be capable of accepting standard audio line levels, and 70.7 volt audio levels. The supervisory detector shall have provision for adjustment of minimum detection level, and frequency trim. The detector shall have an LED indicator to display detector circuit activation. The supervisory detector shall incorporate a 2 pole, double throw relay, capable of switching loads from line level audio, to a maximum of 1 amp at 30VDC. The Supervisory Detector shall be: Protech Audio Corporation Model 685

The notch filter shall contain a transformer isolated input, followed by a fixed gain buffer amplifier stage. The notch filter shall have an adjustable notch depth, capable of attenuating a(25Hz- 40Khz, Specify) signal up to 40 dB, while not effecting audio frequencies of 100Hz to 20KHz. The notch depth shall be adjustable via an on-board trimpot. The audio output of the notch filter shall be balanced, transformer isolated, and capable of driving a 600 ohm line to +20dB. The notch filter shall be: Protech Audio Corp. Model 517B

The oscillator shall be capable of providing a steady state audio signal of (25Hz To 40KHz, Specify)  
The Audio Oscillator shall be Protech Audio Corporation Model 546B, or Model 562B.

## ACCESSORIES

CARD FRAME PACKAGE.....Model 858B  
Includes Card Frame, Backplane, and Plug-In Power Supply Card.  
Allows mounting of up to 9 audio cards.

CARD FRAME PACKAGE.....Model 857B  
Includes Card Frame and Backplane Assembly. For use with external power supply Model 66708. Allows mounting of up to 10 audio cards.

**Protech Audio Corporation**  
PO Box 597, 192 Cedar River Road  
Indian Lake, New York 12842  
Voice 518-648-6410 Fax 518-648-6395  
Web - www.protechaudio.com

**AUTHORIZED DEALER**

## INTEGRA III SYSTEM

**Model 517B, Model 546B  
Model 562B, Model 685**

www.protechaudio.com



- Works With Existing Systems or New Construction.
- Supervises Line Level Circuits, Power Amp Circuits, & Speaker Lines.
- Can Be Used To Supervise Remote Locations, For Multi-Building Operation.
- Modular Construction Allows Mixers & Distribution Amplifiers In Same Frame.
- Can Be Configured To Control Switching Of Backup Amplifiers Circuits.
- All Connections Made Via Easy-To-Use Euro-Style Connectors (No Lugging Required).

Many installations today are being designed with self-monitoring features, in order to insure that complete communications are being maintained. The Protech Audio Supervisory System modules are designed for high reliability applications, where the monitoring of audio circuits is required. A typical systems application would be a public address or paging system in facilities such as hospitals, office buildings, shopping malls or industrial facilities.

The Model 685 will detect the presence of a preselected tone, at the output of an audio channel. This type of monitoring system is the most effective way to insure that the audio channel is functioning properly. It can detect high distortion, level drop, or complete elimination of the audio signal.

The tone originates in the Model 546B or 562B oscillator module, and is fed into the audio system, at the earliest possible point. This allows the supervisor module to supervise the most equipment. Mixer modules, such as the Models 874-877, are available to facilitate the introduction of the tone, into the audio signal system.

The detector circuit of the Model 685 is wired to selected points in the audio system. It will monitor the preselected tone for presence, distortion, and level. If there is a change, the on-board relay will change contact positions, and effect additional changes in the system configuration, as determined by the system designer. It can be configured to notify responsible personnel, of faults, and/or to switch in backup audio equipment, such as a zone power amplifier.

In addition to the Model 685, there is a notch filter module (Model 517B), oscillator cards (Model 546B & 562B), and switching cards (Models 571B, 590, 655B, & 697B) to facilitate construction of the supervisory circuits, and additional control circuits. Block diagrams of typical circuits are provided on the following pages. These diagrams are intended to allow the system designer to understand the typical signal flow, and the modules necessary to create several different types of systems.

For additional information or applications assistance contact:

SALES ENGINEERING

**PROTECH**<sup>®</sup>

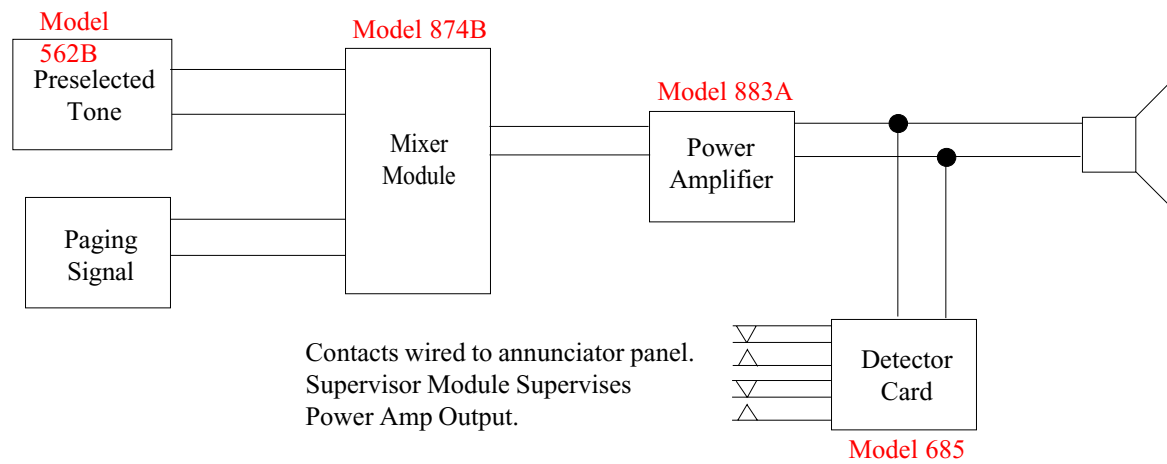
Engineering Data

SUPERVISORY SYSTEM MODULES

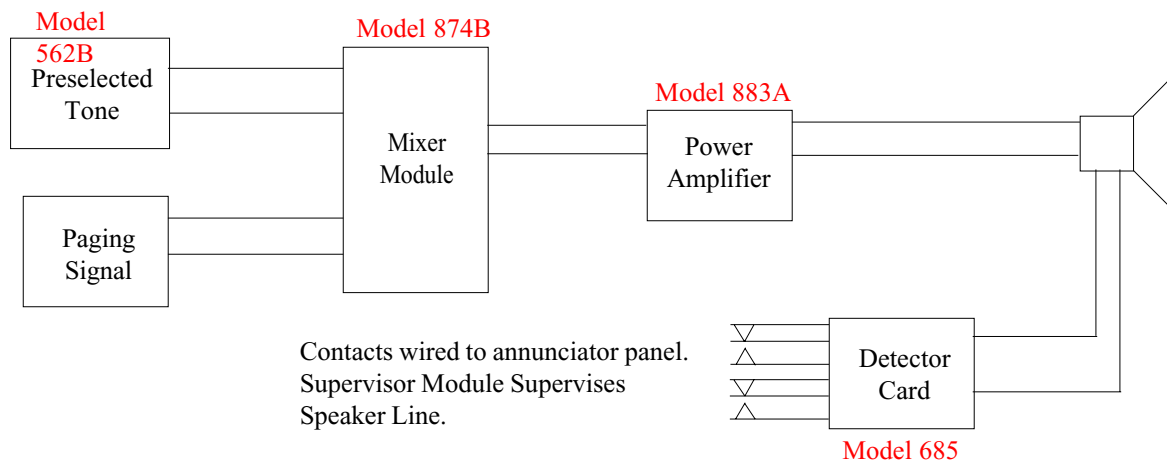
# SUPERVISORY SYSTEM MODULES

# TYPICAL SYSTEM DRAWINGS

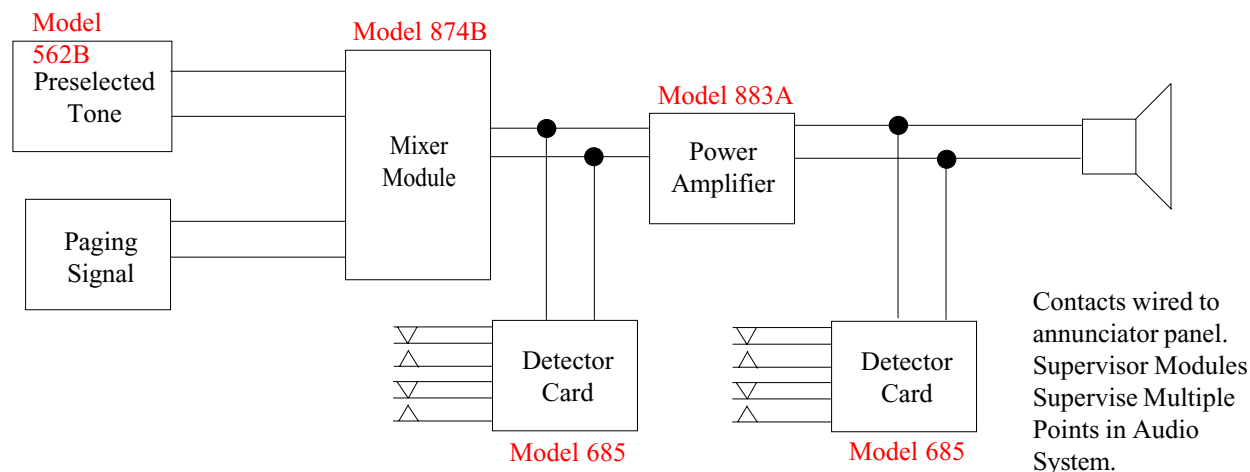
### Standard Configuration #1



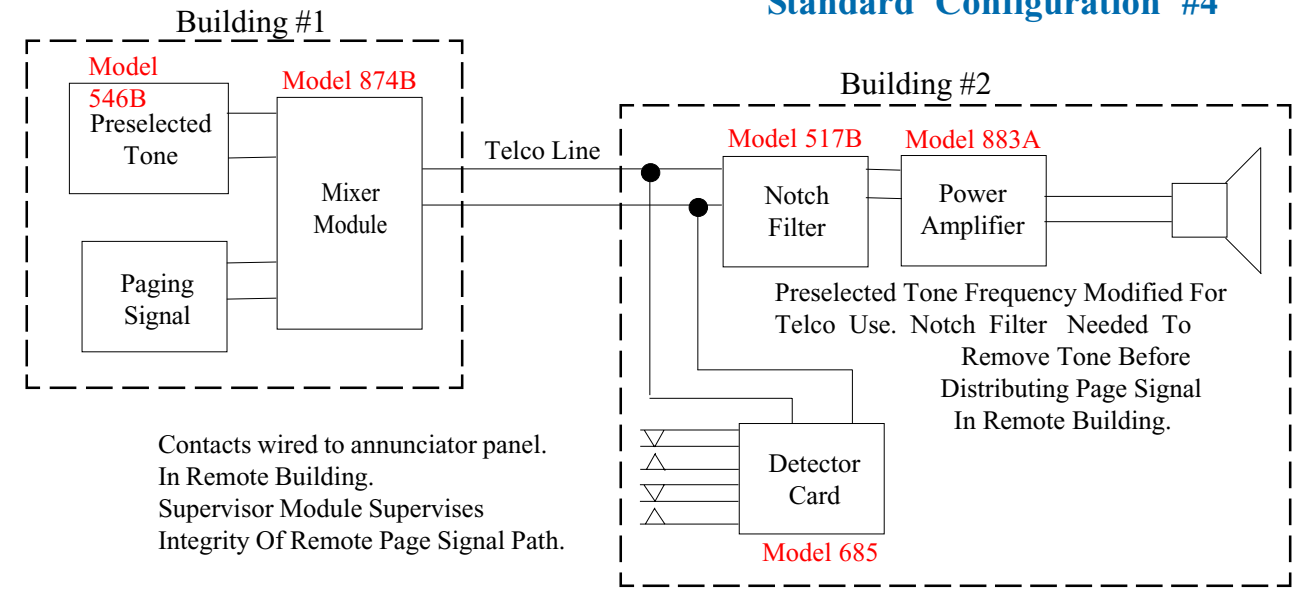
### Standard Configuration #2.



### Standard Configuration #3



### Standard Configuration #4



## Model 685

The Model 685 is a supervisory detector module. The module is designed to detect the presence of a preselected frequency. The audio input section of the Model 685 is balanced and isolated, using a high impedance audio transformer. This allows the unit to detect across a wide variety of audio circuits, without loading or unbalancing the lines. There are adjustments available to tune the detector's center frequency the threshold of detection, and the relay dropout delay. The center frequency adjustment allows the unit to be trimmed for operation with a particular oscillator (Models 546B & 562B). The threshold adjustment can be used to set the card for a minimum signal level. If the level falls below the desired setting, the detector will trigger a change in the on-board relay closures. The adjustable delay prevents the unit from triggering during switching functions. The default setting of the Model 685 is tone present = relay activated.

