

# **Notes to Installers – Small PA Systems**

*A guide to fitting Audix Small Public Address Systems*

## Revision History

Version	Modifications	Date
1	Original Version	08-Nov-2006
2	Additional wiring information and Appendix notes	20-Feb-2007

### DISCLAIMER

This manual contains information that is correct to the best of Audix Systems knowledge. It is intended to be a guide and should be used as such. It should not be considered as a sole source of technical instruction, replacing good technical judgement, since all possible situations cannot be anticipated. If there are any doubts as to exact installation, configuration and/or use, call Audix Systems at +44 (0)1799 540888

## TYPICAL SMALL PUBLIC ADDRESS SYSTEM

A typical small Public Address system comprises the following equipment. Each part of the system is covered in detail in the numbered sections.

- 1. Microphone units (single or multi-button) with flexible flying lead**
- 2. Main amplifier equipment**
- 3. Mains supply**
- 4. Loudspeaker cabling**
- 5. Loudspeakers**

### Appendix 1 Typical installation times

# 1 Microphones

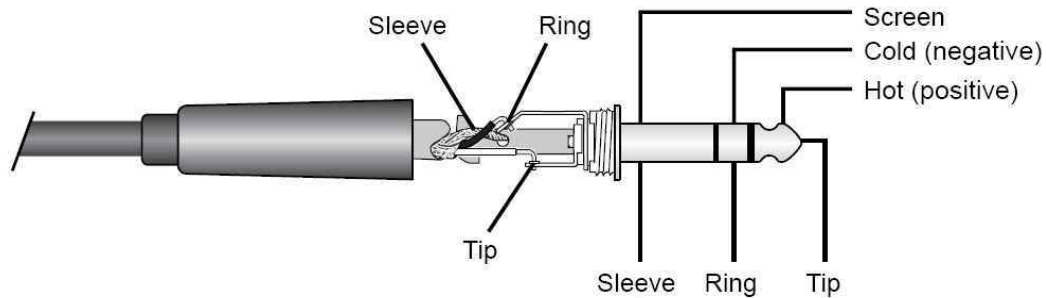
## 1.1. Single PTT Button Microphone

These microphones are the standard unit supplied with all PA packages. Any microphone connected to the amplifier(s) jack socket(s) or XLR socket(s) will page all areas of the system.

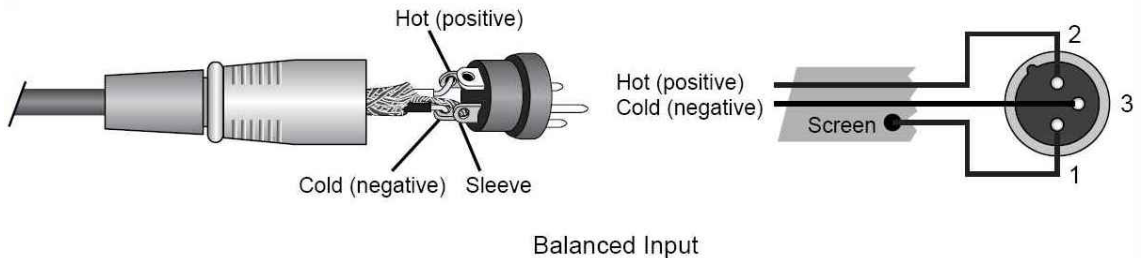
Microphone units are supplied with a 2.5m open ended flexible cable. Sufficient space needs to be allowed for desk mounting of each unit and a suitable route for the flexible cable to the termination plug. A jack plug or XLR connector are provided as necessary.

The microphone cable may be extended up to 40m if required. A 2 core screened cable must be used. Screened CAT5 cable would be also suitable.

### Wiring Using Jack Plug



### Wiring Using XLR Plug



Note  
 Positive (Hot) – Red  
 Negative (Cold) – Black  
 Screen - Braided Screen

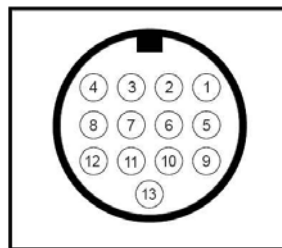
All Other cores unused.

## 1.2. 5 Zone PTT Button Microphone

The 5 zone microphone is available for use with the System F 340W PA + music mixer amplifier (2571/022). This microphone enables the user to select the zone (area) where the PA announcement is heard. The microphone is supplied with a minimum 3m of cable fitted with the required connector. Sufficient space needs to be allowed for wall or desk mounting of each unit and a suitable route for the flexible cable to the termination plug. The cable may be extended up to 250m. A good quality 12 core screened cable must be used. Only one 5 zone microphone can be connected to the System F amplifier. Some examples of suitable cables are:

DEF STAN 61-12 Part 5 Screened

Farnell 16-2-12C      715-864 (25M), 715-876 (100M)  
RS 16-2-12C        482-5702 (25M), 482-5718 (50M)



DIN jack (13 pin)

Pin 1 : Remote amplifier input signal hot (+)	Pin 8 : Remote control 5 (SP5)
Pin 2 : Remote amplifier input signal cold (-)	Pin 9 : Remote control ground
Pin 3 : Signal ground	Pin 10 : DC +24V
Pin 4 : Remote control 1 (SP1)	Pin 11 : Ground
Pin 5 : Remote control 2 (SP2)	Pin 12 : NC
Pin 6 : Remote control 3 (SP3)	Pin 13 : Remote chime
Pin 7 : Remote control 4 (SP4)	

\* Remote cable length must be used within 300 meter (cable 300m)

Never place the unit near radiators, in front of heating vents, exposed to direct sun light, in excessive humid or dusty location to avoid damage to the equipment

## 2 Amplifier Equipment

The amplifiers are designed for desktop or shelf installation. The maximum weight is 15kg.

