

TELEANNOUNCE

User's Guide



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Documentation Information

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Welcome

Thanks for purchasing a Matrix product.

We want you to get the maximum performance from our product. If you run into technical difficulties, we are here to help. But please consult this manual first.

If you still can't find the answer, gather all the information or questions that apply to your problem and, with the product close to you, call your dealer. Matrix dealers are trained and ready to give you the support you need to get the most from your Matrix product. In fact, most problems reported are minor and can be easily solved over the phone.

In addition, technical consultation is available from Matrix engineers every business day. We are always ready to give advice on application requirements or specific information on installation and operation of our products.

The User's guide is arranged alphabetically. We would like to advise first time users to read this User's guide in following sequence of topics.

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- Application of the TeleAnnounce 10
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- Programming the TeleAnnounce 35
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- Terminating an Announcement 46
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Thanks !!

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All Zones Announcement

What's this?

If same message is to be paged in all the page zones then caller should select all zones and make an announcement.

How it works?

- Caller calls TeleAnnounce.
- TeleAnnounce senses the call. It verifies the validity of the call for 3-6 seconds. Meanwhile caller gets ring back tone from PSTN or PBX.
- TeleAnnounce answers the call.
- The caller gets dial tone.
- If the feature of access password is enabled then TeleAnnounce waits for valid access password.
- If the caller dials valid access password, the TeleAnnounce responds with dial tone else gives error tone for 3 seconds followed by dial tone.
- If the feature of access password is not enabled then TeleAnnounce waits for valid command.
- The caller should dial 0 during dial tone.
- On giving the above command, the caller gets connected to all the paging zones.
- TeleAnnounce gives attention tone to both the caller and all the paging zones. This warrants the attention of the members in the paging zones.
- The caller can speak through to make the desired announcement.

Relevant Topics:

1. Operation of TeleAnnounce 28
2. Call Progress Tones 13
3. Terminating an Announcement 46

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Amplifiers and Speakers

The TeleAnnounce outputs unamplified audio signals. These signals need to be amplified before they could be heard on speakers. Different applications will need different type of amplifiers and speakers.

Following parameters can be considered while selecting Amplifiers and Speakers:

1. Output power in watts depending on the area to be covered.
2. Indoor-Outdoor site with climatic conditions.
3. Commercial or Industrial application.
4. Special safety constraints like flame-proofness etc.

Please note that amplifiers and speakers are not supplied by Matrix. They can be sourced from the open market. Manufacturers and their representatives can be contacted for further details.

However, www.ahujaradios.com can be consulted for more details.

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Announcement Time

What is this?

Announcement time is the maximum time for which an announcement can be made.

The TeleAnnounce loads this timer when the caller dials paging zone code.

In case the caller terminates the call by going on-hook and the TeleAnnounce fails to detect the error tone then the call will be terminated on expiry of this timer.

This timer prevents the input port getting hooked up for some erroneous condition and getting unusable.

This timer is programmable.

In case the announcement to be made is long then this timer should be programmed for a longer duration.

How to program?

Use following command to program Announcement Time:

22-Seconds

Where,

Seconds is in three-digit format from 000 to 999.

By default, Announcement time is 300 seconds.

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Applications of TeleAnnounce

Application 1: In a textile plant

In a textile unit, the production floors are very noisy. Normally, the production manager has to send a person to call a worker from the production floor. This is because even a telephone instrument does not serve the purpose, as the telephone ring is not audible enough in such a noisy environment. TeleAnnounce is very helpful in such conditions. The production manager has to dial the paging zone code and make an announcement. All workers working on production floor can easily hear the announcement and respond if the production manager requires them.

Application 2: At an Airport

At an Airport, different messages are to be announced for passengers waiting in different places like Arrival Hall, Departure Hall, Waiting hall, Checkin area, etc. Alternatively in case of emergency it is required to announce the same message to all the passengers. With TeleAnnounce at Airport, this becomes possible. Using TeleAnnounce has a distinct advantage: Since it can be connected behind a PBX, a person carrying a cordless extension of PBX can also make an announcement, he need not go to an announcement point at the Airport.

Application 3: In a Bank

With TeleAnnounce in Banks, bank officials can call the customer whom they have kept waiting simply by announcing their name rather than walking down the waiting hall or sending a office boy to call the customer from the waiting hall. TeleAnnounce can also help to play sweet background music in the bank. It can also be used to announce the token number. Thus, TeleAnnounce plays as a one-shot solution to all these requirements.

Application 4: In an Office

Many times in offices, the operator finds it difficult to locate a person to transfer a call meant for him. She keeps trying different stations. This is a very annoying condition for her. TeleAnnounce can rescue her of this agony. With TeleAnnounce in place, she can transfer the call to a most probable station where she expects the concerned person to be available. Then using TeleAnnounce she can page the concerned person. The paging message could be “Call for Mr. Anil on station 201” or “Attention Mr. Anil, please pick up your call from station 201”.

Application 5: In a residential complex

TeleAnnounce is used to control various devices like water pump, gate lights, garden lights, etc. These devices are connected to the control ports and can be switched ON/OFF locally or remotely.

Application 6: At a railway station

At a railway station, TeleAnnounce is used to control various devices like water pump, gate lights, garden lights, etc. as well as to page various messages. Devices to be controlled are connected to the ‘RELAY’ ports whereas ‘Ampli-speakers’ or ‘Amplifier + Speakers’ are connected to the PAS ports.

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Background Music

What's this?

TeleAnnounce provides a facility to play Background Music to all/desired paging zones.

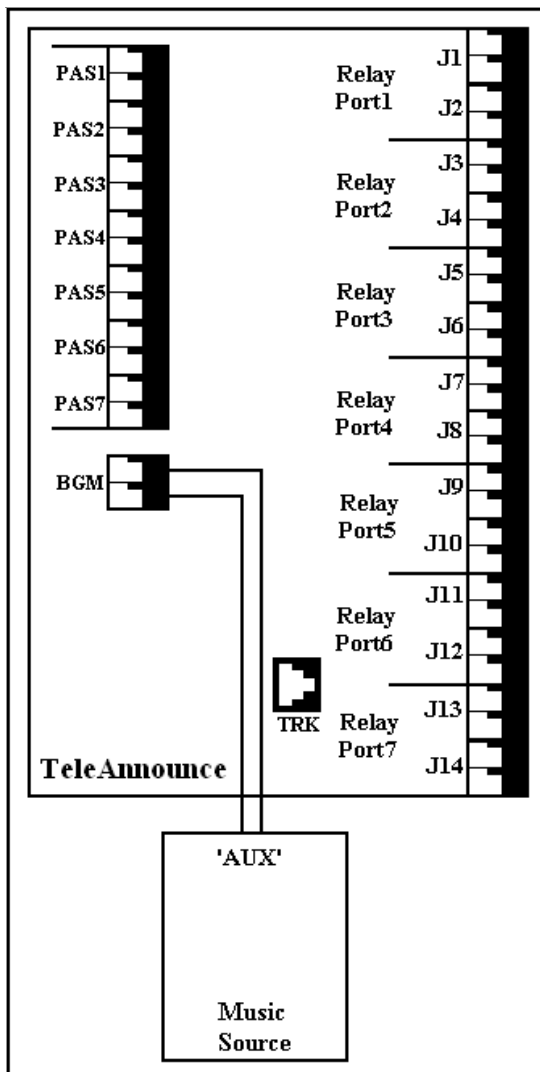
While the Background Music is being played, if any user calls TeleAnnounce and dials the paging code, the Background music is cut off and the announcement is heard in the paging zone.

On completion of the announcement, the Background Music resumes.

TeleAnnounce has a dedicated port marked 'BGM' to which desired external music can be fed. Please refer the "Troubleshooting - Component layout diagram" to locate the 'BGM' port on the card.

How to make connections?

- Connect an external source of music to the 'BGM' port as shown below in the figure. Please be sure to connect the pre-amplified output (generally marked AUX) of the music source. The external music source can be a Tape-recorder, Home theatre, Walkman, CD Player, TV, etc.
- The external music source should match with the technical specifications of the 'BGM' port. *Please note that the external music port is an audio input port and no electrical signal of higher value than the specified limit should be applied to this port. This may result in permanent damage to the system. Matrix warranty does not cover damages resulting from improper use.*
- The volume must be set to a level such that the music is not very low or very high.



The technical specifications of the 'BGM' port are:

Specification	Value
Interface Type	Audio signal
Frequency	300 Hz to 3400 Hz
Maximum voltage	0.707 Vrms across 600 Ohms
DC bias	Not more than 10V DC
Isolation	Internal Transformer
Source Impedance required	600 Ohms
Termination provided	600 Ohms

How to program?

Use following command to enable/disable BGM on the paging zone/s:

3-Page Zone Number-Code

Where,

Page Zone Number is from 1 to 7

Code	Meaning
0	Disable BGM
1	Enable BGM

By default, BGM is disabled on all the paging zones

Example:

To enable BGM on paging zones 2,4,5 and 6, dial

3-2-1

3-4-1

3-5-1

3-6-1

Important Points:

Case1: TeleAnnounce is programmed for Single Amplifier mode. When the user dials the paging code the BGM cuts off on all the paging zones even if the zone is not included in the announcement.

Case2: TeleAnnounce is programmed for Multiple Amplifier mode. When the user dials the paging code the BGM cuts off only on the paging zones selected for announcement. Rests of the zones are not affected and keep getting the BGM if programmed for.

Relevant Topic:

1. Troubleshooting 47

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Call Progress Tones

TeleAnnounce gives various tones in different situations. This is how TeleAnnounce responds to dialing of codes and commands. In all, TeleAnnounce has 5 tones.

Dial Tone

When a caller calls TeleAnnounce, he gets Matrix dial tone.

- Frequency : 360 Hz
- Sound : Toooooooooooo
- Cadence : Continuous

Dial tone stays for 7 seconds and thereafter the input port disconnects.

Attention Tone

This tone is derived from dial tone with cadence of one sharp pulse followed by off time.