## Model 517B

The Model 517B is a notch filter designed to work with the supervisory detector module. The normal frequency of the detector tone is 25Hz. This frequency is sub-audible in most distributed systems. However, telco lines usually cannot pass this low frequency. In systems using telco lines, the detector frequency is shifted to allow it to pass through the telco system. The notch filter module is used to remove the higher detector frequency, prior to distributing the paging signal.

## Model 562B

The Model 562 is an oscillator card. It provides the constant 25Hz frequency tone required by the supervisory detector module, in most applications.

## Model 546B

The Model 546 is an oscillator card. It provides higher frequency tones for multiple location supervisory systems.

## Special Notes-

When using the supervisory system on power amplifier outputs, it should be noted that the level of the supervisory tone should be no more than 0dB at the output of the amplifier. If the tone level is higher, it may cause the amplifier to heat up unnecessarily. This is due to the constant sinewave characteristics of audio oscillators. Spoken words, or music, have fluctuating RMS values, and do not stress the power amplifiers in the same fashion as oscillators.

When using the supervisory system on speaker lines, the speakers should be wired in a "series" configuration. If the speakers are wired in a "star" configuration, the supervisor module will not be able to monitor speakers that are wired on branches of the "star", other than the branch on which the supervisor module is terminated. If there is no alternative to wiring the speakers in a "star" configuration, a separate supervisory module is required for each leg of the "star".