

# SENAO



## SP-428 Series

**Fully Integrated Wireless PABX in DECT System**

**User Manual**

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## 1. Introduction

This chapter provides general information of the system, including system capacity and specification.

### 428 Series System Configuration

The *428 series* system is a wireless telephone system, which integrates DECT cordless phones and analogue corded phones with PBX function. The whole system configuration is described in Figure 1-1. This system allows connection with 4 PSTN lines (expandable up to 8 PSTN lines), 2 SLTs (Single Line Telephones), 28 DECT handsets and other optional functions, such as DISA (Direct Inward System Access)/DTAM (Digital Tapeless Answering Machine), door-phone and relay control.

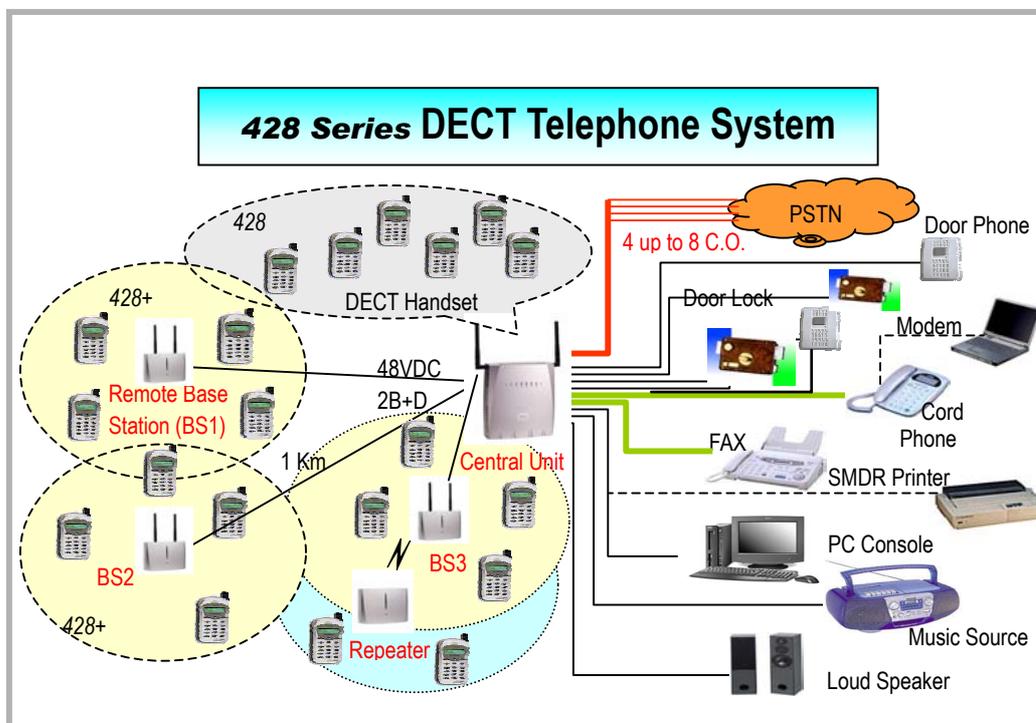


Figure1-1 System configuration

For the enhanced model, 428 plus system, it provides extra 3 Remote Base Stations to increase the system capacity and radio coverage. The total simultaneous users of DECT handsets are also extended up to 18 .

To overcome dead zone area of communication, it also can be equipped with repeaters that have wireless connections to Remote Base Station, just as the repeater and handset have wireless connection.

In compliance with DECT GAP(Generic Access Profile), *428 series* system can be inter-operable with the DECT handsets of other brands.

The *428 series* system is divided into *428* single cell system (called *428*) and *428 plus* multi-cell system(called *428+*). The Central Unit of *428* system has basic capacity of

- 4 trunks to PSTN.(expandable up to 8)
- 2 SLTs to analogous facilities, such as telephone 、 fax and modem.
- One base built in and up to 28 registered handsets and 6 handsets simultaneous conversation to be supported.
- SMDR helps to analyze and control costs by recording and printing outgoing messages
- Paging to external speakers and external hold music sources.
- General PBX functions including DISA, DTAM, and caller ID.

To expand its capabilities, the system can be equipped with piggyback board to support

- 2 Door phones and 3 relays interface. Provide home security with using SLT or handset to communicate with visitors.
- Additional 4 trunks card for increasing PSTN trunk lines of the system up to 8 lines.

## 1.1 System Specification

| Model No.   | <i>428</i> system                             | <i>428+</i> system |
|---|---|--------------------|
| Description                                       |   |                    |
| Number of DECT Handsets                           | 28  | 28                 |
| Number of Single Line Telephones                  | 2   |                    |
| Trunk Port  | 4, expandable up to 8                         |                    |
| RS-232  | 1   |                    |
| DISA Voice  | 1 min.  |                    |
| Voice Mail (DTAM)                                 | 100 min                                       |                    |
| Base-station Numbers                              | 1   | 4                  |
| Door Phone Interface                              | 2(additional)                                 |                    |
| Relay Control                                     | 3(additional)                                 |                    |
| Caller ID   | DTMF/FSK                                      |                    |
| Auto Fax Switch                                   | 1   |                    |
| Direct Modem Switch                               | 1   |                    |
| Power Failure Transfer                            | 1   |                    |
| Music Input Interface                             | Input Impedance: 10Kohms, Input Level 0.7Vmax |                    |
| External Broadcasting Interface                   | Output impedance: 600Ohms, Output Level: 0.7V |                    |
| Internal Battery (mounted on the Main Board)      | Voltage : 3VDC                                |                    |
| External Battery (to install outside the cabinet) | Voltage : 24VDC 7.0 Ah                        |                    |

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|                                 |   |
|---------------------------------|---|
| Power Requirement               | 110 – 240Vac 50Hz-60Hz 1.5Amax<br>220V AC10% 50Hz |
| Temperature (Operating)         | 0 ~ 40℃   |
| Humidity (Relative)             | 30% ~ 90%   |
| Reg. Phone Line Loop Resistance | Country adapted                                   |
| Dimension (mm) ( net )          | 340(L)x268(W)x88(H)                               |
| Weight (Kg)                     | 2.3   |

## 1.2 System Functions

- Alarm Clock
- Auto Busy Redial
- Auto Trunk Line Hunting
- Broker's Call
- Call Conference
- Call External/Intercom
- Call Forward
- Call Hold
- Call Park
- Call Pick-up
- Call Transfer
- Caller ID
- Call Screening
- Day/Night Service
- DND (Do Not Disturb)
- DISA
- Door Phone/Door Lock
- DTAM (Digital Tapeless Answering Machine)
- Flash Time Setting
- Flexible Ringing Assignment
- Group Management
- Hot Line
- Idle Station Hunting
- Intercom Auto Rely
- Intercom Non-blocking
- Last Number Redial
- Line Reservation/Queuing
- Listen to Background Music
- Long Speech Warning/Restriction
- Message Waiting
- Night Trunk Line Transfer
- Override: Conversation Intrusion
- Override: DND

- Broadcasting
- Power Failure Phones
- Private Line
- Pulse/DTMF Dial Conversion
- Real Time Clock Setting
- Relays
- Station Lock
- SMDR (Station Message Detail Record)
- Station Ring Type Setting
- Access Codes Assignment
- Password Assignment
- Toll Password
- Toll Restriction
- Warning Tone

### 1.3 Options

- ✓ Wireless remote base station----- needs using *428 plus* Central Unit.
- ✓ Door phone and Door lock interface--- needs Door phone/relay functional card
- ✓ Expansion 4 trunk lines-----needs Trunk functional card
- ✓ External Battery----- 24V/7A Battery installed outside the cabinet to support the Central Unit

## 2. Installation

### 2.1 Before Installation

#### SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. **Warning: This equipment must only be installed and maintained by service personnel.**
3. Please keep this User's Manual for your reference.
4. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or cloth for cleaning.
5. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
6. Please keep this equipment from humidity.
7. Install this equipment on the good position; Any dropping or falling would cause the equipment damaged.
8. Make sure the voltage of the power source when connecting the equipment to the power outlet.
9. Avoid people's stepping on the power cord; Do not place anything on the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect the equipment from mains to avoid being damaged by transient overvoltage.
12. Keep the equipment cleaned and dried.
13. Do not open the equipment. For safety reason, the equipment should only be opened by qualified service personnel.
14. **The DC port on the remote unit shall connect to TNV-1 approved devices.**

15. If one of the following situations happens, get the equipment checked by a service personnel:
  - a. The Power cord or plug is damaged.
  - b. Liquid has dropping into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well or you can not get it worked according to User's manual.
  - e. The equipment has dropped and damaged.
  - f. If the equipment is broken.
16. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, WHERE THE STORAGE TEMPERATURE IS OVER 60°C(140°F), IT MAY DAMAGE THE EQUIPMENT.**
17. The power supply can be operated under the ambient temperature of 40°C.
18. The Earthing wire has to connect to safety ground by screw and star washed before install the equipment.
19. Connection of the Music on hold port and Pager port on this equipment must be to SELV approved circuits.
20. **CAUTION:** There is hazardous voltage when connected Door Lock System. Disconnect the power system before connected the Door Lock System.
21. **CAUTION:** Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type recommended by the manufacturer.  
Dispose of used batteries according to the manufacturer's instructions.

## 2.2 Installation of Central Unit

Figure 2-1 shows the exterior of 428 series Central Unit.

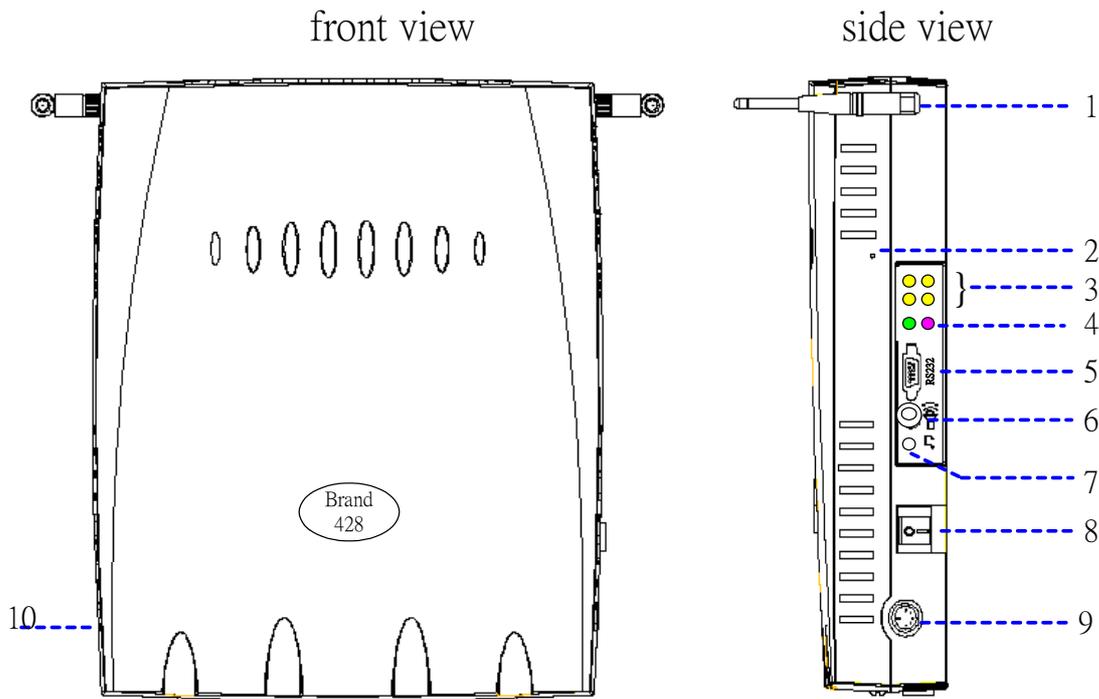


Figure 2-1 428 series Central Unit

1. Antenna : Should be connected to the Central Unit.
2. Registration button: : When press the button, the Central Unit will enter into the registration mode.
3. Trunk LED : LED will light up when the trunk is used.
4. Power LED : When Central Unit is working correctly, the power LED flashes at a cadence of every second.
5. RS232 port : Connection for UPT or SMDR device.(e.g. printer or PC terminal.)
6. Audio output port : Connection for speaker terminal.
7. Audio input port : Connection for music source (e.g. radio).