- Frequency : 360 Hz
- Sound : Tuuuuuuuuut
- Cadence : 0.5 sec On, Continuous Off

Error Tone

Fast beeps. When some wrong operation is performed or the caller tries using a feature without proper access, he gets error tone. Error tone continues for 3 seconds followed by dial tone or programming tone as the case may be.

- Frequency : 360 Hz
- Sound : Too...Too...Too...Too
- Cadence : 250 msec on, 250 msec off, 250msec on, 250 msec off.

Programming Tone

Short beep followed by longer off duration repeated every second. TeleAnnounce prompts the caller to enter fresh commands during programming with this tone.

Programming tone remains for 7 seconds (fixed) followed by error tone for 3 seconds. Thereafter the system automatically exits the programming mode and the caller gets dial tone.

- Frequency : 360 Hz
- Sound : beep.....beep
- Cadence : 100 msec on, 900 msec off

Confirmation Tone

During programming, this tone indicates that valid command or code is received by the system. It matures in 3 seconds to programming mode.

- Frequency : 360 Hz
- Sound : beep... beep... beep....
- Cadence : 50 msec on, 50 msec off (repeated 30 times)

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Configuring TeleAnnounce

TeleAnnounce senses call progress tones (CPD) like error tone or busy tone for proper functioning. Generally, Central Offices (CO) exchanges or PBX manufacturers use busy tone or error tone to indicate call disconnection. These tones are generated from a basic tone. The basic tone might differ from PBX to PBX, one PBX model to another PBX model. Also this basic tone is not same for PBX and PSTN trunk lines. In order to avoid any sensing failures. Jumper J26 on the PCB helps in achieving this function. Please refer “Troubleshooting-Component layout diagram” to locate jumper J26.

Please put jumper J26 in following positions as per the table given below:

Product	Position of Jumper J26
Products having call progress tones with basic frequency	A-B
Products having call progress tones with basic frequency	B-C
Products having call progress tones with basic frequency	J26 does not play any role

In case of Matrix products the position of Jumper J26 should be as per the following table:

Product Name	Position of Jumper J26
Proton	B – C
Quantum S	J26 does not play any role
Quantum P	A – B
Vision S	B – C
Vision P	A – B
Team S	J26 does not play any role
Team P	A – B
Focus	J26 does not play any role
Empire	J26 does not play any role
Genesis	J26 does not play any role
Eternity	J26 does not play any role
Direct trunk line	J26 does not play any role

Important Point:

For discontinued products/models of Matrix, please call Matrix engineers for assistance or try with both the positions of jumper J26.

Relevant Topic:

1. Troubleshooting 47

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Contactors

Please note that contactors are not provided by Matrix. However website address given here might help the user to select and purchase contactors of proper ratings.

www.ad.siemens.de

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Default Settings

What's this?

Every system comes with pre-defined set of variables like passwords, timers, etc. These pre-defined settings are called default settings. The default value of each programmable parameter is mentioned in the respective sections. If the default settings suit your requirements then you may not even program the system and the system will work according to default settings.

When to use it?

Many times it happens that due to some programming error, the system does not work the way the user want. Also the user is not sure about the commands issued. This leads to a total mess-up. To come out of this, it is advisable to software default the system. However, since software default of the system can be done from the programming mode, the programming password should be known. If the user forgets the password then software default cannot be done and in that case the user should set the programming password to default value. Please refer "Passwords" for more details.

How to use it?

Enter programming mode.

Dial **18-Programming Password**.

Caller gets confirmation tone. Default settings as shown below in the table gets loaded.

Following table shows various default settings:

Parameters	Default settings
Accessibility to feature 'Access Password'	Disabled
Access Password	1234
Programming Password	1234
Amplifier Mode	Multiple
Delayed Answer time	00 second
Announcement time	300 seconds
Access of BGM to paging zones	Disabled for all zones

Relevant Topic:

1. Passwords 32

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Delayed Answer Time

What is this?

Delayed Answer time is the time after which the TeleAnnounce answers the call.

The TeleAnnounce loads this timer after 3-6 seconds of sensing the first ring. TeleAnnounce waits for 3-6 seconds to confirm the validity of the call.

How to program?

Use following command to program Delayed Answer Time:

21-Seconds

Where,

Seconds is in two-digit format from 00 to 99.

By default, Delayed Answer time is 00 seconds.

Relevant Topic:

1. Operation of TeleAnnounce 28

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Installation

Important Safety Instructions

- Never do telephone wiring during a lightening storm.
- Avoid using telephone other than a cordless type during an electric storm. There may be a remote risk of electric shock from lightening.
- Do not use the telephone, to report gas leaks if it is near to gas leak.
- Do not touch non-insulated telephone wires or terminals before disconnecting at the network interface.
- Do not install this product near water, for example near a bathtub, washing bowl, kitchen sink, laundry tub, swimming pool etc.
- Slots on enclosure are for proper ventilation. They will protect system from over-heating. Never cover slots.
- Never place this product on heated place or any other equipment.
- Never push objects of any kind inside this product. This may short-circuit various parts.
- Operate these products only with 230 V AC +/- 10%, 50 Hz power supply and if you are not sure about the supply voltage, contact authorized dealer. **It is advisable to give power through a good quality Constant Voltage Transformer (CVT).**
- Unplug this product from electric supply in following cases and contact authorized service personnel.
 - -Liquid spills on to the product.
 - -Product exposed to rain or water.
 - -Product does not operate normally by following operating instructions.
 - -Product exhibits unusual change in performance.
- Do not open the system in power-ON condition. Also do not plug/unplug any card/component in power-ON condition. This may damage the system. **Warranty does not cover such damages.**
- Hold the cards from the edges and not from the center so as not to touch the components or the solder side of the card.
- In an open system do not touch the legs of the IC's to see whether they are heated. Instead touch their body carefully to check it otherwise the static charge accumulated on our body might get discharged through the IC and consequently damage it.
- **It is recommended to connect proper telecom earth to the terminal marked 'ETH' on the TeleAnnounce PCB. This would protect TeleAnnounce from any heavy voltages on the input port.**

Preparation

Site Selection

- The system should generally be installed at a place equidistant from all the locations where PAS is installed. This reduces the cabling cost.
- The installation should preferably be at 3.5 feet height (approx.) in airy, dust free and moisture free place. An installation at this height makes preventive or curative maintenance task easy.
- It is advisable that the system should be installed away from any source of electromagnetic noise such as any radio equipment, heavy transformers, faulty electric chokes of tube-lights, any device having a faulty coil etc. This will reduce any problem arising due to electromagnetic effect.

Cabling

- Decide different locations where you want to have PAS installed and the shortest cabling route possible to that location.
- Always ensure that you have separate cable conduits for both electrical and telephone/paging cables.
- Take care that cables are not left open on the ground where they may get damaged due to entanglement in the foot or due to pressure from other heavy objects.
- Select good quality telephone cable (with 0.5mm conductor diameter) for internal cabling.
- Please avoid using multi-core cables. Use of single pair is recommended.

- For all over-head cabling, good quality drop wire must be used. In case you have any problem please take help of a wireman.
- Avoid single long length cables and at the same time keep number of joints to a minimum i.e. strike a balance between the two. This will help you to find out a cable fault easily.

Power Supply

- TeleAnnounce operates on 230V +/-10% AC supply. Arrange for a separate power point and switch, close to the system. Power Supply for the system must be separate from other heavy electrical loads like Air-conditioners, Heaters, Welding machines, Electrical motors and other such noise generating equipments.
- **If the supply is not stable, use of a good CVT is recommended.**

Earth (Ground)

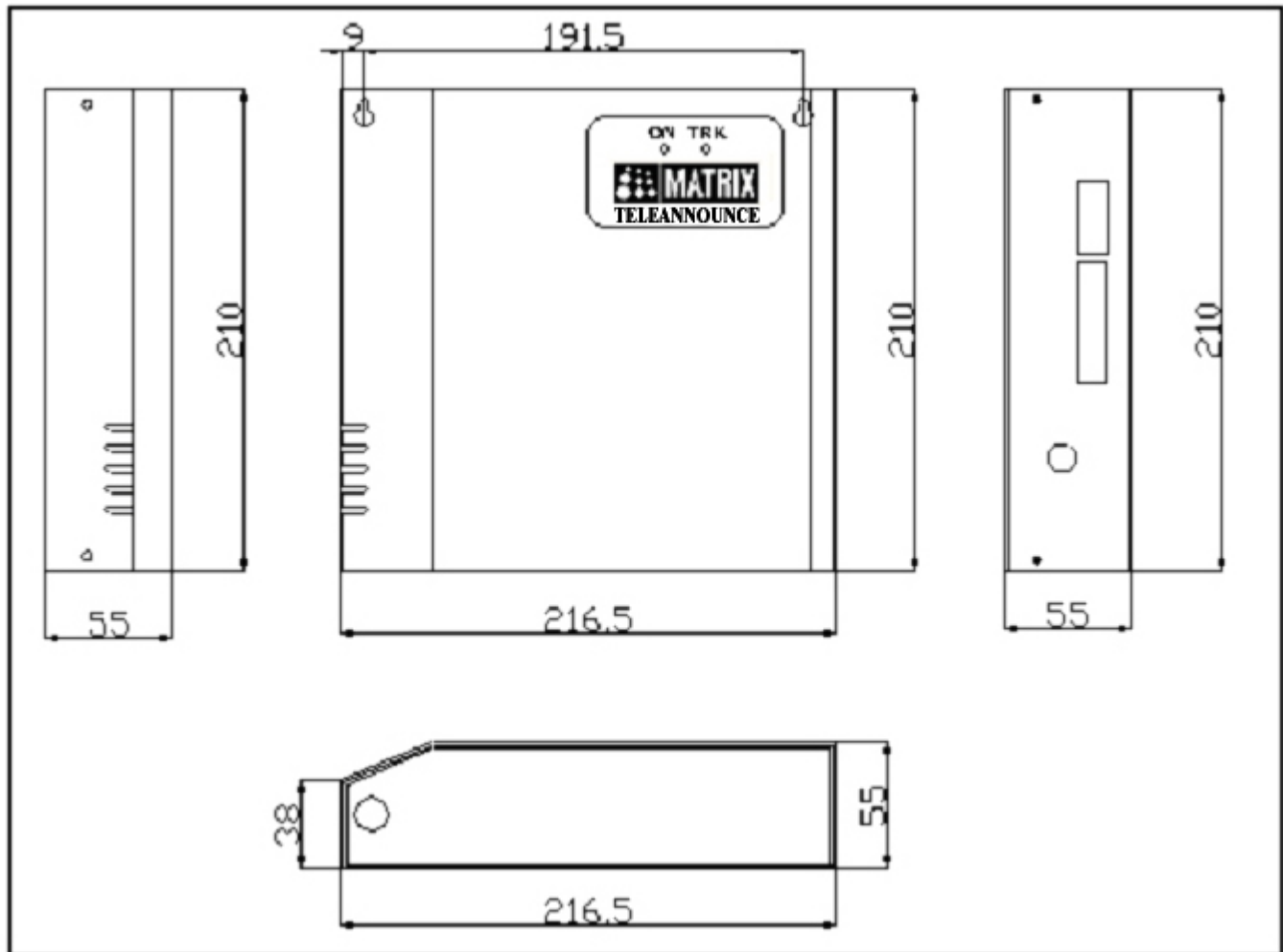
- Proper earth is vital for safety of the personnel and the system. Two separate earth paths are recommended:
 - Electrical earth** : The regular earth provided with the electrical wiring. This prevents electric shock to the personnel.
 - Telecom earth** : A separate earth to be provided to guard the system against heavy voltages due to thunderbolt, damage due to heavy voltage power line falling on the overhead extensions.