Never place the unit near radiators, in front of heating vents, exposed to direct sun light, in excessive humid or dusty location to avoid damage to the equipment

## 3 Mains Supply

A 240 Volt 50Hz mains supply is required. As a guide each amplifier unit will draw a maximum of 2A in normal operation. Earth bonding should be in accordance with the latest IEE regulations or the specific site requirements.

## 4 Loudspeaker Circuits

Each loudspeaker can be wired from a junction box on the main circuit or it can be arranged that the main circuit goes through each speaker. It should be noted that some speakers may only have one cable entry point. All speaker units are connected in parallel.

Loudspeaker cabling carries audio signals up to 100V and between the range of 20Hz to 20kHz. Care should be taken to avoid running these cables adjacent to other signal or data cables for long distances as interference is likely to be induced.

All PA systems have one speaker circuit (systems A, B & C). All PA plus Music Systems have up to 5 speaker circuits (systems D, E & F). Where zone selection is required the PA and music amplifier must be used and one speaker circuit used for each zone specified.

### 4.1. Standard Cabling

For small public address systems up to a total of 340 Watts load we recommend 2 core cable with the following lengths dependant on the length of the speaker cable.

Cable Distance	Cable Size
> 600m	1.0mm <sup>2</sup>
600m - 1200m	1.5mm <sup>2</sup>
<1200m	2.5mm <sup>2</sup>

If these guidelines are adhered to then the maximum signal drop at the last speaker should be in the order of 1dB at an average speech signal level and in the order of 3dB at maximum output, both of which are negligible. It should be noted that whilst we recommend conductor sizes the actual type of cable used should be appropriate to the individual site and installation.

## 5 Loudspeakers

Loudspeakers vary significantly in their cabling and mounting requirements. It is also important that loudspeakers are angled correctly and tapped correctly at the time of installation.

**Note: Loudspeakers are normally despatched tapped for MAXIMUM output and require changing upon installation.**

## Appendix 1

**Note: The table below is provided for guidance purposes only. It is intended for the installer to modify these figures to reflect a measured installation time throughout progressive installations.**

	Description	Time per Unit	Cost per Unit	No. of Units	Total Time	Total Cost	Notes
2571/001	System A - Desktop 30 Watt amplifier, 2 mic inputs, aux input and telephone input	30 mins					Assumes location on a table top or similar with 13A mains socket nearby and speaker cables wired to location
2571/002	System B - Desktop 60 Watt amplifier, 3 mic inputs, 2 aux inputs	30 mins					Assumes location on a table top or similar with 13A mains socket nearby and speaker cables wired to location
2571/003	System C - Desktop 120 Watt amplifier, 3 mic inputs, 2 aux inputs	30 mins					Assumes location on a table top or similar with 13A mains socket nearby and speaker cables wired to location
2571/020	System D - Desktop Mixer Amplifier, 6 input, 5 zone 60 Watt output	30 mins					Assumes location on a table top or similar with 13A mains socket nearby and speaker cables wired to location
2571/021	System E - Desktop Mixer Amplifier, 6 input, 5 zone, 120 Watt output	30 mins					Assumes location on a table top or similar with 13A mains socket nearby and speaker cables wired to location
2571/22	System F - Desktop Mixer Amplifier, 6 input, 5 zone 340 Watt output	30 mins					Assumes location on a table top or similar with 13A mains socket nearby and speaker cables wired to location
2571/040	Single zone paging microphone for desktop amplifiers	30 mins					Assumes fitting connector to standard lead and amplifier. <i>Not</i> including time to connect any extension cable if required.
2571/041	5 zone microphone console (for 2571/022 only)	30 mins					Assumes fitting connector to standard lead and amplifier. <i>Not</i> including time to connect any extension cable if required.
570.503.023	RCS5/T – 6W Ceiling Loudspeaker	20 mins					Times to fit & terminate. Assumes 3m ceiling height & tile cut ready.
570.503.014	RCS5/TCOAX - 10W Ceiling Loudspeaker music quality	20 mins					Times to fit & terminate. Assumes 3m ceiling height & tile cut ready.
570.503.011	PBC6/T - 6W Moulded Plastic Cabinet Loudspeaker	30 mins					Times to fit & terminate. Assumes wall mounted 3m maximum above floor level.
570.503.032	PH10/T - 10W Weatherproof IP66 Horn Loudspeaker	30 mins					Times to fit & terminate. Assumes speakers mounted approx. 6m above floor level.
570.503.046	CAD10/T - 10W Plastic Weatherproof Resistant Projector Loudspeaker	30 mins					Times to fit & terminate. Assumes speakers mounted approx. 6m above floor level.
570.503.038	MSH30/T – 30W IP66 Music Horn Loudspeaker	30 mins					Times to fit & terminate. Assumes speakers mounted approx. 9m above floor level.
	Cable installation. Per metre						