**CAUTION:** Connection of the Music on hold port and Pager port on this equipment must be to SELV approved circuits.

8. Power switch: : The switch for system power supply.
9. Power Cable Input : Plug in the Central Unit

10. -Cable outlet: : Outlet for the cables of trunks, SLTs, RBSs, Door phones & relays, and Earthing wire.  
-Earthing wire: Connect the grounding wire (green/yellow) to the ground. The Earthing wire has to connect to safety ground by screw and star washed before install the equipment

## Installation Steps

Step 1 : Please check the safety instructions carefully before installation.

Step 2 : Check the items of each package set.

The package of Central Unit includes the following items:

- Central Unit
- Main power cord (The plug may be different depending on countries)
- A bag with;
  - screws
  - Quick Connection Block. (Cables and RJ11 connectors for Remote Base station are not included)
- Power adapter (48V/60W).
- A mounting template.
- User's Manual.

Step 3 : Preparation for Installing and Wiring of Central Unit

- Remove the 2 screws on the top side of the Central Unit and the one screw on the bottom side of the Central Unit.
- Open the Central Unit. Figure 2-2 shows the Central Unit with all the functional boards and the connectors.
- Wiring
  - Prepare cables, RJ11 plugs, and the Quick Connection Block: 4 pins x 5, 2 pins x 3. (AWG24 twist cables are suggested)
  - Connect cables with the bases, trunks, SLTs, door phones and relays (usually with RJ11 plugs)
  - Fix Quick Connection Block on the other end of cables, and plug into their correct positions.
  - Make the cables inside the Central Unit pass through the cable outlet (see Figure 2-2). Now you can close the Central Unit and fix it with 3 screws.
  - Connect the grounding wire (green/yellow) to the ground. The Earthing wire has to connect to safety ground by screw and star washed before install the equipment.

Step 4:

- Insert battery cells into the handset (1.2V x 3 Ni-MH AAA).
- Power on the Central Unit and enter into the registration mode (by pressing the registration button, or by using UPT console).
- Register your handsets according to the Handset Manual.

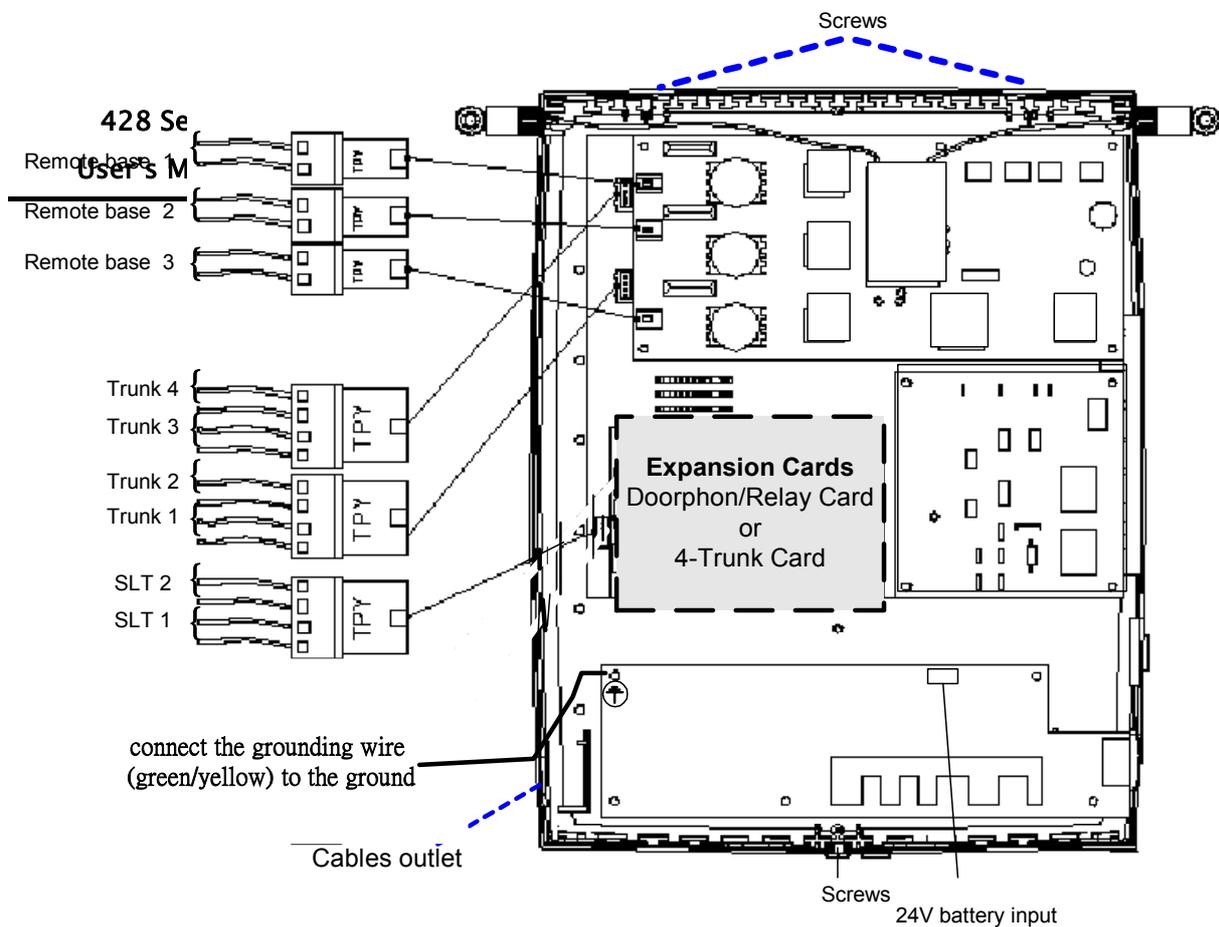


Figure 2-2 Connection of the Central Unit

**IMPORTANT**

*To keep the system default value, the manufacturer strongly recommends the dealer to do the following reset procedure at first installation.*

- Step 1: Remove the front cover of Central Unit.**
- Step 2: Power on Central Unit and waiting for 1 minute for the system becoming stable.**
- Step 3: Press the registration button on the DECT board of system. Holding down the button about 15 seconds until the LED of DECT board becomes steady on/off for a while (within approximately 10 seconds). After system resetting DECT completed, the LED will start to flash again.**
- Step 4: Use UPT setting to do UPT [1-43] item in Selection 1 (system reset).**
- Step 5: Power off Central Unit to clear all temporary information. Restart the system with default setting.**

**Before closing the front cover of the Central Unit, make sure you have fastened all the cables and connectors. The power LED will light up when you power on the Central Unit; but the RUN LED indicator of the Central Unit will be flashing quickly. Wait for 1 minute, and then the system will work normally (the RUN**

LED indicator will flash slowly).

## 2.3 Installation of Remote Station ( RBS )

Figure 2-3 shows the outline of RBS. The RBS is connected to the Central Unit by the AWG24 twisted pair cable. Also the power of RBS can be obtained by the twisted pairs cable from the Central Unit. The slide connector is 4-pin RJ11 jack. The distance between RBS and the Central Unit has a maximum of 1 Km.

### Installation Steps:

- Step 1 : Choice the location for your RBS. (Mount the RBS on places and positions as determined in your system configuration plan. The RBS must be placed where the antenna is not hindered by thick wall or metal objects)
- Step 2 : Measure the distance between the RBS and the Central Unit. Cut the cable based on the length as you needed.
- Step 3 : Prepare the connectors RJ11 for RBS, and 2-pin Quick Connection Block for the Central Unit.
- Note: The RJ11 (DC) port on the remote station (RBS) shall connect to TNV-1 approved devices.
- Step 4 : Position the RBS and fasten it with screws. Connect the antennas with the RBS. Plug the connector into the RBS. When the RBS is under the normal operation, the LED will become flashing.
- The following optional cards can be used to enhance the function of the Central Unit function. They are Door Phone/Relay Functional card and Trunk Functional card.

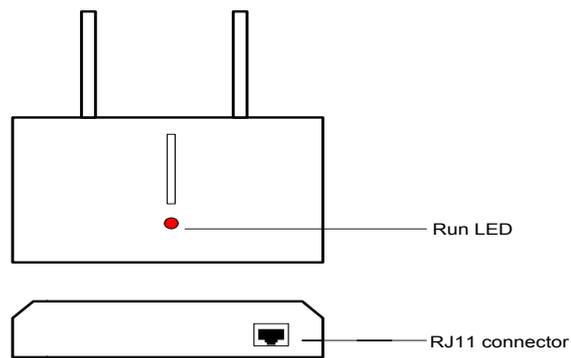


Figure 2-3 Remote Base Station

## 2.4 Options

The following optional cards can be used to enhance the function of the Central Unit function. They are Door Phone/Relay Functional card and Trunk Functional card.