Installing the System

- Unpack the box. Get satisfied with the contents and the condition of all the parts. In case of short supply or damaged parts, please contact the source from where you purchased the system immediately.
- Don't power the system.
- Fix the system on the selected site. Please refer "TeleAnnounce Mechanical drawing" at the end of this topic for exact mechanical dimension and pitches of TeleAnnounce.
- Check the voltage at the power point from where the supply is to be accessed. It should be as specified. It is desirable to use a good quality power-conditioning device such as a CVT.
- Connect PAS to desired PAS output ports of TeleAnnounce.
- Tag each wire pair with respective PAS location.
- Connect the trunk line/PBX extension to the input port of the TeleAnnounce.
- Connect proper telecom earth to the 'ETH' terminal of the TeleAnnounce.
- Connect power cord of the system to the power supply. Ensure proper contacts.

Switching on the System

- Now switch on the system. The green LED marked 'ON' on the front panel turns ON. The red LED marked 'TRK' turns ON for 1 second, turns OFF for 1 second and then flashes thrice.
- Normal condition of the system: Green LED marked 'ON' remains ON.

TeleAnnounce Mechanical Drawing

All dimensions are in mm.

Relevant Topics:

1. Single Amplifier Mode 41
2. Multiple Amplifier Mode 24
3. PBX Application 34
4. PSTN Application 36
5. Relay Control 37
6. Configuring TeleAnnounce 14

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Introduction

TeleAnnounce is a multi-zone Paging system. It provides facility to page individuals or a group of people or both of them simultaneously. TeleAnnounce plays an important role in factories, railway stations, hospitals, schools, shopping complexes, residential complexes, airports, offices, exhibition halls, stadiums, shipyards, etc.

TeleAnnounce can also be used as control system. The control ports of the system can be used to control any equipment from anywhere in the world. This opens the floodgates in control applications.

TeleAnnounce can also be used for multi-zone paging and control applications simultaneously. To elaborate, it is possible to page few/all the page zones and control few/all devices connected to the control ports all at a time.

In short, TeleAnnounce serves as a:

- Paging system or
- Control system or
- Paging cum Control system

Both the features viz. paging and control can be used locally as well as remotely.



TeleAnnounce

Features of TeleAnnounce

- TeleAnnounce works on 230V, 50Hz Power Supply.
- TeleAnnounce has one input port.
- TeleAnnounce has seven 'PAS' output ports and seven 'RELAY' output ports.
- TeleAnnounce has one built-in external music port marked 'BGM'.
- External music can be fed to the 'BGM' port, which can be played back over the output ports as per the programming.
- TeleAnnounce has a dedicated terminal marked 'ETH' to which a proper telecom earth should be connected.
- Direct trunk line or an extension of a PBX can be connected to the input port of TeleAnnounce.
- Amplifier+Speakers/Amplispeakers can be connected to the 'PAS' output ports of TeleAnnounce for paging.
- TeleAnnounce also provides a facility to use single amplifier instead of using multiple amplifier + speakers.
- Control devices like Relays/Contactors can be connected to the 'RELAY' output ports of TeleAnnounce to control the various equipments.

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Making an Announcement

- Caller calls TeleAnnounce.
- TeleAnnounce senses the call. It verifies the validity of the call for 3-6 seconds. Meanwhile caller gets ring back tone from PSTN or PBX.
- TeleAnnounce answers the call.
- The caller gets dial tone.
- If the feature of access password is enabled then TeleAnnounce waits for valid access password.
- If the caller dials valid access password, the TeleAnnounce responds with dial tone else gives error tone for 3 seconds followed by dial tone.
- If the feature of access password is not enabled then TeleAnnounce waits for valid command.
- The caller should dial the page zone number/s during dial tone. Please refer “Single Zone Announcement”, “Multiple Zone Announcement” and “Sequential Announcement” for more details.
- On dialing the page zone number the caller gets connected to the speaker of the desired paging zone.
- TeleAnnounce gives attention tone to both the caller and the paging zone. This warrants the attention of the members in the paging zone.
- The caller can speak through to make the desired announcement.

Relevant Topics:

1. Delayed Answer Time 17
2. Passwords 32
3. Terminating an Announcement 46
4. Single Zone Announcement 44
5. Multiple Zone Announcement 27
6. Sequential Announcement 40

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Multiple Amplifier Mode

What's this?

- In this mode, a duo of one amplifier and one speaker is connected to a PAS port as shown in the figure.
- Such a duo can be connected to each of the PAS ports.
- Since more than one amplifier is connected, one on each port for each zone it is called Multiple Amplifier mode.
- An Ampli-speaker can also be connected instead of a duo of amplifier + speaker. Ampli-speakers with different specifications are easily available in the market.
- An ampli-speaker generally used with a computer for multimedia applications can be used to make announcements. Such ampli-speakers generally cover good enough space depending upon acoustic environmental condition.
- This mode has a distinct advantage of using amplifiers and speakers with different specifications as per the requirement.
- In this mode, it is possible to make announcement to individual Page Zone or to a group of Page Zone.
- In this mode, it is possible to use all the PAS ports for paging and all the RELAY ports for control applications both at the same time.

How to use it?

- To make announcement in all paging zones:

1	Call TeleAnnounce	Dial tone
2	Dial 0	Attention tone is issued to the caller and all paging zones
3	Start announcement when the attention tone stops	
4	Dial '#' to terminate	Input port is disconnected. Speakers go blank

- To make announcement in selective paging zone:

1	Call TeleAnnounce	Dial tone
2	Dial Paging Zone Number-*	Attention tone is issued to the caller and the selected paging zone
3	Start announcement when the attention tone	
4	Dial # to terminate announcement	Input port is disconnected. Speakers go blank

It is assumed that Page Zone number correspond to PAS Port number.

Example 1:

Make announcement in paging zone 6:

1	Call TeleAnnounce	Dial tone
2	Dial 6-*	Attention tone is issued to the caller and paging zone 6
3	Start announcement when the attention tone	
4	Dial # to terminate announcement	Input port is disconnected. Speakers go blank

It is assumed that paging zone 6 corresponds to PAS port 6.

Example 2:

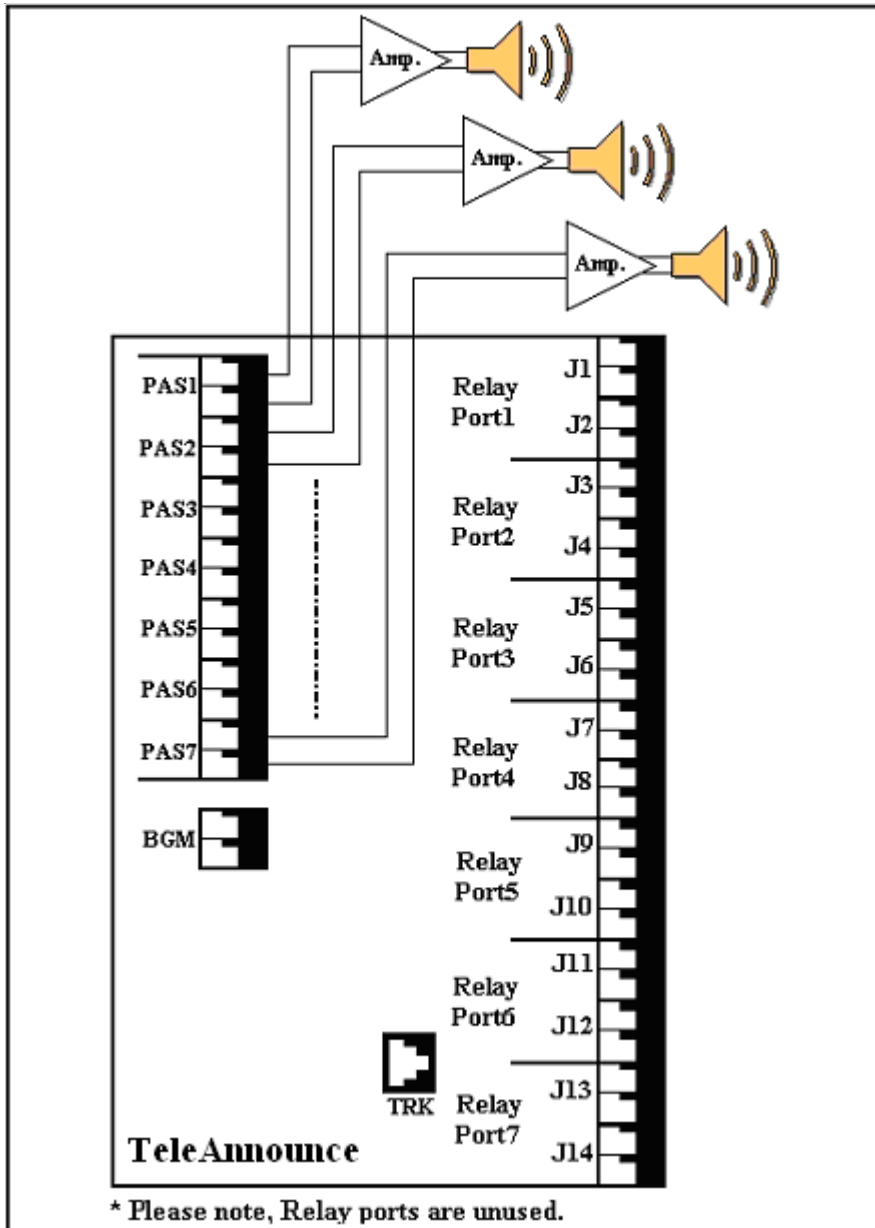
Make announcement in paging zones 1, 3, 5 & 7:

1	Call TeleAnnounce	Dial tone
2	Dial 1357 -*	Attention tone is issued to the caller and paging zones 1, 3, 5 and 7
3	Start announcement when the attention tone	
4	Dial # to terminate announcement	Input port is disconnected. Speakers go blank

It is assumed that paging zones 1,3,5 and 7 corresponds to PAS port 1,3,5 and 7.

How to make connections for PAS ports?

- Connect good quality external amplifiers and matching speakers to the PAS port/s as shown in the figure given below.
- Use shielded cable for connecting the system to the amplifier.



The specifications of the PAS ports are:

Specification	Value
Interface Type	Audio signal
Frequency	300 Hz to 3400 Hz
Maximum voltage	0.707 Vrms across 600 Ohms
Source impedance	600 Ohms
Termination Required	600 Ohms
DC bias	None
Isolation	Internal Transformer

How to program?

Use following command to program TeleAnnounce for Multiple Amplifier mode:

14-Code

Where,

Code	Meaning
0	Single Amplifier mode
1	Multiple Amplifier mode

By default, TeleAnnounce is programmed for Multiple Amplifier mode.

Example:

To program TeleAnnounce for Multiple Amplifier mode,

Dial 14-1 from programming mode.

Important Points:

- Paging may not work if the PAS port/s turns faulty.
- When the PAS port is not in use, the TeleAnnounce grounds the Amplifier input to the system ground thereby eliminating any possibility of noise pickup from the environment.
- *As the PAS port is audio output port, no electrical signal should be applied to this port. This may result in permanent damage to the system. Matrix warranty does not cover damages resulting from improper use.*

Relevant Topics:

1. Relay Control 37
2. Delayed Answer Time 17
3. Announcement Time 9
4. Amplifiers and Speakers 8
5. Call Progress Tones 13

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Multiple Zone Announcement

What's this?

If same message is to be paged in few page zones then caller should select desired page zones by dialing the respective zone numbers in a series followed by * and make an announcement.

How it works?

- Caller calls TeleAnnounce.
- TeleAnnounce senses the call. It verifies the validity of the call for 3-6 seconds. Meanwhile caller gets ring back tone from PSTN or PBX.
- TeleAnnounce answers the call.
- The caller gets dial tone.
- If the feature of access password is enabled then TeleAnnounce waits for valid access password.
- If the caller dials valid access password, the TeleAnnounce responds with dial tone else gives error tone for 3 seconds followed by dial tone.
- If the feature of access password is not enabled then TeleAnnounce waits for valid command.
- The caller should dial the page zone numbers in series during dial tone. For example if an announcement is to be made on page zones 2,4,5 and 6, then the caller should dial 2456 in a series followed by *.
- On giving the above command, the caller gets connected to the paging zones 2,4,5 and 6.
- TeleAnnounce gives attention tone to both the caller and the paging zones 2,4,5 and 6. This warrants the attention of the members in the paging zones.
- The caller can speak through to make the desired announcement.

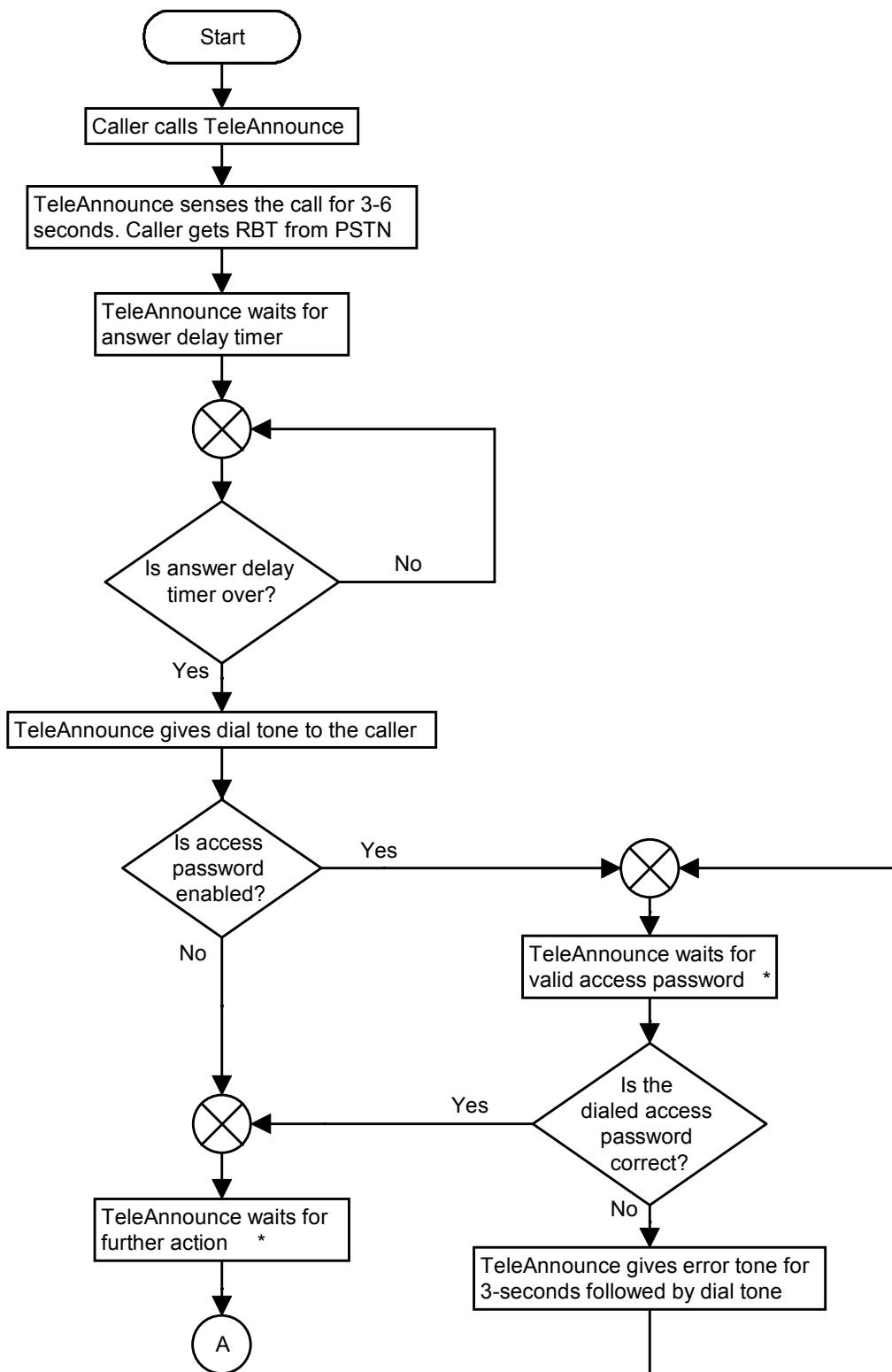
Relevant Topics:

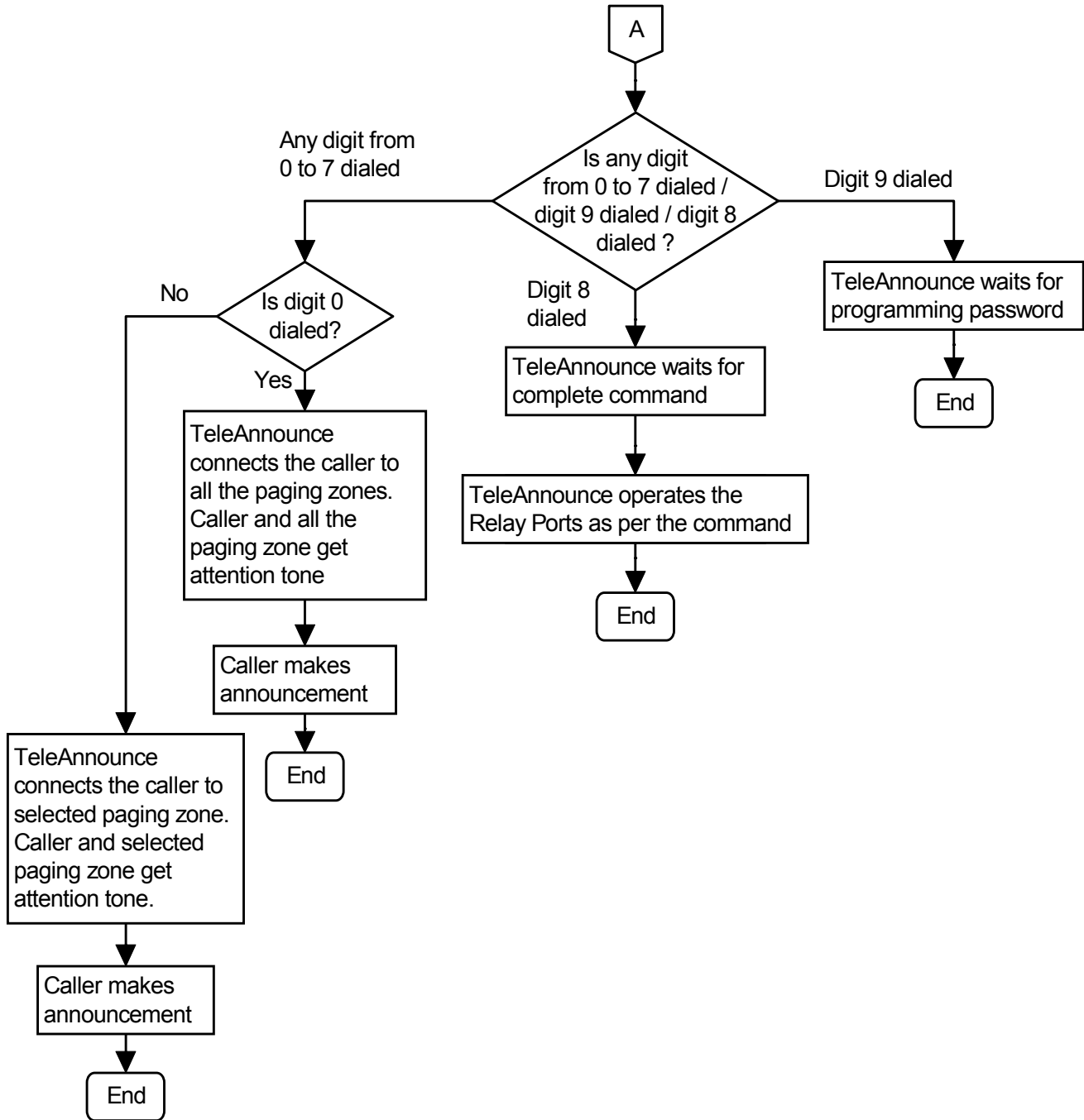
1. Operation of TeleAnnounce 28
2. Call Progress Tones 13
3. Terminating an Announcement 46

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Operation of TeleAnnounce

Following flowchart explains the operation of TeleAnnounce :





* At this point TeleAnnounce waits for 7 seconds. If no action is taken by the caller TeleAnnounce disconnects the call.

Relevant Topics:

1. Making an Announcement 23
2. Terminating an Announcement 46

=X=X=

Paging Cum Control Application

What's this?

- TeleAnnounce provides 7 PAS ports, which can be used for paging.
- TeleAnnounce also provides 7 relay ports, which can be switched ON/OFF by a command.
- Both these types of ports are functionally independent of each other and can be operated individually/simultaneously.
- However, for this application the TeleAnnounce should be programmed for Multiple Amplifier mode.
- It is possible to make announcement on individual PAS port or to a group of PAS group.
- It is possible to control seven different devices individually and/or simultaneously.
- It is also possible to use few/all the PAS ports for paging and few/all the RELAY ports for control applications both at the same time.
- The connections should be made as shown in the figure.

How to use it?

- To make announcement in all paging zones:

1	Call TeleAnnounce	Dial tone
2	Dial 0	Attention tone is issued to the caller and all paging zones
3	Start announcement when the attention tone stops	
4	Dial # to terminate announcement	Input ports di disconnected. Speakers to blank

- To make announcement in selective paging zone:

1	Call TeleAnnounce	Dial tone
2	Dial Page Zone Number-*	Attention tone is issued to the caller and the selected paging
3	Start announcement when the attention tone stops	
4	Dial # to terminate announcement	Input ports di disconnected. Speakers to blank

It is assumed that Page Zone Number corresponds to PAS port number

- To turn ON the device connected to a relay port:

1	Call TeleAnnounce	Dial tone
2	Dial 8-Relay Port Number-1	Caller gets attention tone

- To turn OFF the device connected to a relay port:

1	Call TeleAnnounce	Dial tone
2	Dial 8-Relay Port Number-0	Caller gets attention tone

How to program?

Use following command to program TeleAnnounce for Multiple Amplifier mode:

14-Code

Where,

Code	Meaning
0	Single Amplifier mode
1	Multiple Amplifier mode

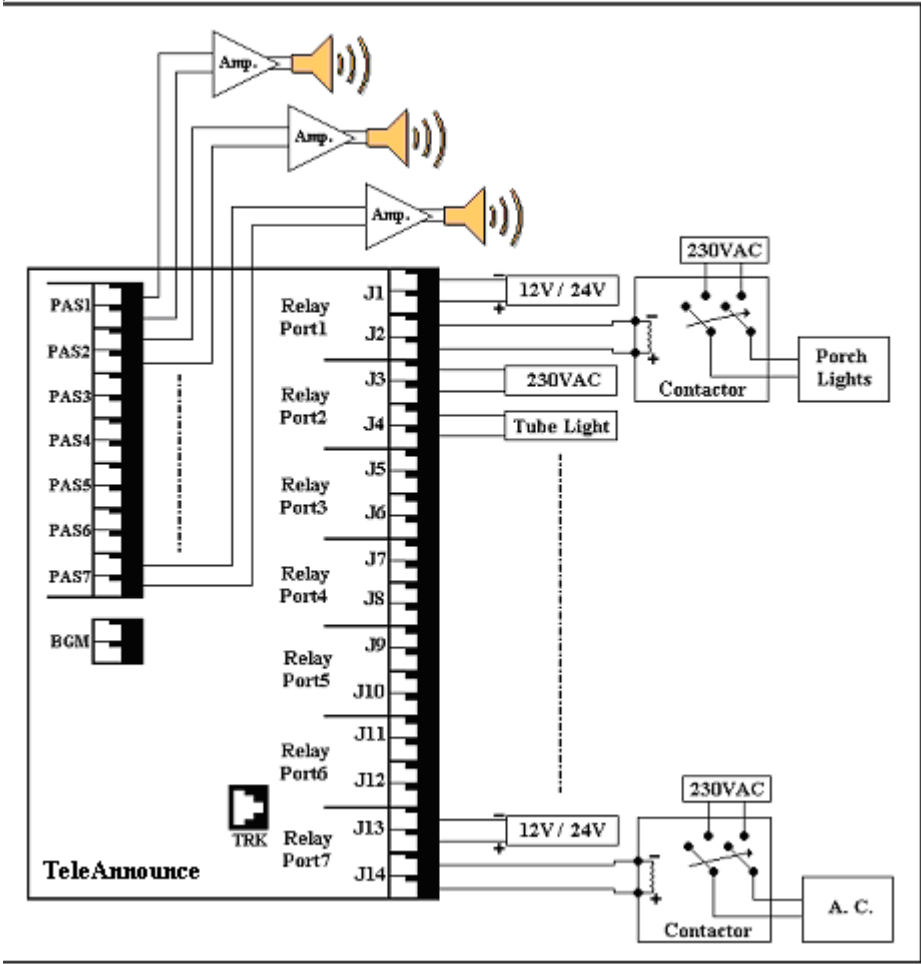
By default, TeleAnnounce is programmed for Multiple Amplifier mode.

Example:

To program TeleAnnounce for Multiple Amplifier mode,
Dial **14-1** from programming mode.

How to make connections for this Application?

Following figure shows how amplispeakers and various devices can be connected to the TeleAnnounce



Example:

Please refer figure given above.
To page zone 1, dial 1* and start speaking.
To turn ON Porch Light connected to RELAY port 1, dial **8-1-1**

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Passwords

What's this?

TeleAnnounce has two types of passwords viz. Programming Password and Access Password.

Programming Password:

It is a four-digit code.

It protects the TeleAnnounce from any unauthorised alterations of its settings.

The user should know the Programming Password to change the settings of the TeleAnnounce.

Access Password:

It is a four-digit code.

Access Password prevents misuse of the system by an unauthorized caller.

It is not mandatory to use Access Password. However, it is recommended to use Access Password in following cases:

- When it is desired to allow access of paging only to few callers.
- When a direct trunk line is connected to the TeleAnnounce.

How it works?

Access Password:

With Access Password enabled, when the caller calls TeleAnnounce, it gives dial tone to the caller and waits for the caller to dial Access Password.

If correct Access Password is dialed by the caller, the TeleAnnounce again gives dial tone to the caller and allows the caller to use system features.

If incorrect Access Password is dialed by the caller, the TeleAnnounce gives error tone for 3 seconds followed by dial tone.

This continues till the caller gives correct Access Password or disconnects the call. If the caller does not dial any digit for 7 seconds after getting dial tone, the TeleAnnounce disconnects the call.

Programming Password:

When the caller calls TeleAnnounce, the TeleAnnounce gives dial tone, waits for correct Access Password, if enabled.

During dial tone, if the caller dials 9 the TeleAnnounce understands that the caller wishes to enter programming mode and hence waits for correct Programming Password.

If the caller dials correct Programming Password, the TeleAnnounce responds with Programming tone and expects the caller to dial programming commands.

If the caller dials incorrect Programming Password, the TeleAnnounce responds with error tone for 3 seconds followed by dial tone.

How to change the Programming Password?

Use following command to change Programming Password:

13-XXXX

Where,

XXXX is a four-digit code from 0000 to 9999.

By default, Programming Password is 1234

Please note that this command is allowed only from programming mode.

How to change Access Password?

Use following command to change Access Password:

12-XXXX

Where,
XXXX is the four-digit code from 0000 to 9999.

By default, Access Password is 1234

How to use enable/disable the Access Password?

Use following command to enable/disable Access Password:

11-Code

Where,

Code	Meaning
0	Disable Access Password
1	Enable Access Password

By default, Access Password is disabled.

Forgot the Programming Password/Access Password?

The TeleAnnounce stores all the programming on the EEPROM. This includes the Programming password and also the Access Password. One cannot enter the Programming mode without the programming password. Hence if programming password is forgotten, no further programming is possible. Also one cannot access any of the system resources if one forgets Access Password.

To take care of such rare situations, the TeleAnnounce allows the user to set the programming password/Access Password to its default value. Following steps describe the procedure:

- Switch off the TeleAnnounce.
- Locate a mini jumper J28 on the PCB of the TeleAnnounce. (Please refer “Troubleshooting-Component layout diagram”)
- In normal working conditions, the jumper J28 is in B-C Position
- Set this Jumper to A-B position.
- Switch ON the TeleAnnounce.
- Wait for 15 seconds.
- Switch OFF the TeleAnnounce.
- Restore the jumper J28 to its original position (B-C).
- Switch ON the TeleAnnounce.
- The Programming Password and Access Password both change to its default value i.e. 1234.
- Also, the Access Password gets disabled.
- Enter programming mode by dialing 9-1234.

Important Points:

- It is recommended to change Programming Password/Access Password at regular intervals to avoid misuse of the system.
- It is recommended to note down the Programming Password.
- It is also necessary to inform the changed Access Password to all the users to avoid any inconvenience.

Relevant Topics:

1. Operation of TeleAnnounce 28
2. Troubleshooting 47

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PBX Application

What's this?

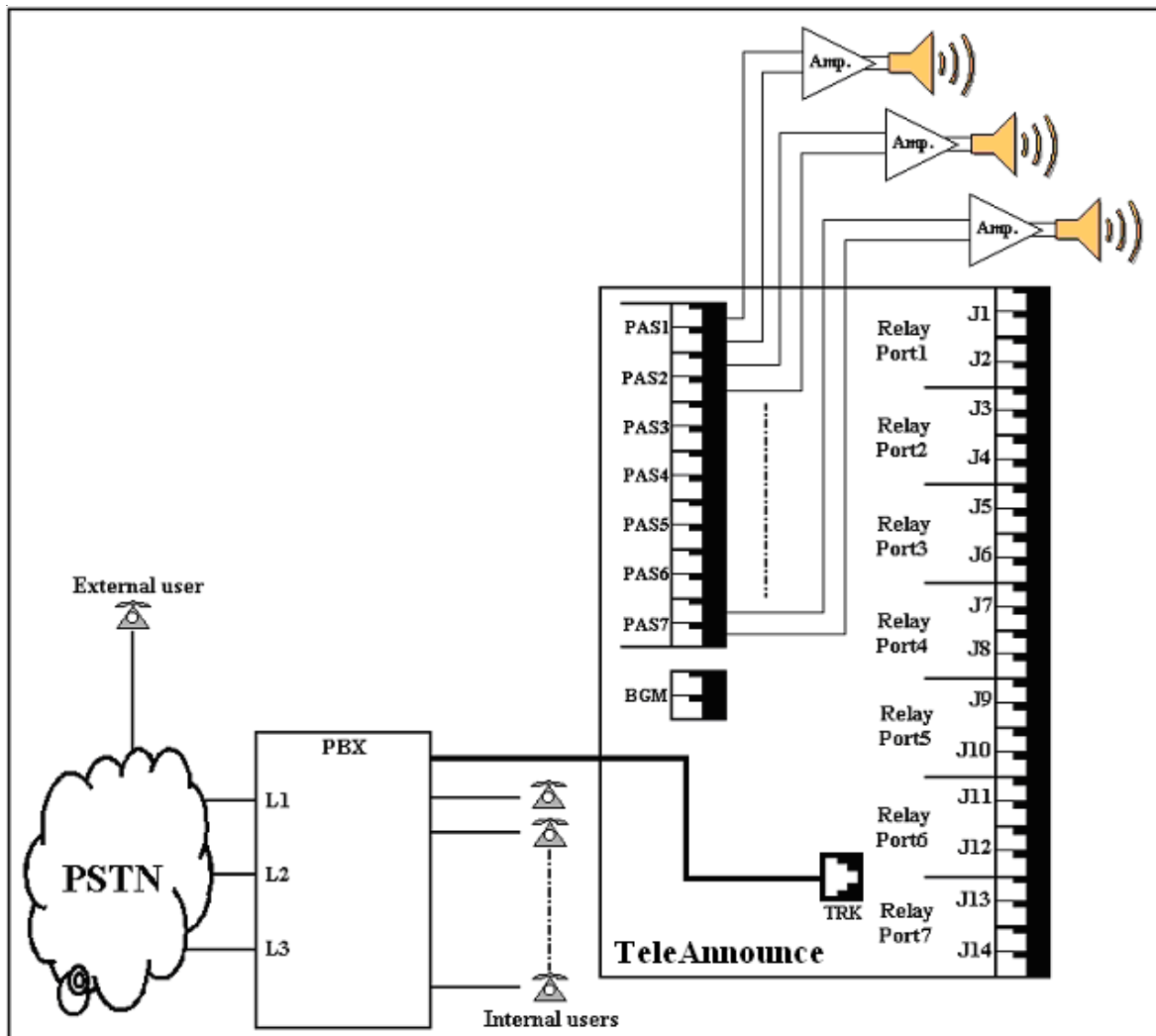
TeleAnnounce can be connected to any extension of a PBX as shown below in the figure. With TeleAnnounce connected to an extension of a PBX, two types of the caller can page:

- Any extension of the PBX.
- External caller using DID facility of the PBX.

Using the TeleAnnounce connected to a PBX is the most popular way.

How to connect?

Following figure shows how to connect TeleAnnounce to a PBX.



Relevant Topics:

1. Installation 18
2. Making an announcement 23
3. Terminating an Announcement 46

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Programming the TeleAnnounce

TeleAnnounce can be programmed as per the applications. TeleAnnounce can be programmed from the programming mode.

Steps to enter programming mode:

1	Call TeleAnnounce	Dial tone
2	Dial Access Password (if enabled) or skip this step	Dial tone
3	Dial 9-Programming Password	Programming tone

By default, Programming Password is 1234.

Steps to exit programming mode:

1	Programming tone	
2	Dial 9	Dial tone

The Programming Sequence

It is advisable to program TeleAnnounce in the following sequence. One may skip undesirable features programming.

1. Program the TeleAnnounce for single amplifier application or multi amplifier application.
2. Enable Access password (If required)
3. Change the Access password.
4. Program Announcement time
5. Program Delayed answer time
6. Change the Program password
7. Enable BGM on desired page zones (If this feature is used)

Relevant Topics:

1. Passwords 32
2. PSTN Application 36
3. PBX Application 34

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PSTN Application

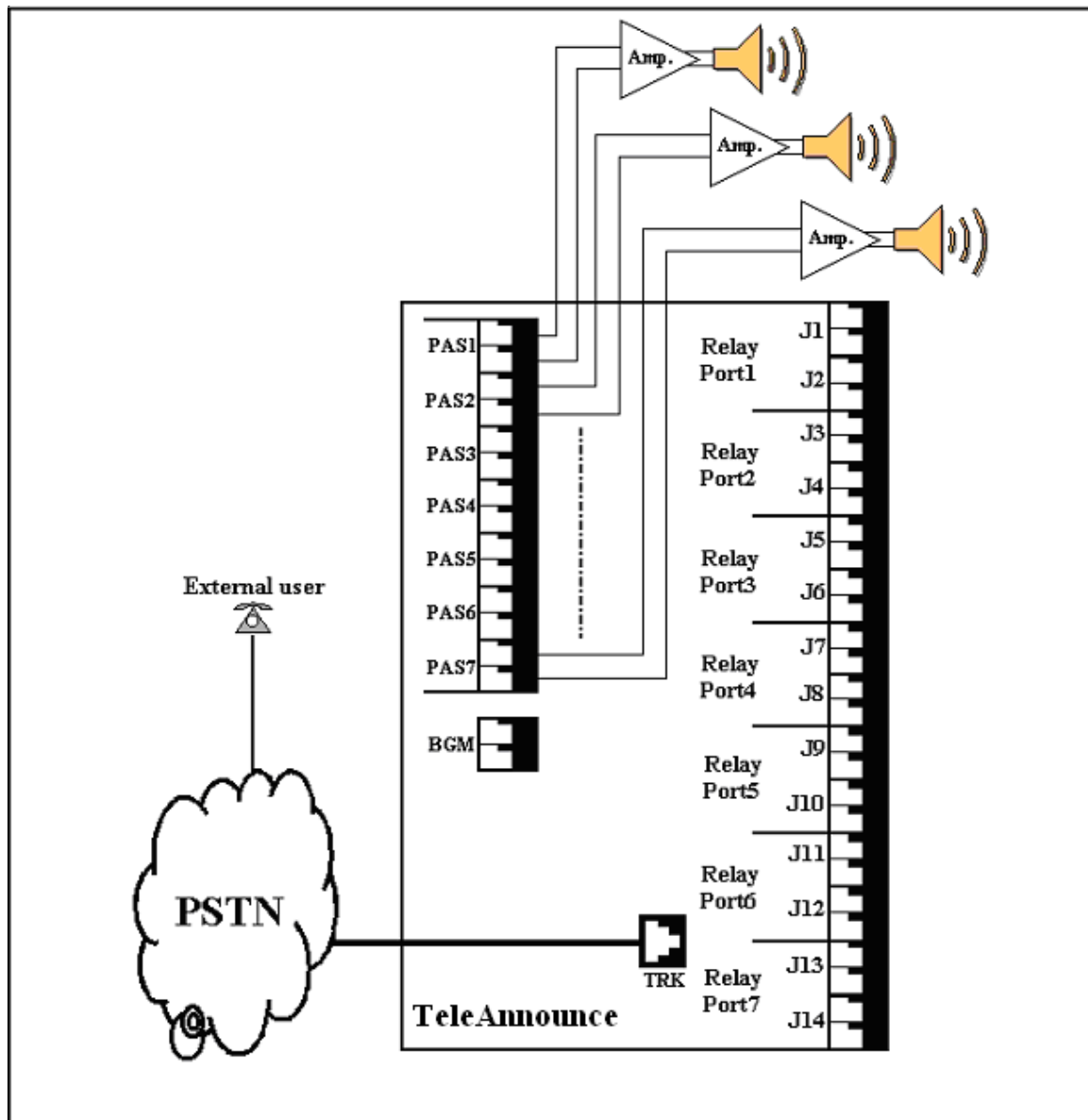
What's this?