### 2.4.1 Installation of Door Phone/Relay Functional Card

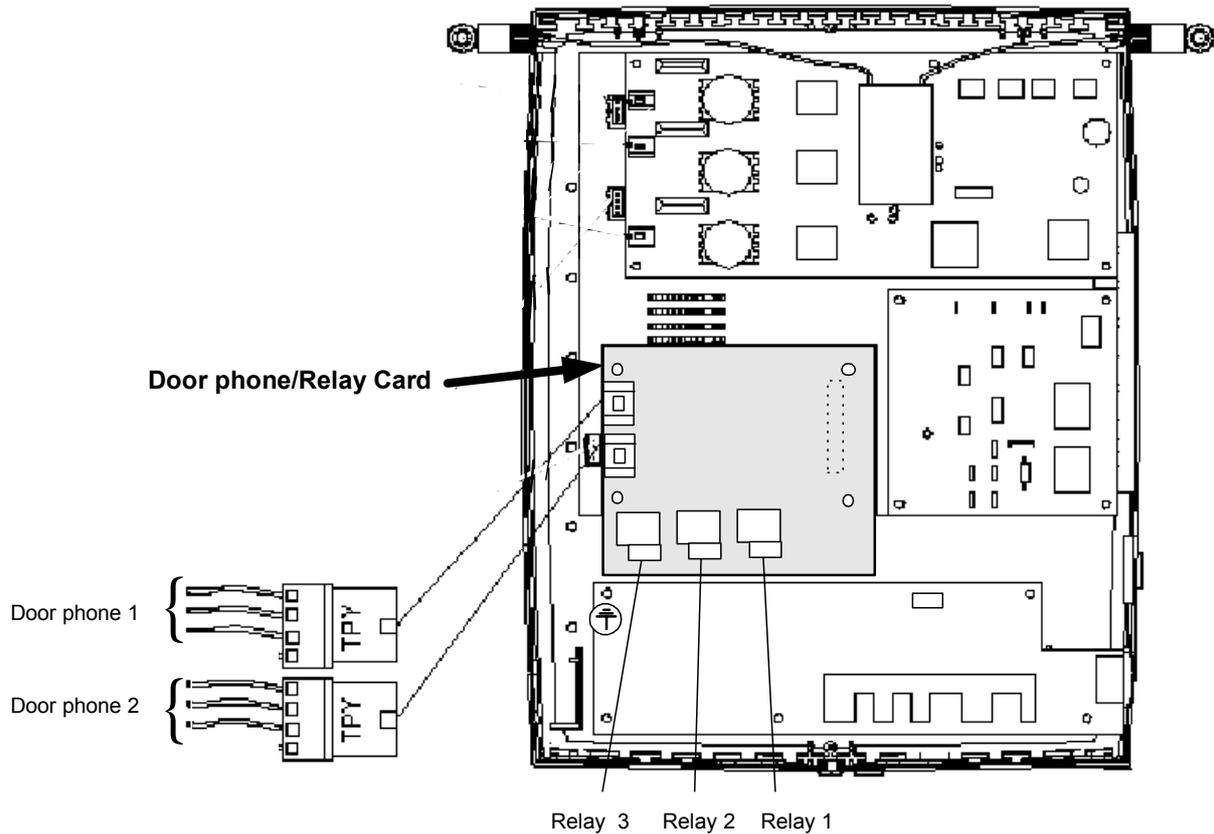


Figure 2-4 Connection of Door Phone/Relay Card

Before installing one of optional cards, you should turn off power firstly. Connection of Door Phone/Relay Card is according to the installation steps of the Central Unit as shown in figure 2-4.

## 2.4.2 Installation of Trunk Functional Card

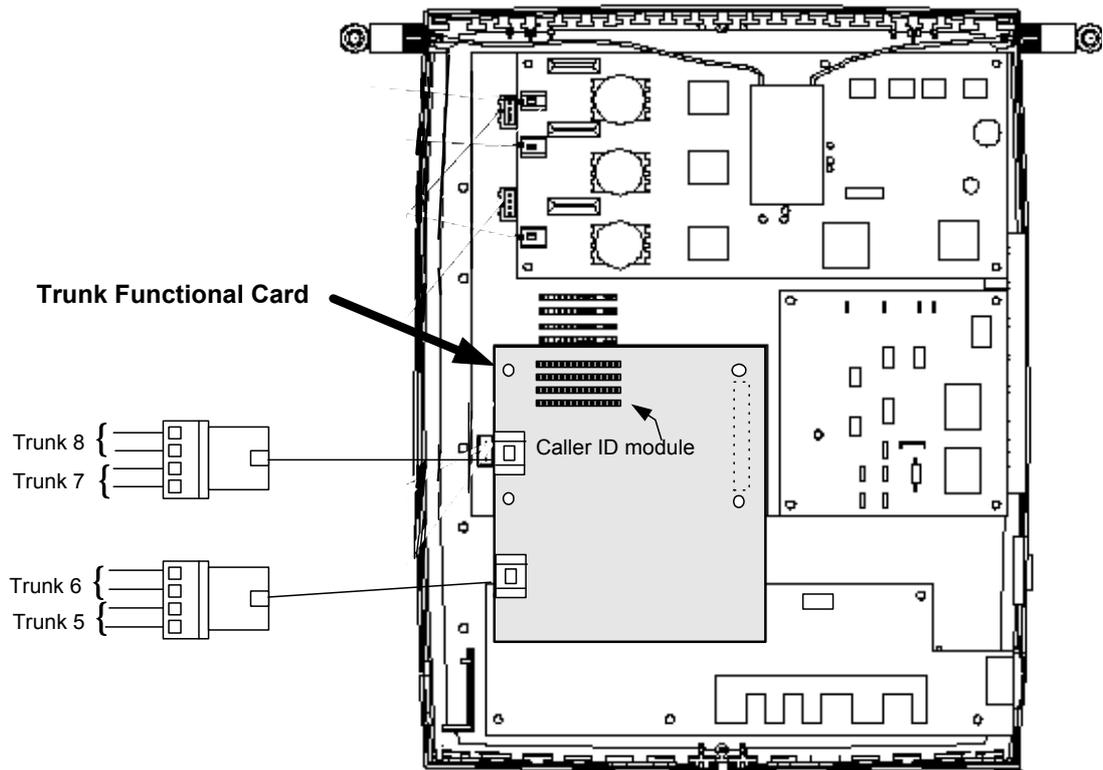


Figure 2-5 Connection of Trunk Functional Card

Before installing one of optional cards, you should turn off power firstly. Connection of Trunk Functional Card is according to the installation steps of the Central Unit as shown in figure 2-5.

### **Warning**

*The position of all jumpers has been setting well before shipment. Do not attempt to change the jumpers on the boards by yourself.*

## 2.5 General Notes

1. **The backup battery with 24V DC will supply the power to the Central Unit automatically once the main power failed.**  
**CAUTION:** Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type recommended by the manufacturer.  
Dispose of used batteries according to the manufacturer's instructions
2. **If you want to install a modem to the Central Unit, you should connect the modem to the 1<sup>st</sup> SLT port (see Figure 2-2).**
3. **To save your system's data, the Lithium Ion battery of the PBX board should be checked and replaced once a year.**
4. **When you forgot the system password, or the system programming was failed since the baud rate of RS232 port was not conformed to UPT's required, the Central Unit can be reset to return to default setting. Follow the below steps to reset the system.**
  - 4.1 Turn off power switch.
  - 4.2 Remove the battery jumper JP5 for 10 seconds (refer to Appendix. A.7 Default Setting on PBX Board)

Before power on the Central Unit, please make the JP5 short (return to JP5's original status) to recall the system data. So when resetting occurs, all programmed features will be reset to factory default setting.

## 3. DECT and SLT Operations

This chapter provides the operation information of DECT handset and SLT with step-by-step instruction.

### 3.1 Alarm Clock

*Set station alarm timing, up to 3 sets.*

#### 3.1.1 Set Station Alarm

- (a) Off-hook handset

- (b) Dial [6]
- (c) Dial [7]
- (d) Select *alarm number: 0~2*
- (e) Enter *alarm time: HH:MM*
- (f) Dial [\*] to set alarm-once
- (g) Dial [#]
- (h) On-hook handset to quit

### 3.1.2 Clear Station Alarm

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [7]
- (d) Select *alarm number: 0~2*
- (e) Dial [#]
- (f) On-hook handset to quit

## 3.2 Auto CO Hunting

*Users can get any available or incoming call trunk line directly.*

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [6]
- (d) Select *hunting type* by dialling
  - [0]: Disable
  - [1]: Auto CO Idle
  - [2]: Auto CO Ring
- (e) Dial [#]
- (f) On-hook handset to quit

*Note:*

---

- ✧ Dial [\*] for internal call after activating Auto C.O. Idle mode.

### 3.3 Broker's Call/ Call Splitting

*Enable users to communicate between two parties (trunk line or station).*

- Talking with party A
- Press **[Flash]** hook (corded phone) or **[R]/[INT]** key (cordless phone)
- Call party B and talk to party B
- Press **[Flash]** hook (corded phone) or **[R]/[INT]** key (cordless phone) to switch between party A and B

**Note:**

- ✧ A broker's call will be deactivated if the caller hangs up.
- ✧ Dial **[3]** to convert broker call to 3-party conference

### 3.4 Call Forward

*Transfer incoming call to a designated station or trunk line automatically under setting conditions. Please refer to System programming [6-02].*

#### 3.4.1 Set Call Forward

- Off-hook handset
- Dial **[6]**
- Dial **[2]**
- Select *forward mode* by dialing

- (e) [0]: No
- [1]: Direct (Internal)
- [2]: No-answer (Internal)
- [3]: Busy (Internal)
- [4]: Busy/No-Answer (Internal)
- [5]: Direct (External)
- [6]: No-answer (External)
  
- (f) Enter *Forward type*
- (g) [0]: Call - Forward
- [1]: Follow Me
  
- (h) Enter *Station number / External phone number*
- (i) Dial [#]
- (j) On-hook handset to quit

### 3.4.2 Cancel Call Forward

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [2]
- (d) Dial [0]
- (e) Dial [#]
- (f) On-hook handset to quit

### 3.4.3 Set Call Forward Inhibit

*Inhibition of call forward feature.*

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [\*]
- (d) Dial [2]
- (e) Select *forward inhibit mode* by dialing

- (f) [0]: Disable  
[1]: Enable
- (g) Dial [#]
- (h) On-hook handset to quit

### 3.5 Call Hold

*Puts an intercom/outside call on hold to be retrieved later.*

#### 3.5.1 Place Call on Hold

- (a) Talking with another party
- (b) Press **[Flash]** hook (corded phone) or **[R]/[INT]** key (cordless phone)

#### 3.5.2 Take Hold Line Back.

- (A) **Take station back (After the hold party's handset On-hook)**
  - (a) Off-hook handset
  - (b) Press **[Flash]** hook (cord phon) or **[R]/[INT]** key (cordless phone)

Or

- (B) **Take station back (after the hold party's handset is On-hook)**
  - (a) Off-hook handset
  - (b) Dial **[6]**
  - (c) Dial **[\*]**
  - (d) Dial **[0]**

Or

- (C) **Take station back**
  - (a) Off-hook handset
  - (b) Dial *station number* of the hold party

Or

- (D) **Take trunk line back**
  - (a) Off-hook handset
  - (b) Dial [8]
- (C) Dial [1 ~ 4] of the hold trunk line

## 3.6 Call Park

*Parks a call at a designated station, so that someone can answer it at any station by entering the designated station number.*

### 3.6.1 Set Call Park

- (a) Talking with trunk line
- (b) Press [**Flash**] hook (corded phone) or [**R**]/[**INT**] (cordless phone) to place the call on hold
- (c) Dial [7]
- (d) Dial [3]
- (d) Dial *station number*
- (e) Dial [#]
- (f) On-hook handset to quit

### 3.6.2 Retrieve Call Park

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [4]
- (d) Dial *station number*
- (e) Dial [#]
- (f) On-hook handset to quit

## 3.7 Call Pick-Up

*Picks up a call from the ringing station.*

### 3.7.1 General Pick-up.

*Picks up a non-designated intercom/outside call in the same group.*

- (a) Off-hook handset
- (b) Dial [\*]

### 3.7.2 Specific Pick-up.

*Picks up an intercom/outside call from the designated ringing station.*

- (a) Off-hook handset
- (b) Dial **station number** and hear busy tone
- (c) Dial [\*]

## 3.8 Call Transfer

*Transfer a call to another station.*

### 3.8.1 Ring Transfer.

*Notifies the destination station with transferring ring.*

- (a) Talking to party A
- (b) Press [**Flash**] hook (corded phone) or [**R**]/[**INT**] (cordless phone) to place a call on hold
- (c) Dial **station number** of party B
- (d) On-hook handset to quit