TeleAnnounce can be directly connected to a direct trunk line coming from PSTN.

Since one trunk line is dedicated for this application, all the users can be given a definite telephone number if they want to page from remote location.

How to connect?

Following figure shows how to connect TeleAnnounce to a direct trunk line.



Relevant Topics:

1. Installation 18
2. Making an announcement 23

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Relay Control

What's this?

- TeleAnnounce provides 7 relay ports, which can be switched ON/OFF by a command.
- TeleAnnounce can be used to control seven different devices individually and/or simultaneously using these relay ports. This opens the floodgates of control applications.
- The external devices that can be operated by these relay ports should conform to the specifications of these ports.
- In practical use, a load of 80-100W like a fluorescent tube-light, incandescent lamp, etc. can be operated directly through these ports without the need of a contactor.
- If heavy-duty devices like a 3-phase water pump, Air-conditioner, neon lamps, etc. is to be operated through these ports then a contactor of adequate rating should be used. Please refer "Contactors" for more details.
- TeleAnnounce remembers the state of relay during power failure. Suppose, a water pump is being controlled using this feature and if while it is running, power failure occurs then the operator need not turn the water pump again on power restoration. TeleAnnounce will retain the last state and will switch ON the water pump on power restoration.
- For this application, the TeleAnnounce should be programmed for Multiple Amplifier mode.

How it works?

- When the caller calls TeleAnnounce and issues a command to turn ON the relay, the coil of the relay gets energized and closes the contact, which otherwise is normally open. This closes the path as which in turn, turns ON the device connected to the port (like a tube light) or activates the coil of contactor connected to it.
- Likewise when the caller calls TeleAnnounce and issues a command to turn OFF the relay, the coil of the relay gets de-energized and opens the contact. This opens the path, which in turn, turns OFF the device connected to the port.

How to program?

Set the TeleAnnounce in Multiple Amplifier mode using following command:

14-Code

Where,

Code	Meaning
0	Single Amplifier mode
1	Multiple Amplifier mode

Example:

To program TeleAnnounce for Multiple Amplifier mode,
Dial **14-1** from programming mode.

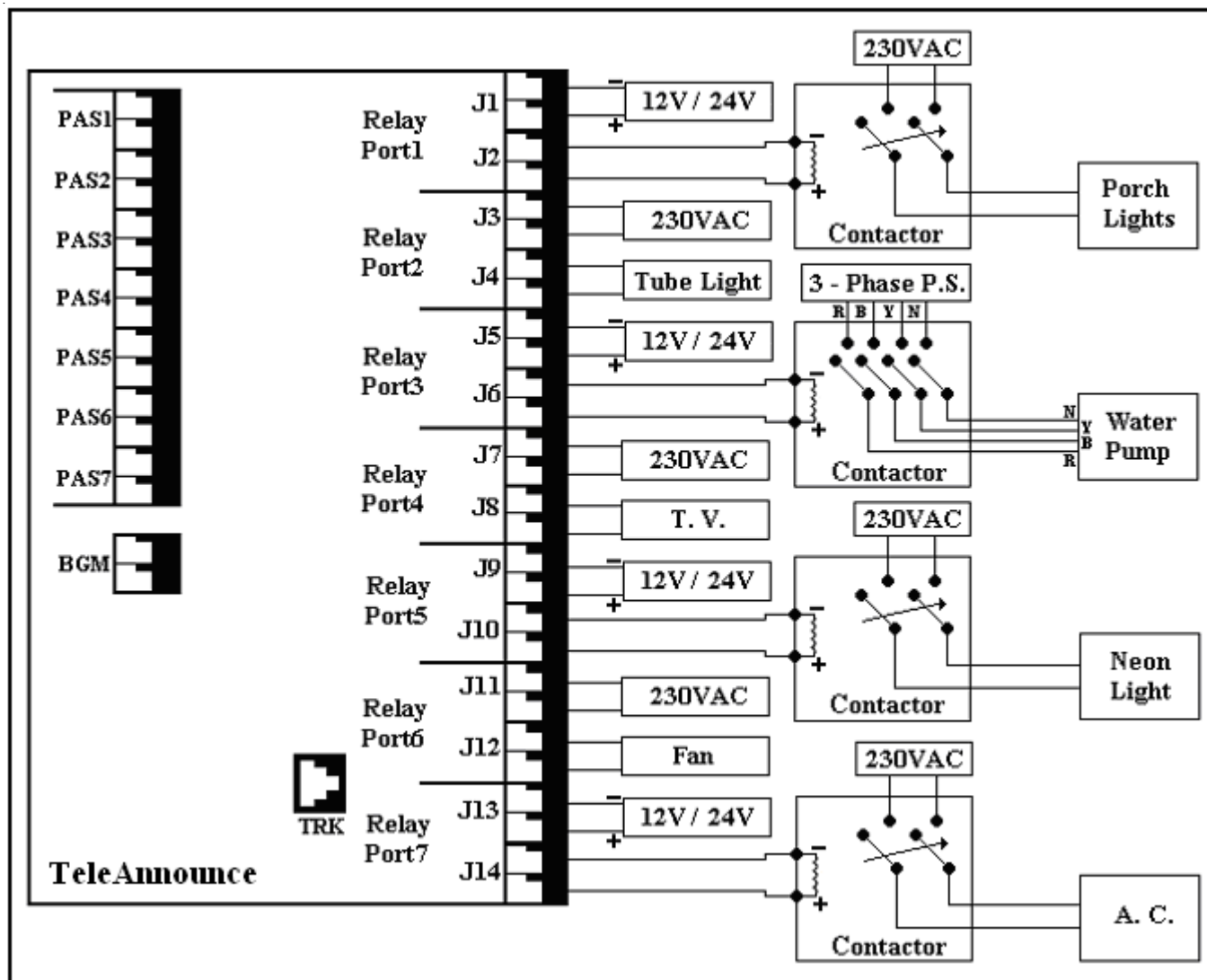
Technical specifications of relays used in TeleAnnounce:

Contact arrangement	1 (Normally Open)
Contact Rating (Resistive load)	24 VDC @2A, 120VAC @1.0A
Maximum switching voltage	120V AC, 60V DC
Operate time	10 ms
Release time	10 ms
Expected electrical life	100,000 operations
Expected mechanical life	10,000,000 operations

How to Connect external devices to the relay ports?

Following figure shows how various devices can be connected to the TeleAnnounce

As shown in the figure, devices that draw power less than 100W like fluorescent tube light, TV, Fan, etc. can be directly connected to the relay port whereas devices drawing more current like Neon glow signs, Water Pumps, AC, etc. can be connected through a heavy duty relay (contactor).



How to use it?

- To turn ON a relay port:

1	Call TeleAnnounce	Dial tone
2	Dial 8-Relay Port Number-1	Confirmation tone

- To turn OFF a relay port:

1	Call TeleAnnounce	Dial tone
2	Dial 8-Relay Port Number-0	Confirmation tone

Applications:

Please refer the figure. It depicts a condition wherein all the relay ports are used for control purpose. To turn ON/OFF a device respective code should be dialed from the dial tone.

To turn ON the Porch lights, dial **8-1-1**

To turn OFF the Air conditioner, dial **8-7-0** and so on.

Relevant Topic:

1. Contactors 15

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Sequential Announcement

What's this?

Different messages can be paged in different page zones one by one.

The caller need not call TeleAnnounce again and again to select different page zones.

The caller simply has to select a page zone, make an announcement, remain in the paging mode by terminating the announcement by dialing 0, select another page zone and make an announcement.

How it works?

- Caller calls TeleAnnounce.
- TeleAnnounce senses the call. It verifies the validity of the call for 3-6 seconds. Meanwhile caller gets ring back tone from PSTN.
- TeleAnnounce answers the call.
- The caller gets dial tone.
- If the feature of access password is enabled then TeleAnnounce waits for valid access password.
- If the caller dials valid access password, the TeleAnnounce responds with dial tone else gives error tone for 3 seconds followed by dial tone.
- If the feature of access password is not enabled then TeleAnnounce waits for valid command.
- The caller should dial the page zone number during dial tone.
- On dialing the page zone number followed by *, the caller gets connected to the respective paging zone.
- TeleAnnounce gives attention tone to both the caller and the paging zone. This warrants the attention of the members in the paging zone.
- The caller can speak through to make the desired announcement.
- The caller need not terminate the call by dialing '#'. Instead he should dial '0' to come out of the paging mode.
- The caller again gets dial tone.
- The caller can now again dial another page zone number followed by * and make a different announcement in the another page zone.
- This way different messages can be paged to different page zones in a single call. Caller need not call again and again to page in different page zones.

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Single Amplifier Mode

What's this?

- In single amplifier mode, more number of speakers can be connected to the same amplifier using relay ports as shown in the figure.
- Since only one amplifier is used to which more number of speakers are connected it is called Single Amplifier mode.
- This mode has a distinct advantage: Despite using only one amplifier, different announcements can be made by selecting different paging zones individually or selecting more than one paging zone.
- In this mode, it is possible to make announcement in individual paging zone or in few/all paging zones simultaneously.
- The Amplifier can be connected to any of the PAS ports.
- It is not possible to use control applications in this mode.

How to use it?

- To make announcement in selective paging zones:

1	Call TeleAnnounce	Dial tone
2	Dial Paging Zone Number -*	Attention tone is issued to the caller and in the selected paging
3	Start announcement when the attention tone stops	
4	Dial # to terminate announcement	Input port is disconnected. Speakers go blank

It is assumed that Page Zone Number corresponds to Relay Port Number.

Example:

Make announcement in paging zones 3,5 and 7.

1	Call TeleAnnounce	Dial tone
2	Dial 357 -*	Attention tone is issued to the caller and in the selected paging
3	Start announcement when the attention tone stops	
4	Dial # to terminate announcement	Input port is disconnected. Speakers go blank

How to make connections for PAS port?

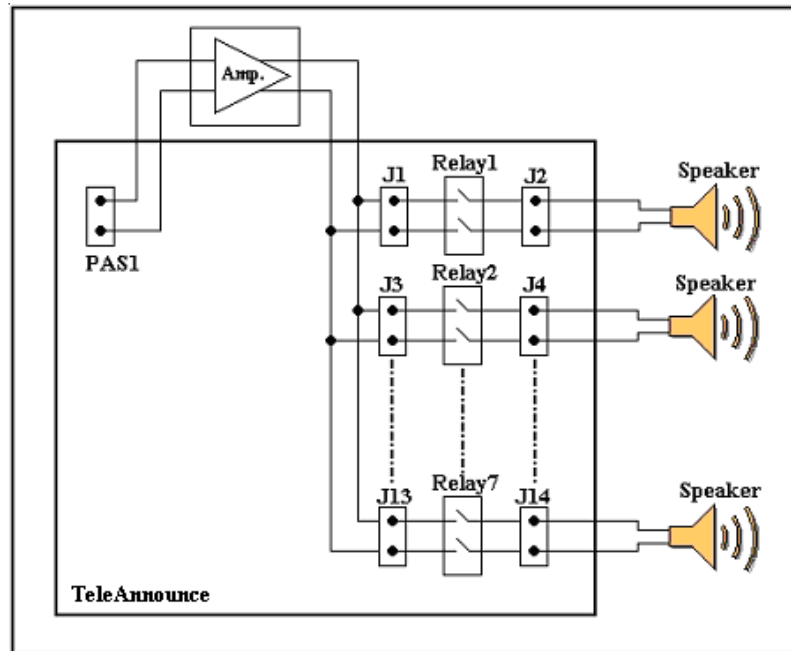
- Connect good quality external amplifiers and matching speakers to the port as explained with the help of the figures shown on the next page.
- Use shielded cable for connecting the system with the amplifier.

The specifications of the PAS ports are:

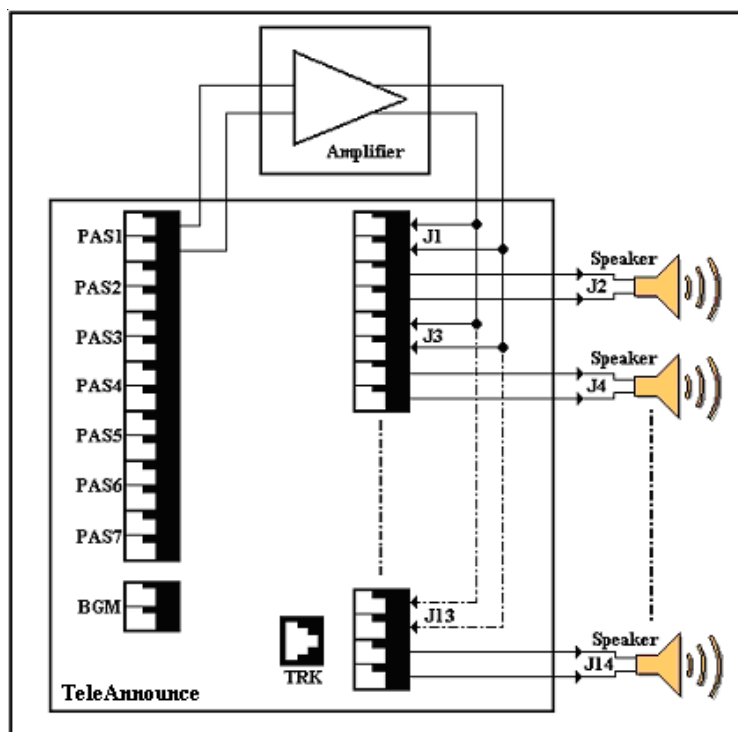
Specification	Value
Interface Type	Audio signal
Frequency	300 Hz to 3400 Hz
Maximum voltage	0.707 Vrms across 600 Ohms
Source impedance	600 Ohms
Termination Required	600 Ohms

DC bias	None
Isolation	Internal Transformer

The figure shown below is the block diagram of single amplifier mode. It shows how the TeleAnnounce works in single amplifier mode. For simplicity, amplifier is connected on PAS1. The amplifier can be connected to any of the PAS ports from PAS2 and PAS7.



The figure shown below shows the connections to be made if the TeleAnnounce is to be used in single amplifier mode



How to program?

Use following command to program TeleAnnounce for Single Amplifier mode:

14-Code

Where,

Code	Meaning
0	Single Amplifier mode
1	Multiple Amplifier mode

By default, TeleAnnounce is in Multiple Amplifier mode.

Example:

To program TeleAnnounce for Single Amplifier mode,
Dial **14-0** from programming mode.

Important Points:

- Paging may not work if the PAS port/s turns faulty.
- *As the PAS port is audio output port, no electrical signal should be applied to this port. This may result in permanent damage to the system. Matrix warranty does not cover damages resulting from improper use.*

Relevant Topics:

1. Relay Control 37
2. Delayed Answer Time 17
3. Announcement Time 9
4. Amplifiers and Speakers 8

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Single Zone Announcement

What's this?

Caller can select an individual page zone and make an announcement.

How it works?

- Caller calls TeleAnnounce.
- TeleAnnounce senses the call. It verifies the validity of the call for 3-6 seconds. Meanwhile caller gets ring back tone from PSTN or PBX.
- TeleAnnounce answers the call.
- The caller gets dial tone.
- If the feature of access password is enabled then TeleAnnounce waits for valid access password.
- If the caller dials valid access password, the TeleAnnounce responds with dial tone else gives error tone for 3 seconds followed by dial tone.
- If the feature of access password is not enabled then TeleAnnounce waits for valid command.
- The caller should dial the page zone number followed by during dial tone.
- On dialing the page zone number followed by *, the caller gets connected to the speaker of the desired paging zone.
- TeleAnnounce gives attention tone to both the caller and the paging zone. This warrants the attention of the members in the paging zone.
- The caller can speak through to make the desired announcement.

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Technical Specifications

Control System : Micro-Controller based Stored Program Control (SPC), CMOS design
Switching : Space Division using CMOS, cross point switches

Input Port : FXO Type-1 no.
Output Ports : **Signal ports** : 7 nos.
Control ports : 7 nos.
BGM port : 1 no.

The technical specifications for the Control ports are given below:

Specification	Value
Contact arrangement	1 (Normally Open)
Contact Rating (Resistive load)	24 VDC @2A, 120VAC @1.0A
Maximum switching voltage	120V AC, 60V DC
Operate time	10 ms
Release time	10 ms
Expected electrical life	100,000 operations
Expected mechanical life	10,000,000 operations

The technical specifications for the Signal/BGM ports are given below:

Specification	Value
Interface Type	Audio signal
Frequency	300 Hz to 3400 Hz
Maximum voltage	0.707 Vrms across 600 Ohms
DC bias	Not more than 10V DC
Isolation	Internal Transformer
Source Impedance required	600 Ohms
Termination provided	600 Ohms

Power Supply : 230V, +/- 10%, 50Hz AC

Dimensions : 210 mm X 191.5 mm X 55 mm (L X B X H)

Weight : 1.0 kg

Ambient Conditions : 0-45°C

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Terminating an Announcement

What's this?

The caller can terminate the announcement in one of the following ways:

1. Dialing '#'
2. Dialing '0'
3. Going On-hook.
4. Announcement time expiry

How it works?

When the caller dials '#', TeleAnnounce senses this code, cuts off the speaker immediately and terminates the call.

When the caller dials '0', the caller is disconnected from the paging zone. The speakers go silent whereas the caller gets dial tone. The caller is now free to make another announcement or change any programming.

When the caller simply goes on-hook, the TeleAnnounce senses for disconnection from the PSTN or the PBX. This takes 2-4 seconds. Meanwhile the TeleAnnounce confirms for valid error tone, error tone is heard on the speaker. This is undesirable but it is an unavoidable condition. Hence it is recommended that the caller disconnects the announcement always by dialing '#'.

TeleAnnounce also has an Announcement disconnection timer. In case the caller goes on-hook without dialing '#' and the system fails to sense error tone then the call is disconnected after this timer. During this time error tone will be heard on the speaker. This timer is loaded as soon as the caller dials the paging zone code. However with Announcement time in place, the speakers will get cut off even if the announcement is not actually over. In such case the caller will have to make another call to complete the announcement or increase the Announcement time as per the application.

Relevant Topics:

1. Announcement Time 9
2. Making an Announcement 23

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Troubleshooting

TeleAnnounce is not turning ON

- Please check the power
- Please check the main fuse (315mA)
- Please check the MOV (275/14)
- Please check for loose connection of PT3 connector
- Please contact authorised Matrix dealer

On calling TeleAnnounce, it does not allow any operation

- Check whether Access Password is enable
- Issue correct Access Password
- Get Access Password to default using the procedure in ‘Programming Password’.

TeleAnnounce is not working in Single Amplifier Mode

- Please check PAS1 port.
- Please check the amplifier.
- Please check for any open in the wiring

There is lot of hum on PAS5 port.

- Please check PAS5 port.
- Please check the amplifier.
- Please check for any open in the wiring
- Please check for any mismatch of speaker and amplifier.

Relay Ports does not operate

- Please program the TeleAnnounce for Multiple Amplifier mode.
- Please check Relay Ports.
- Please check the connections made.
- Please check for the polarity. Refer to the figure shown in topic “Relay Control”.
- Please check for any open in the wiring

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