### 3.8.2 Voice Transfer

*Voice notification of destination station.*

- (a) Talking to party A
- (b) Press [**Flash**] hook (corded phone) or [**R**]/[**INT**] (cordless phone) to place a call on hold
- (c) Dial *station number* of party B
- (d) Talking to party B
- (e) On-hook handset to quit

### 3.8.3 Busy Transfer

*Transfer the incoming call later when the destination station is on-hook.*

- (a) Talking to party A
- (b) Press [**Flash**] hook (corded phone) or [**R**]/[**INT**] (cordless phone) to place a call on hold
- (c) Dial *station number* of party B and hear busy tone
- (d) On-hook handset to quit

## 3.9 Do Not Disturb

*Station will not receive any incoming calls after set-up. This feature is applied when users do not want to be interrupted.*

### 3.9.1 Enable DND

- (a) Off-hook handset
- (b) Dial [**6**]
- (c) Dial [**1**]
- (d) Dial [**1**]
- (e) On-hook handset to quit

### 3.9.2 Disable DND

- (a) Off-hook handset

- (b) Dial [6]
- (c) Dial [1]
- (d) Dial [0]
- (e) On-hook handset to quit

### 3.10 Digital Tapeless Answering Machine (DTAM)

*Allow users to get mailbox messages left*

Note: **The manufacture strongly recommends using the handset for these recording operation.**

#### 3.10.1 Recording System OGM Message

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [3]
- (e) Enter **Operator password**
- (f) Dial [\*]
- (g) Dial [#]

**Auto Section Number :**

- (d.1) Dial [\*] to start recording, and dial [\*] again to stop recording, The voice recording is playback automatically. At this time, you can press [#] to skip listening the recording.
- (d.2) Repeat step (d.1) to increase section number automatically.

**Select Section Number 0-7 :**

- (d.3) Dial [\*] + Enter [0~7] to start recording, and dial [\*] again to stop recording. The voice recording is playback automatically at this time

### Exit System OGM recording

(h) Hook on to exit System OGM recording.

### 3.10.2 Listen DTAM voice segment

If you need to modify voice recording on a particular segment, you can access the segment you wish to change directly.

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [3]
- (e) Enter **Operator password**
- (f) Dial [\*]
- (g) Dial [#]
- (h) Dial [0-7] **segment number**
- (i) Dial [#] to start playback, and dial [#] again to stop.

### Erasing Current OGM message

Repeat above step (a)~(e), then Dial [5] to erasing current OGM message.

OGM message segment :

| Segment | Purpose                | Instruction  |
|---------|------------------------|--|
| 00      | OGM password           | Please enter your password   |
| 01      | Illegal Station number | Incorrect Dialing or wrong Number, please try again  |
| 02      | Thanks                 | Thank you for your call!   |
| 03      | No message             | Your mailbox is empty, Thanks for your call!   |
| 04      | The end of OGM         | All messages have been read, to exit please press *  |
| 05      | Remind next operation  | This message have been processed successfully.<br>Press 1 for next message.<br>Press 2 for previous message.<br>Press 3 to repeat current message.<br>Press 4 to reserve current message.<br>Press 5 to erase current message.<br>Press * for exit |

|    |                   |                              |
|----|-------------------|------------------------------|
| 06 | Wait for erasing  | Erasing message, please wait |
| 07 | Erasing completed | Erasing completed            |

### 3.10.3 Recording Personal OGM Messages

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [3]
- (e) Enter **Station Password**
- (f) Dial [#] to enter Personal OGM mode
- (g) Dial [\*] to start recording, and dial [\*] again to stop recording. The voice recording is playback. Dial [5] is erasing current OGM Message

**Personal message example :**

- Xxxxx is not available, please leave your message after the Beep ... Press # to exit.

**Exit System OGM recording**

- Hook on to exit Personal OGM recording.

### 3.10.4 DTAM General Operation

#### 3.10.4.1 Overview of general operation

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [0]
- (e) Enter **Station Password** (maximum 7 digits in length)
- (f) Dial [#]
- (g) Select DTAM Operation by dialling:

[1] : Go to next message.

---

[2] : Rewind to previous message.

[3] : Repeat current message.

[4] : Reserve current message.

[5] : Erase current message.

[\*] : Finish listening to all messages.

#### 3.10.4.2 Listen to Your Message From Outside Area

*This feature provides a capability to listen your own station message from the outside area. The DTAM Operation by dialing is the same as the above section.*

- (a) Call your **Company or System**
- (b) Hear **Auto Attendant Greeting**
- (c) Dial [7]
- (d) Dial [#]
- (e) Dial [0]
- (f) Dial your own **Station Number**
- (g) Dial **Station Password+ [#]**
- (h) Select DTAM Operation by dialling

#### 3.10.4.3 Erase System DTAM Messages

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [1]
- (e) Enter **Operator Password.**
- (f) Dial [#] and then [#] to enter confirm.

#### 3.10.4.4 Erase Station DTAM Messages

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]

- (d) Dial [2]
- (e) Enter **Station Password**.
- (f) Dial [#] and then [#] to enter confirm.

#### 3.10.4.5 Forward Station to DTAM (System Voice Mail) Directly

In addition to transferring an external call to Mail box when the desired station is No Answer and Line Busy, all stations can also set DIRECT FORWARD to move all external calls directly into Mail box without answering.

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [4]
- (d) Dial [1]
- (e) On-hook handset to exit

#### 3.10.4.6 Disable Forward Station to DTAM Directly

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [4]
- (d) Dial [0]
- (e) On-hook handset to exit

#### 3.10.4.7 Transfer Incoming Line to Designated Station's Mail Box

This feature provides a capability to transfer directly the Picked Up C.O. call to the Mail box of the dialed station.

- (a) Pick up incoming C.O. Line, and press **[Hold]**
- (b) Press [7]
- (c) Dial [#]
- (d) Press designed **Station Number to Transfer**
- (e) Press **[Hold]** and hang up to exit

#### 3.10.4.8 Station Password

Station password is designed to access DTAM. No Factory value for Station password. Insert your own password when using the following setting.

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [\*]
- (e) Enter **Old Station Password** (Default: skip step (c))
- (f) Dial [#]
- (g) Enter **New Station Password** (maximum 7 digits in length)
- (h) Dial [#]
- (i) On-hook handset to exit

#### 3.10.5 Listen Your Message from Outside Area

- (a) Call the *Phone Number* of the trunk line
- (b) Listen to DISA instructions
- (c) Press [7]
- (d) Dial [#]
- (e) Dial [0]
- (d) Press *Station Number*
- (e) Press *Station Password*
- (f) Dial [#]

### 3.11 Door Phone and Door Lock

#### 3.11.1 Call Door-phone

- (a) Off-hook handset
  - (b) Dial [7]
-

- (c) Press the *Door-phone number*

[5]: Door-phone 1

[6]: Door-phone 2

### 3.11.2 Open Door-lock: Idle

*Open door-lock by handset.*

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [5] (or [6]) to talk to door-phone 1 (or 2)
- (d) Dial [7]
- (e) Dial [9] to open door-lock 1 (or 2)
- (f) On-hook handset to end the call

### 3.11.3 Open Door-lock: While talking to Door Phone

*Use handsets to open door-lock.*

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [9]
- (d) On-hook handset to end the call

## 3.12 External Call

*Place a call through the trunk line.*

### 3.12.1 Make an External Call

- (a) Off-hook handset

- (b) Dial [0] or [8] and then dial [1 ~ 4], then wait for a dial tone
- (c) Dial *phone number*; then wait for answer
- (e) On-hook handset to end the call

### 3.12.2 Make an VoIP External Call

- (a) Off-hook handset
- (b) Dial [#] or [8] and then dial [5 ~ 8], then wait for a dial tone
- (c) Dial *phone number*; then wait for answer
- (d) On-hook handset to end the call

## 3.13 Flashing on Trunk Line

*Permit user to send Flash pulse on the trunk line to access specific services.*

### 3.13.1 Send a flash pulse for SLT and Handset

- (a) Talk with a trunk line caller
- (b) Press [**Flash**] hook (corded phone) or [**R**]/[**INT**] to place the call on hold
- (c) Press [8]
- (d) Press [#] to send a flash pulse on the trunk line.

**Note:**

- ◇ Flash time can be configured by function [2-27] for trunk line configured as CO-line and by function [2-26] for trunk line configured as PBX-line.

### 3.13.2 Send a flash pulse for Handset

- (a) Talk with a trunk line caller
- (b) Press [**R**](**INT**) to send a flash pulse on the trunk line

**Note:**

✧ To enable the function, please select 1(for R) or 2(for INT) in the item [1-49] as the function key.

### 3.14 Hot Line

*Set a frequent used telephone number or a special one as a "hot line". The call will be dialled automatically after hook-up.*

#### 3.14.1 Enable/Disable Hot Line

*Set the function of hot line.*

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [0]
- (d) Dial [0]
- (e) Select **hot line type** by dialling
- (f) [0]: Disable  
[1]: Intercom hot line  
[2]: External call hot line
- (g) Dial [#]
- (h) On-hook handset to quit

#### 3.14.2 Set Hot Line Number

*Set a specific telephone number as hot line.*

- (a) Off-hook handset
  - (b) Dial [6]
  - (c) Dial [0]
  - (d) Dial [1]
  - (e) Enter **station number** or **external phone number**
  - (f) Dial [#]
  - (g) On-hook handset to quit
-

### 3.15 Idle Station Hunting

#### 3.15.1 Hot Line Activation

- (a) Off-hook handset and wait (more than 3 seconds)

*Redirect the incoming call to an idle station in the same group when the called station is busy.*

#### 3.15.2 Idle Station Hunting

- (a) Make an intercom call and hear busy tone
- (b) Dial [3]

**Note:**

✧ Only one extension in the extension group is assigned to ring.

### 3.16 Intercom

*Place a call to a station.*

- (a) Off-hook handset
- (b) Dial *station number*, then wait for reply
- (c) On-hook handset to end the call

### 3.17 Last Number Redial

*Redial the last outside number you called without manual operation.*

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [2]

### 3.18 Line Reservation / Line Queuing

*Put users in queues when all trunk lines are busy.*

### 3.18.1 Specific Line Reservation

*Reserve a designated trunk line*

- (a) Dial [8] and then dial [1 ~ 4], and hear busy tone
- (b) Dial [6]

### 3.18.2 Auto Line Reservation.

*Reserve a non-designated trunk line.*

- (a) Dial [0] and hear busy tone
- (b) Dial [6]

## 3.19 Cancel Line Reservation

*Cancel users in trunk line reservation.*

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [#]
- (d) Dial [2]
- (e) On-hook to quit

## 3.20 Message Waiting

*Allow users to leave message and require a return call when the called party is either busy, no-answer, or setting in DND mode.*

### 3.20.1 Message Waiting.

*Leave message*

- (a) Make an intercom call and hear ring-back tone (no answer )
- (b) Dial [6]

### 3.20.2 Auto Call Back

*Inform caller when the called party is on-hook.*

- (a) Make an intercom call and hear busy tone
- (b) Dial [6]

### 3.21 Override: Conversation Intrusion

*Allow a higher-level user to break into a lower-level user's telephone conversation to deliver urgent messages.*

- (a) Call station and hear busy tone
- (b) Dial [0]

### 3.22 Override: DND Override

*Allow a higher-level user to override the DND programmed by the called party and make his station ring.*

- (a) Call station and hear busy tone
- (b) Dial [0]

### 3.23 Paging

*Allow users to make an important announcement to a group of people over stations..*

#### 3.23.1 Page All

*Page all through connected external amplifiers.*

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [\*]
- (d) Dial [#]
- (e) Dial [0]

### 3.23.2 Answer Paging

*Talk to the paging station.*

- (a) Off-hook handset
- (b) Dial [7][\*] [#]

## 3.24 Speed Dialling: for External Calls Only

*Store frequently used telephone numbers in memory bin so users can place call by dialling the set bin or by pressing the set key.*

### 3.24.1 Set Speed Dialling Number

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [5]
- (d) Enter **SPD number: 0~9**
- (e) Enter **telephone number** by dialling
- (f) [0] ~ [9]  
[\*][#]           for [#]  
[\*][\*]           for [\*]  
[\*][1]           for (pause)  
[\*][2]           for (Pulse/Tone)  
[\*][3]           for (flash)
- (g) Dial [#]
- (h) On-hook to quit

**Note:**

- ✧ Generally, the special dialling code [\*] is used as the escape code in the definition of special speed dial codes.

### 3.24.2 Clear Speed Dialling Number

- (a) Off-hook handset
- (b) Dial [6]

- (c) Dial [5]
- (d) Enter **SPD Number: 0~9**
- (e) Dial [#]
- (f) On-hook to quit

### 3.24.3 Speed Dialling (for operation)

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [1]
- (d) Dial **SPD Number: 00~99**

**Note:**

✧ SPD No. 00~09 for each station, SPD 10~19 for each group, SPD 20~99 for system

## 3.25 Activate/ De-activate Station Lock

*It is not possible to dial out from a station once it has been locked. Toggle operation will activate or de-activate the station lock*

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [9]
- (d) Enter **password** (maximum 7 digits in length)
- (e) Dial [#]

## 3.26 Toll Password

*To remove the toll restriction when using a station that is not available for long distance calls.*

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [7]

- (d) Enter *toll password*
- (e) Dial [#]

**Note:**

- ✧ From PBX to VoIP card, dial '8' after the above sequence
- ✧ From PBX to PBX, dial '0' after the above sequence
- ✧ From VoIP card to PBX, dial '0' after the above sequence
- ✧ From VoIP card to VoIP card, dial '8' after above sequence

### 3.27 Warning Tone

*Reminds users that they have other incoming calls.*

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [8]
- (d) Select *Warning Tone Mode* by dialling
- (e) [0]: Disable  
[1]: Enable
- (f) Dial [#]

### 3.28 DISA Voice Access

*Operation of the DISA voice.*

#### 3.28.1 Recording

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [5]
- (e) Press the *Operator Password*

- (f) Dial [#] + *Voice Section Number*
- (g) Dial [\*] to record voice
- (h) Dial [\*] to stop record, the voice recording is playback automatically
- (i) Dial [#] to stop playback or waiting the playback finished and the voice section is increased by 1 automatically.
- (j) Repeat (e) ~ (g) for the following voice section

DISA Voice Section Number Selection :

| Number              | Purpose                                | Instruction  |
|---------------------|--|--|
| 00                  | Company Greeting                       | <i>Welcome to "Company name"</i>   |
| 01                  | First Language Select;<br>Dial "6"     | <i>For English Service, Dial 6</i>   |
| 02                  | Welcome Greeting: Day                  | <i>Please dial the extension no. or dial "9" for Operator</i>                    |
| 03                  | Welcome Greeting: Night                | <i>It's off-duty. Please dial the extension no.</i>                              |
| 04                  | Thanks                                 | <i>Please hold; I will transfer for you.</i>                                     |
| 05                  | Redial Extension Number                | <i>Please dial again or try another extension number.</i>                        |
| 06                  | Wait-On Extension                      | <i>If you want to wait, please enter pound sign</i>                              |
| 07                  | Station No Answer                      | <i>Sorry! The person you try to reach is not available</i>                       |
| 08                  | Station Busy                           | <i>Sorry! The number you dialed is busy</i>                                      |
| 09                  | Illegal Station Number                 | <i>Sorry! The number you dial is not correct.</i>                                |
| 10                  | Lunch Break                            | <i>It's our lunchtime. Please dial the extension number.</i>                     |
| 11                  | DISA Toll Password                     | <i>Please enter the toll password</i>  |
| 12                  | All Trunk Busy                         | <i>Sorry! All lines are busy.</i>  |
| 13                  | Invalid Password                       | <i>The password is not correct.</i>  |
| 14                  | Access Password                        | <i>Please enter the password and pound for confirmation</i>                      |
| 15                  | DTAM Recording                         | <i>If you need to leave a message. Please dial "6", Or dial "9" for operator</i> |
| 16                  | Good Bye                               | <i>Still wrong number. Thank you for your calling.</i>                           |
| 17                  | Extension Information                  | <i>Sales department Press "101" ...</i>  |
| The Second Language |  |  |
| 18                  | Company Greeting                       | <i>Thanks for calling Comflux</i>  |
| 19                  | Second Language<br>Select,<br>Dial "7" | <i>For (the second language), please dial "7"</i>                                |
| 20                  | Welcome Greeting : Day                 | <i>Please dial the extension no. or dial "9" for Operator</i>                    |
| 21                  | Welcome Greeting :                     | <i>It's off-duty. Please dial the extension no.</i>                              |

|    |                         |  |
|----|-------------------------|--|
|    | Night                   |  |
| 22 | Thanks                  | <i>Please hold; I will transfer for you.</i>                                     |
| 23 | Redial Extension Number | <i>Please dial again or try another extension number.</i>                        |
| 24 | Wait-On Extension       | <i>If you want to wait, please enter pound sign</i>                              |
| 25 | Station No Answer       | <i>Sorry! The person you try to reach is not available</i>                       |
| 26 | Station Busy            | <i>Sorry! The number you dialed is busy</i>                                      |
| 27 | Illegal Station Number  | <i>Sorry! The number you dial is not correct.</i>                                |
| 28 | Lunch Break             | <i>It's our lunchtime. Please dial the extension number.</i>                     |
| 29 | DISA Toll Password      | <i>Please enter the toll password</i>  |
| 30 | All Trunk Busy          | <i>Sorry! All lines are busy.</i>  |
| 31 | Wrong Password          | <i>The password is not correct.</i>  |
| 32 | Access Password         | <i>Please enter the password and pound for confirmation</i>                      |
| 33 | DTAM Recording          | <i>If you need to leave a message. Please dial "6", Or dial "9" for operator</i> |
| 34 | Good Bye                | <i>Still wrong number. Thank you for your calling.</i>                           |
| 35 | Extension Information   | <i>Sales department Press "101" ...</i>  |

**Note:**

- ✧ 00: is the general Company Welcome Greeting. When people call, it will be broadcasted.
- ✧ 01-09 is Regular Guidance Message for Day/ Night service.  
(The operator access code may change (0 or 9 by UPT [4-06]). Please adapt the content of the message.)
- ✧ 12-13: are used in the Call Screen feature through DISA operation.
- ✧ 14: to leave message on Voice Mail (DTAM) through DISA operation.

### 3.28.2 Play

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [5]
- (e) Press the **Operator Password**
- (f) Dial [#] + **Voice Section Number**
- (g) Dial [#] to play voice

- (h) Dial [#] to stop play and the voice section number is increased by 1 automatically
- (i) Repeat (e) ~ (f) for the following voice section

### 3.29 Force Warning Tone

*When talking with DECT handset, if it is busy, force DECT handset to get a warning tone to the user.*

- (a) Intercom with a using handset, and hear busy tone
- (b) Dial [5] and hear ring-back tone; the calling DECT handset hear call waiting tone, and then wait for the called handset on-hook
- (c) System will ring the called DECT handset while the called handset on-hook

### 3.30 Pulse/DTMF Dialling Conversion

*When using external line, exchange the method of dialling between Pulse and DTMF. The operating procedure of DECT handset is dependent on the DECT handset.*

*See the user menu of DECT handset or UPT[1-17].*

### 3.31 Modem Switch

*When you use a modem, if you want to avoid downgrading the speed, ensure the modem is connected to the 1<sup>st</sup> SLT and the 1<sup>st</sup> Trunk Line is available. Using the following steps; this makes Modem Switch keep its connected quality.*

- (a) Off-hook handset
  - (b) Dial [8]
  - (c) Dial [9]
  - (d) Press the **Operator Password**
  - (e) Dial [#]
  - (f) **Waiting one second**
  - (g) Dial (**your ISP's telephone number**)
-

### 3.32 Supplement

*If the dial-up connection fails, please wait one second later. Then repeat (a) ~ (e) steps.*

#### 3.32.1 Erase DISA/DTAM Block Messages

*This feature provides a capability to erase voice recording on the block of memory.*

- (a) Off-hook handset
- (b) Dial [7]
- (c) Dial [#]
- (d) Dial [4]
- (c) Press the ***Operator Password***
- (d) Dial [#]
- (e) Select ***Function Code*** by dialing
  - [0]: all DISA/DTAM memory
  - [1]: DISA OGM
  - [2]: DTAM OGM
  - [3]: DTAM personal OGM
  - [4]: all of DTAM voice mail messages
- (f) Dial [#]

#### 3.32.2 Day/Night Mode Switch

*This feature provides the handset on the UPT[1-10] to switch Day or Night mode of system.  
You have to enter UPT[1-27] to activate day mode automatically first.*

##### **Switch to Night Mode**

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [0]
- (d) Dial [6]
- (e) On-hook handset

**Switch to Day Mode**

- (a) Off-hook handset
- (b) Dial [6]
- (c) Dial [0]
- (d) Dial [7]
- (e) On-hook handset

## 4. Q & A

1. Q: I can not make a call by new DECT handset ?  
A: New handset must be registered to the SP-428 system before calling.  
Related setting : 1. UPT[4-11]  
2. Handset user's guide.
2. Q: How can I define the handset numbers ?  
A: There are two ways to register the handset to the SP-428 system. One is when you press the SP-428 registration button, the registration LED will turn to flash quickly which is enabling the registration, then following the "handset user's guide" for registration. Be noticed this handset number will be automatically define. The other way is user can use UPT to define the handset number.  
Related setting : 1. UPT [1-07], UPT [4-11]  
2. Handset user's guide.
3. Q: How can I set the handset numbers to SP-428 system ?  
A: Use UPT setting to port numbers to SP-428 system.  
Related setting : 1. UPT [1-07]
4. Q: Once all the trunk lines have be taken. When can I know the trunk line is available ?  
A: Use a telephone appointment (press" 6 " then hand on the phone after receiving busy tone).  
Noted that you must disable the trunk line which you are not connect to CO line before you make a telephone appointment.  
Related setting : 1. UPT [1-16]
5. Q: When can I know extension number is available while the extension number is busy ?  
A: Use a busy appointment (press" 6 " then hand on the phone after receiving busy tone).
6. Q: Does the SP-428 system has a function of Station Message Detail Recording (SMDR) ?  
A: Yes, it does. You can connect the SP-428 system to computer or printer by RS232, select speed of 38400 bps. The record shows Date, Time, Extension etc..  
Related setting: 1. UPT [5-01] 、 UPT [5-02] 、 UPT [5-04] 、 UPT [5-08]
7. Q: Do I have 2 outside (CO) lines were assigned to DISA , others to ring assignment ?  
A: Yes, you do. SP-428 system is enable an external caller to reach under the direction of the DISA.  
Related setting 1. UPT [1-18]

- 8. Q:** I bought a SP-428 and installed it with 2 cord phones and 6 handsets. Why are there 2 handsets not ring but others did when a incoming calls ?
- A:** It is a default value. If you want to have all received the ring when a incoming calls, you can setting the ring assignment to which will ring when incoming calls.  
Related setting 1. UPT [1-22], UPT [1-23]
- 9. Q:** If the extension has been setting to catch outside (CO) lines, how can we make internal call ?
- A:** Press “ \* “ , then press extension number for calling.
- 10. Q:** How can the SP428 be assigned the length of time or the number of times for DTAM ?
- A:** The SP428 DTAM was used by press of digital, for the DISA has 8M byte memory which including 1 minute of automatic DISA message and 100 minutes of DTAM message. Limited time or times can be setting by UPT  
Related setting 1. UPT [5-19], UPT [5-20], UPT [5-21]
- 11. Q:** How can I set the call forward mode, the incoming call will be transferred to a designate extension automatically under per conditions of setting mode ?
- A:** Users can set-up at the original extension (call forward ) or at the destination extension ( follow me ). Also, it provides the external call forward capability. Prevent user external call forward to international, or long distance call, you must input the restriction value on Toll Restriction Group (3-01) at Group 19. If you do not have any value at Group External call forward can not select follow me mode.  
Related setting 1. UPT [3-01], UPT [6-02]
- 12. Q:** How can I assign the toll restriction type to SP428 ?
- A:** You can use Station Lock to prevent someone calls out.  
You also can use Day Toll Restriction and Night Toll restriction to have restriction for dialing.  
Related setting 1. UPT [6-05], UPT [3-02], UPT [3-03], UPT [3-01]
- 13. Q:** Does it has a automatically call back service at caller ID feature?
- A:** It does. It is easy for user to make outgoing call when the they activate the caller ID call back feature.  
Related setting 1. UPT [1-59], UPT [3-11], UPT [3-12]
- 14. Q:** Does it has a function of auto trunk detection ?
- A:** Yes, it does. The trunk line could be detected automatically after system power on initialization.  
Related setting 1. UPT [1-58], UPT [1-16]
-

## APPENDIX A

Provides a quick access table of system default values, warning tone indications.

### A.1 Default Settings of Service Configuration

#### A.1.1 System Configuration

|  |          |                                      |
|--|----------|--------------------------------------|
| [1-01] Real Time Clock Setting: Date         |          |                                      |
| [1-02] Real Time Clock Setting: Time         |          |                                      |
| [1-03] Undefined Program                     |          |                                      |
| [1-04] Number of Digits                      | <b>3</b> | <b>digits</b>                        |
| [1-05] Undefined Program                     |          |                                      |
| [1-06] Undefined Program                     |          |                                      |
| [1-07] Port Assignment of Stations           |          | <b>11~40 or 101~130 or 1001~1030</b> |
| [1-08] Day/Night Switch Type                 | <b>0</b> | <b>MANUAL</b>                        |
| [1-09] DISA Voice Recording                  | <b>1</b> | <b>ENABLE</b>                        |
| [1-10] Console Station Assignment            |          |                                      |
| [1-11] System Speed Dialing Toll restriction | <b>0</b> | <b>DISABLE</b>                       |
| [1-12] System Speed Dialing                  |          | <b>20-99</b>                         |

### A.1.2 Group Configuration

|  |  |                                     |
|--|--|-------------------------------------|
| [1-13] Trunk Assignment of Station Groups    |  | For Station Group 1, default is 3   |
|  |  | For Station Group 2~8, default is 0 |
| [1-14] Station Groups Assignment of Stations |  | One Group                           |
| [1-15] Group Speed Dialing                   |  | 10-19                               |

### A.1.3 Trunk line Configuration

|                                   |   |                              |
|-----------------------------------|---|------------------------------|
| [1-16] Trunk Line Connection      | 1 | CO LINE (Auto Detect)        |
| [1-17] Trunk Line Dialing Type    | 0 | DTMF                         |
| [1-18] DISA Line Setting          | 0 | DISABLE                      |
| [1-19] Undefined Program          |   |                              |
| [1-20] Common Ring Type for Day   | 1 | Common                       |
| [1-21] Common Ring type for Night | 1 | Common                       |
| [1-22] Day Ring Assignment        |   | 101 ~102 ~103 ~104 ~105 ~106 |
| [1-23] Night Ring Assignment      |   | 101 ~102 ~103 ~104 ~105 ~106 |
| [1-24] Night Transfer             | 0 | DISABLE                      |
| [1-25] Private Line Setting       | 0 | DISABLE                      |
| [1-26] Private Line Pick-up       | 3 | Day:Yes Night:Yes            |
| [1-27] Day / Night Mode Switch    | 0 | Day                          |
| [1-28] Auto Fax Switching         | 0 | DISABLE                      |

### A.1.4 Station Configuration

|                                 |   |                  |
|---------------------------------|---|------------------|
| [1-29] Paging Capability        | 1 | YES              |
| [1-30] Undefined program        |   |                  |
| [1-31] Undefined Program        |   |                  |
| [1-32] Undefined program        |   |                  |
| [1-33] Call Time Limit          | 0 | UNRESTRICTED     |
| [1-34] Extension Priority       | 5 | 0(Low) ~ 9(High) |
| [1-35] DISA No Dial Mode        | 0 | CONSOLE          |
| [1-36] Pick-up Restriction      | 0 | NO               |
| [1-37] CO Receiving Restriction | 0 | NO               |

### A.1.5 Door Phone Configuration

|                              |   |                         |
|------------------------------|---|-------------------------|
| [1-38] Relay Assignment      | 0 | DISABLE for Relay 1/2/3 |
| [1-39] Door Phone Connection | 1 | ENABLE                  |
| [1-40] Door Ring Assignment  |   | None                    |

### A.1.6 Miscellaneous

|  |   |                        |
|--|---|------------------------|
| [1-41] Undefined Program                   |   |                        |
| [1-42] Call Waiting                        | 1 | ENABLE(Ring Reminding) |
| [1-43] System Data Reset                   | 0 | NOTHING                |
| [1-44] Incoming CO Line Ring Remind        | 0 | DISABLE                |
| [1-45] DISA Console Selection              | 0 | DISABLE                |
| [1-46] Undefined Program                   |   |                        |
| [1-47] Undefined Program                   |   |                        |
| [1-48] Ring Assignment for Console Station | 2 | LINEAR                 |
| [1-49] External Flash Key                  | 0 | DISABLE                |
| [1-50] Undefined Program                   |   |                        |
| [1-51] CO Line Pool Access Mode            | 2 | CIRCLE                 |
| [1-52] Undefined Program                   |   |                        |
| [1-53] Undefined Program                   |   |                        |
| [1-54] DISA Languages                      | 0 | The first language     |
| [1-55] Undefined Program                   |   |                        |
| [1-56] Configuration Information           |   |                        |
| [1-57] Firmware Information                |   |                        |
| [1-58] Auto Trunk Detection                | 1 | ENABLE                 |
| [1-59] Set Caller ID Trunk Code            | 0 | DISABLE                |

### A.2 Default Setting of Timer/Counter Programming

|                       |       |       |
|-----------------------|-------|-------|
| [2-01] Day Start Time | 08:00 | HH:MM |
| [2-02] Day End Time   | 18:00 | HH:MM |

|   |          |                      |                  |
|---|----------|----------------------|------------------|
| [2-03] Weekend Day Start Time                   |          | <b>08:00</b>         | <b>HH:MM</b>     |
| [2-04] Weekend Day End Time                     |          | <b>12:00</b>         | <b>HH:MM</b>     |
| [2-05] DISA No Answer Time                      |          | <b>15</b>            | <b>SS</b>        |
| [2-06] CO Line Open Loop Time                   |          | <b>200 – 700</b>     | <b>mS</b>        |
| [2-07] Alarm Duration                           |          | <b>10</b>            | <b>SS</b>        |
| [2-08] System Alarm Clock                       |          | <b>10 Sets: None</b> |                  |
| [2-09] Undefined Program                        |          |                      |                  |
| [2-10] Undefined Program                        |          |                      |                  |
| [2-11] Undefined Program                        |          |                      |                  |
| [2-12] CO Ring-off Time                         |          | <b>4</b>             | <b>S</b>         |
| [2-13] DISA Delay Answer Time                   |          | <b>0</b>             | <b>SS</b>        |
| [2-14] System Hold Recall Time                  |          | <b>00:30</b>         | <b>MM:SS</b>     |
| [2-15] Undefined Program                        |          |                      |                  |
| [2-16] Transfer Recall Time                     |          | <b>00:30</b>         | <b>MM:SS</b>     |
| [2-17] Call Forward Time (No Answer)            |          | <b>30</b>            | <b>SS</b>        |
| [2-18] Night Transfer Time (No Answer)          |          | <b>30</b>            | <b>SS</b>        |
| [2-19] Night Transfer Call Time Limit           |          | <b>03:00</b>         | <b>MM:SS</b>     |
| [2-20] Long Speech Time                         |          | <b>03:00</b>         | <b>MM:SS</b>     |
| [2-21] Door Ring Duration                       |          | <b>10</b>            | <b>SS</b>        |
| [2-22] Pulse M/B Ratio on CO line               | <b>0</b> | <b>33/66</b>         |                  |
| [2-23] Pulse M/B Ratio Fine Tuning              |          | <b>0</b>             | <b>ms</b>        |
| [2-24] DTMF Dial Time                           |          | <b>8</b>             | <b>10ms</b>      |
| [2-25] Pause Digit Time                         |          | <b>10</b>            | <b>100ms</b>     |
| [2-26] Dial PBX Flash Time                      |          | <b>40</b>            | <b>10ms</b>      |
| [2-27] Dial CO Flash Time                       |          | <b>1</b>             | <b>100ms</b>     |
| [2-28] Receive SLT flash time                   |          | <b>10:50</b>         | <b>10ms:10ms</b> |
| [2-29] SLT Inter-Digit Time                     |          | <b>00</b>            | <b>Seconds</b>   |
| [2-30] Door Lock Open Times                     | <b>1</b> | <b>Once</b>          |                  |
| [2-31] Midday Break Start Time                  |          | <b>00:00</b>         | <b>HH:MM</b>     |
| [2-32] Midday Break End Time                    |          | <b>00:00</b>         | <b>HH:MM</b>     |
| [2-33] Co Line Release Blocking Guard Time      |          | <b>800</b>           | <b>mS</b>        |
| [2-34] Co Line Pool Accessed Blocked Time       |          | <b>10</b>            | <b>SS</b>        |
| [2-35] CO Pulse Dialing-PPS (Pulse Per Second)  |          | <b>10</b>            | <b>PPS</b>       |
| [2-36] CO Pulse Dialing-IDP (Inter Digit Pause) |          | <b>50</b>            | <b>IDP</b>       |

## A.3 Default Setting of Toll Restriction

### A.3.1 Toll Restriction Assignments

|                               |    |              |
|-------------------------------|----|--------------|
| [3-01] Toll Group Definition  | 19 | Groups: None |
| [3-02] Day Toll Restriction   |    | None         |
| [3-03] Night Toll Restriction |    | None         |

### A.3.2 Call Screening Assignments

|                                  |   |         |
|----------------------------------|---|---------|
| [3-04] Call Screening Mode       | 0 | DISABLE |
| [3-05] Call Screening Capability | 0 | DISABLE |
| [3-06] Caller Password           | 0 | DAY     |

### A.3.3 Caller ID Assignments

|                                       |   |        |
|---------------------------------------|---|--------|
| [3-07] Caller ID Mode                 | 1 | ENABLE |
| [3-08] Caller ID Capability           | 1 | FSK    |
| [3-09] Set Caller ID Positive List    |   |        |
| [3-10] Set Caller ID Negative List    |   |        |
| [3-11] Caller ID Operator Access Code |   |        |
| [3-12] Caller ID Trim Code            |   |        |
| [3-13] SLT Transfer Caller ID Type    | 2 | FSK    |
| [3-14] Send Handset DTMF Dialing      | 1 | ENABLE |

## A.4 Default Settings of Passwords and Access Codes

### A.4.1 System Passwords Assignments

|                                    |   |              |
|------------------------------------|---|--------------|
| [4-01] System Programming Password |   | 168          |
| [4-02] Operator Password           |   | Press [HOLD] |
| [4-03] DISA Toll Password          | 3 | Classes      |
| [4-04] Toll Password               | 5 | Classes      |

### A.4.2 System Access Codes Assignments

|                              |   |                |
|------------------------------|---|----------------|
| [4-05] Host PBX Access Code  |   | 3-digits: None |
| [4-06] Line Pool Access Code | 0 |                |

|                                     |   |      |
|-------------------------------------|---|------|
| [4-07] DTAM Password Erasing        | 0 | NO   |
| [4-08] Undefined Program            |   |      |
| [4-09] Undefined Program            |   |      |
| [4-10] Undefined Program            |   |      |
| [4-11] DECT Subscribe               |   |      |
| [4-12] DECT De-subscribe            |   |      |
| [4-13] DECT Delete Handset Database |   |      |
| [4-14] DECT IPEI Information        |   |      |
| [4-15] DECT Frequency Band          |   |      |
| [4-16] DECT CU System ID            |   |      |
| [4-17] Base Station Attach          |   | None |
| [4-18] Base Station Version         |   |      |

## A.5 Default Settings of SMDR and DTAM

### A.5.1 SMDR Assignments

|                                 |   |                                  |
|---------------------------------|---|----------------------------------|
| [5-01] SMDR Operation Mode      | 3 | IN AND OUT                       |
| [5-02] Hold Time Recording Mode | 0 |                                  |
| [5-03] SMDR Start Time          |   | 00:00 MM:SS                      |
| [5-04] SMDR Header              |   | Null                             |
| [5-05] Undefined Program        |   |                                  |
| [5-06] Undefined Program        |   |                                  |
| [5-07] Undefined Program        |   |                                  |
| [5-08] Set SMDR Output Port     |   | 8N1/ baud 38400/ no flow control |
| [5-09] Undefined Program        |   |                                  |
| [5-10] Undefined Program        |   |                                  |
| [5-11] Undefined Program        |   |                                  |
| [5-12] Undefined Program        |   |                                  |
| [5-13] Undefined Program        |   |                                  |
| [5-14] Undefined Program        |   |                                  |
| [5-15] Undefined Program        |   |                                  |
| [5-16] Undefined Program        |   |                                  |
| [5-17] Undefined Program        |   |                                  |

---

## A.5.2 DTAM Assignments

|                                      |          |                    |
|--------------------------------------|----------|--------------------|
| [5-18] Undefined Program             |          |                    |
| [5-19] DTAM Recording Time           |          | <b>30 seconds</b>  |
| [5-20] Set DTAM Quota                |          | <b>10 Messages</b> |
| [5-21] Allocation of DTAM to Station | <b>1</b> | <b>SYSTEM</b>      |

## A.6 Default Settings of Station Programming

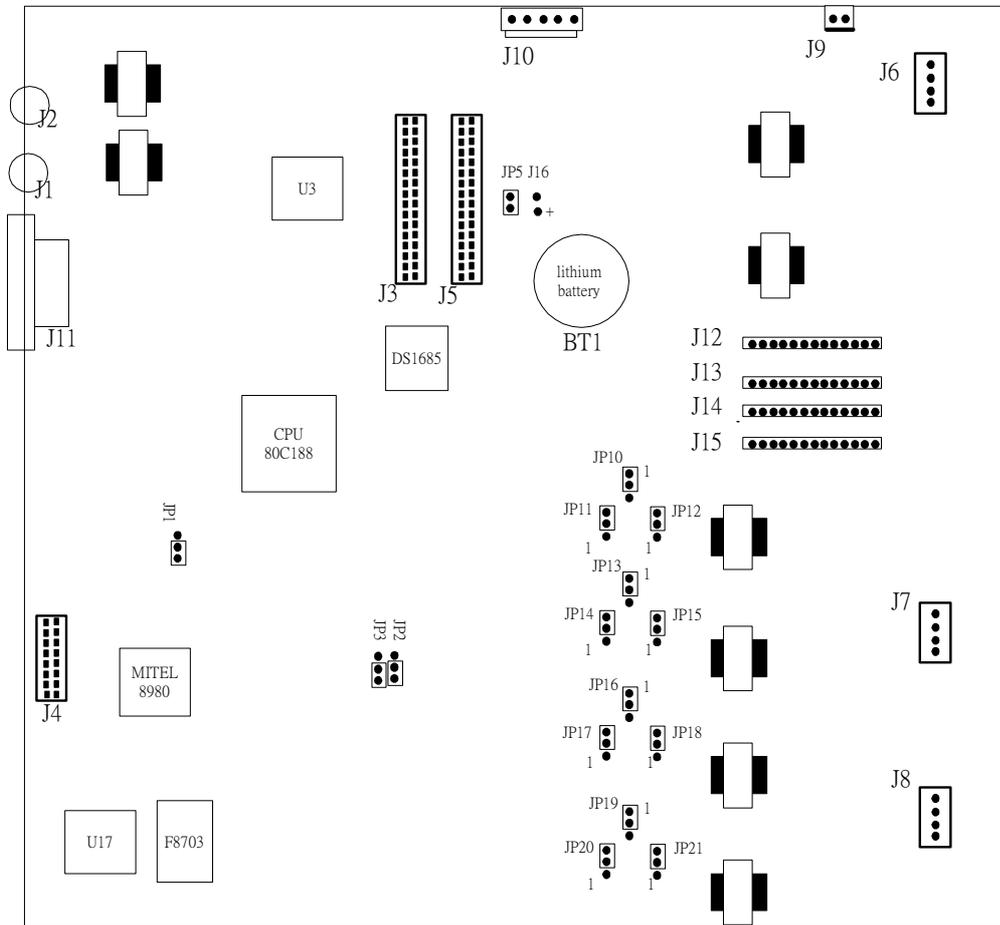
### A.6.1 System Programming

|                                |          |                    |
|--------------------------------|----------|--------------------|
| [6-01] Call Forward Inhibit    | <b>0</b> | <b>NO</b>          |
| [6-02] Call Forward            | <b>0</b> | <b>DISABLE: NO</b> |
| [6-03] Undefined Program       |          |                    |
| [6-04] Undefined Program       |          |                    |
| [6-05] Station Lock            | <b>0</b> | <b>UNLOCK</b>      |
| [6-06] Warning Tone            | <b>1</b> | <b>YES</b>         |
| [6-07] Auto Trunk Line Hunting | <b>0</b> | <b>DISABLE</b>     |

## A.7 Default Setting on PBX Board

The system has several modules with different functions. Some modules are designed by hardware configuration, such as PBX board and trunk functional board. Setting hardware jumpers could configure characteristic of the trunks.

**Jumpers on PBX board**



BT1 : 3Volts Li-battery socket. this is for the lithium batteries only

**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

JP2,JP3 : PIN toward 8703 chip is PIN1. Short PIN1&2 to enable echo cancellation(default). Short PIN2 &3 to disable echo cancellation.

JP5 : Short to connect BT1 battery for save system data after power be turned off. Open the JP5, system data will be clear after power be turned off.

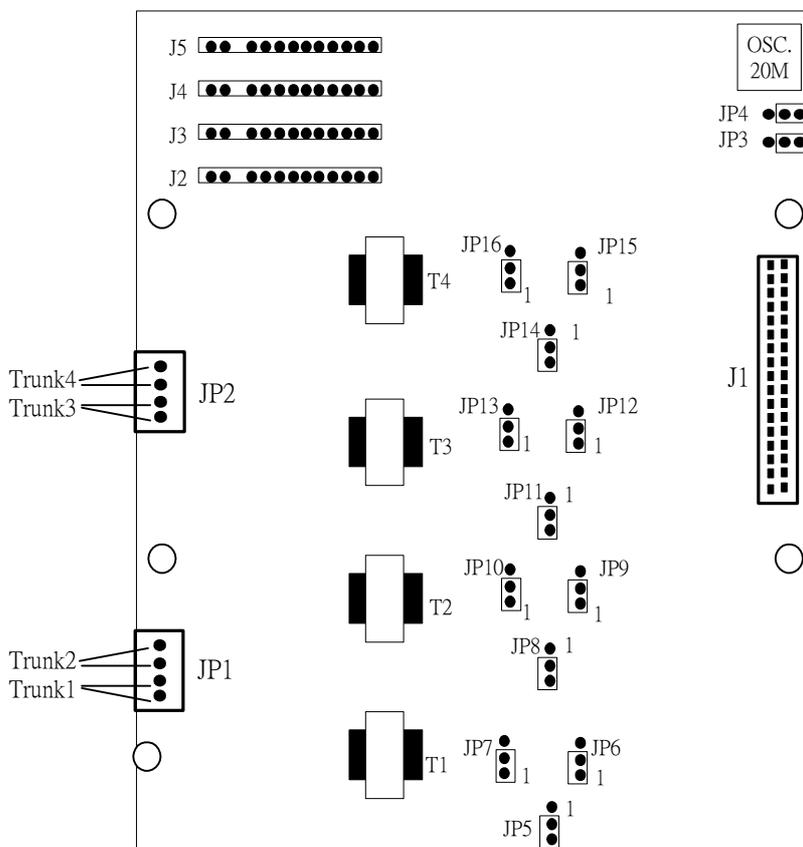
JP10~21 : Select Trunk gain. Each trunk has 3 jumpers, e.g. JP10, JP11, JP12 groUPTng for trunk 1. PIN marked 1 is PIN1. Trunk setting table :

| Setting |           | High Transmission Gain<br>(Default) | Low Transmission Gain |
|---------|-----------|-------------------------------------|-----------------------|
| Trunk1  | JP10      | Connect Pin1,Pin2                   | Connect Pin2, Pin3    |
|         | JP11,JP12 | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
| Trunk2  | JP13      | Connect Pin1,Pin2                   | Connect Pin2, Pin3    |
|         | JP14,JP15 | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
| Trunk3  | JP16      | Connect Pin1,Pin2                   | Connect Pin2, Pin3    |
|         | JP17,JP18 | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
| Trunk4  | JP19      | Connect Pin1,Pin2                   | Connect Pin2, Pin3    |
|         | JP20,JP21 | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |

## A.8 Default Setting on Trunk Functional Card

The system has several modules with different functions. Some modules are designed by hardware configuration, such as PBX board and trunk functional board. Setting hardware jumpers could configure characteristic of the trunks.

### Jumpers on Trunk Functional Card



JP3,JP4 : PIN toward edge of board is PIN1. Short PIN1&2 to enable echo cancellation (default). Short PIN2 &3 to disable echo cancellation.

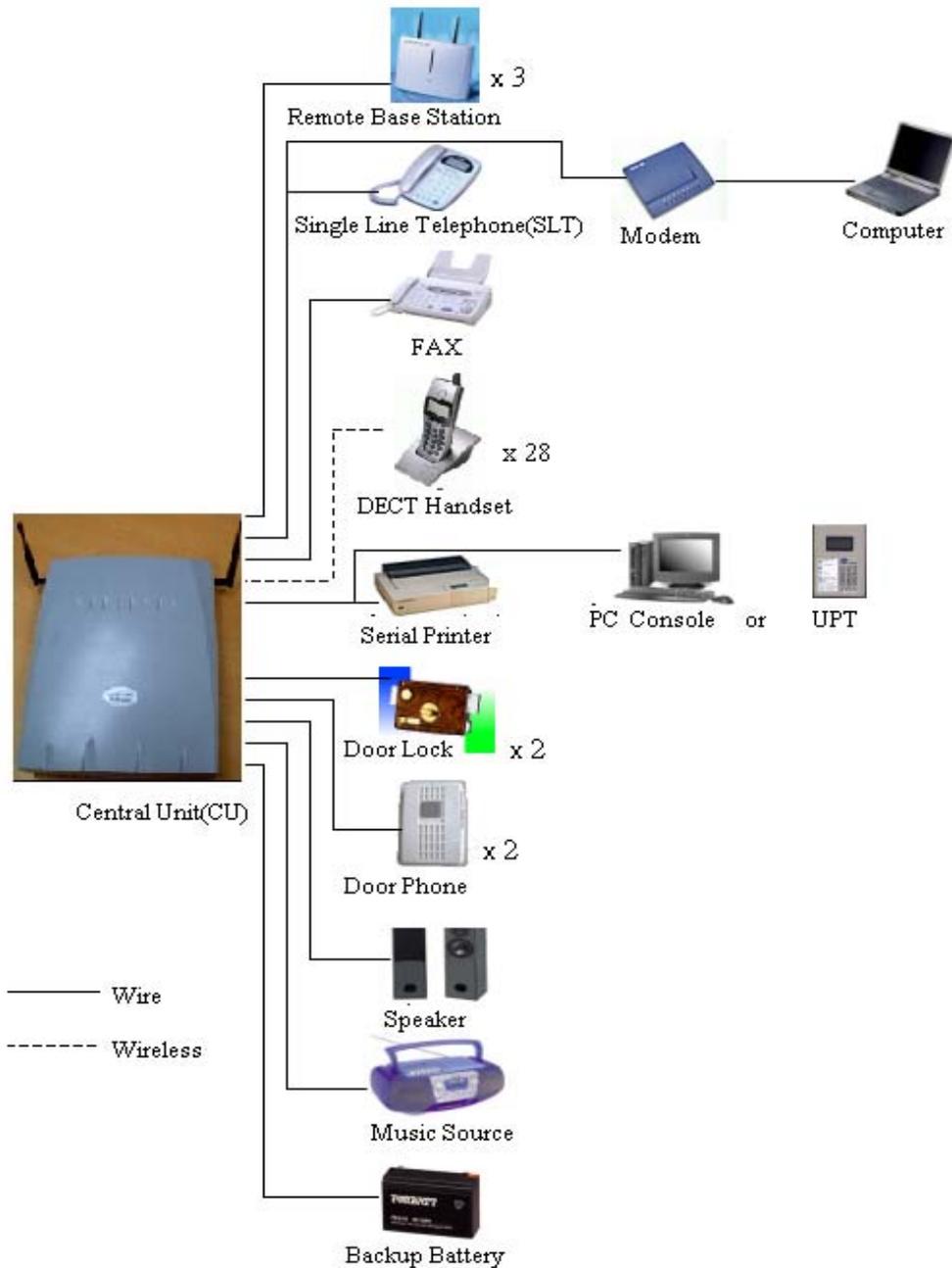
JP5~16 : Select Trunk gain. Each trunk has 3 jumpers, e.g. JP5, JP6, JP7 for trunk 1. PIN marked 1 is PIN1. Trunk setting table :

| Setting          |           | High Transmission Gain<br>(Default) | Low Transmission Gain |
|------------------|-----------|-------------------------------------|-----------------------|
| Jumpers of Trunk |           |                                     |                       |
| Trunk1           | JP5       | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
|                  | JP6,JP7   | Connect Pin 1,Pin2                  | Connect Pin2, Pin3    |
| Trunk2           | JP8       | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
|                  | JP9,JP10  | Connect Pin 1,Pin2                  | Connect Pin2, Pin3    |
| Trunk3           | JP11      | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
|                  | JP12,JP13 | Connect Pin 1,Pin2                  | Connect Pin2, Pin3    |
| Trunk4           | JP14      | Connect Pin2,Pin3                   | Connect Pin1, Pin2    |
|                  | JP15,JP16 | Connect Pin 1,Pin2                  | Connect Pin2, Pin3    |

## APPENDIX B.

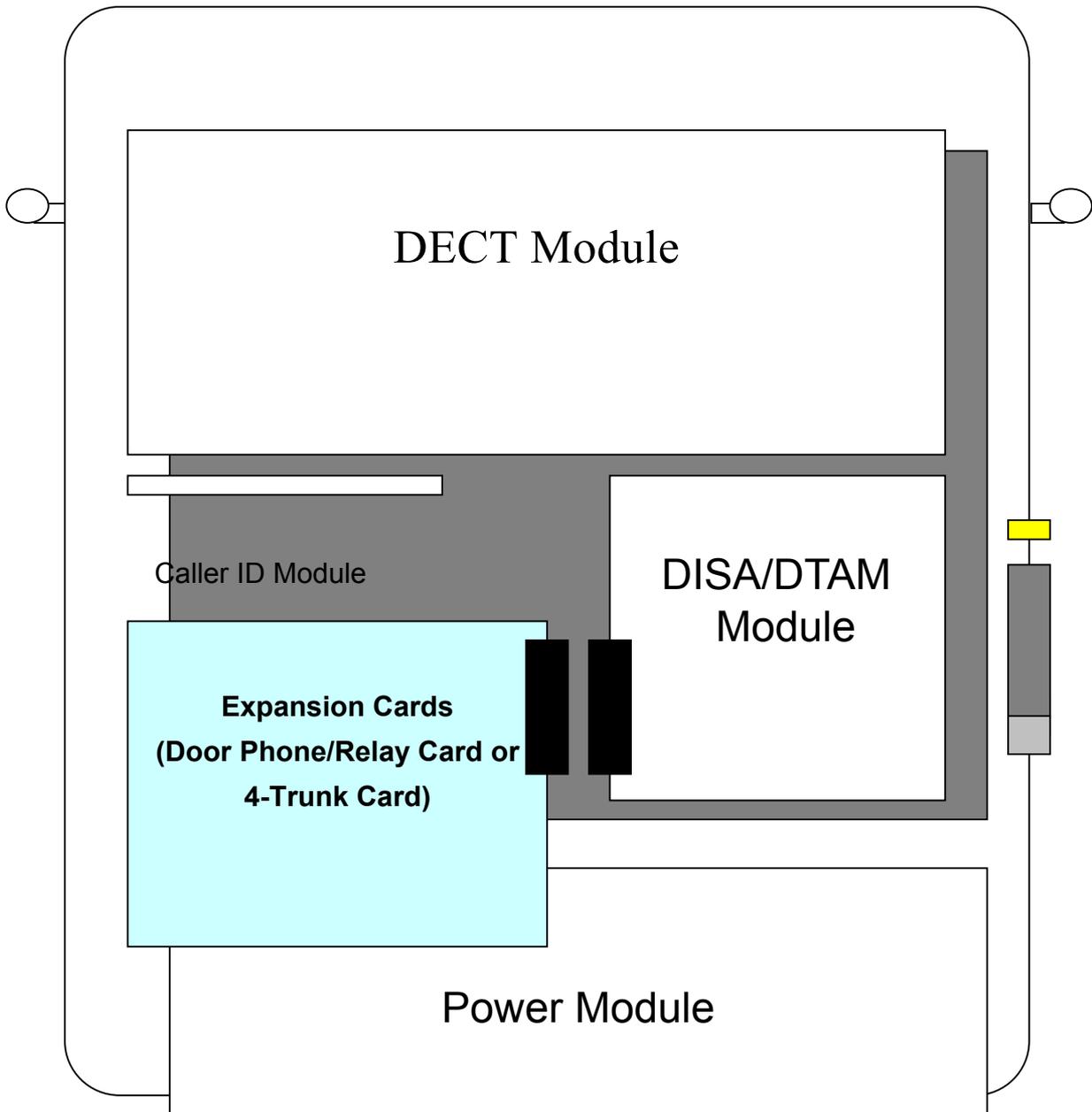
### B.1 External Devices Connection Diagram

#### 428 Series System

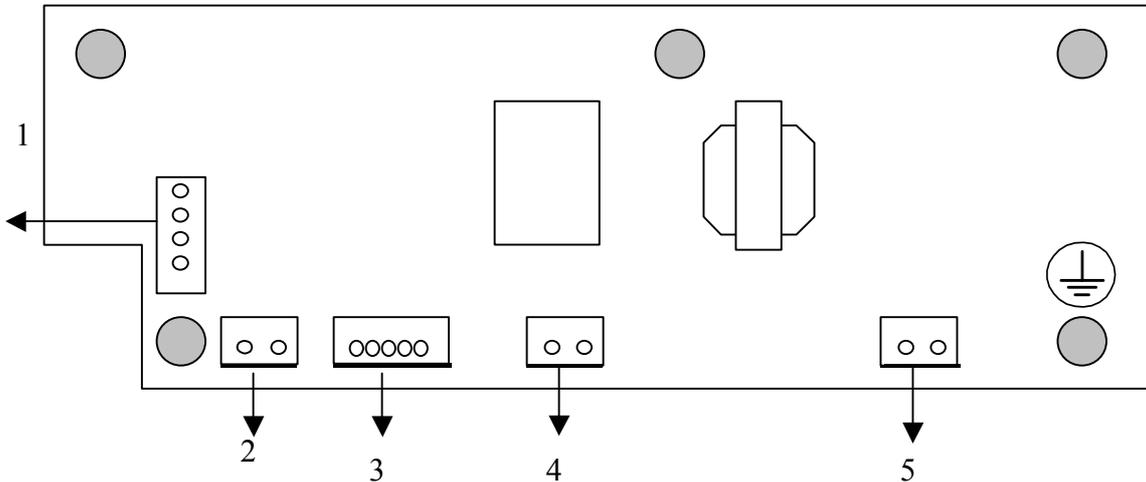


## B.2 System Module

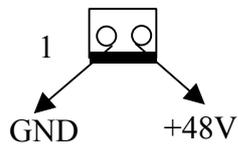
### B.2.1 Inside View of System



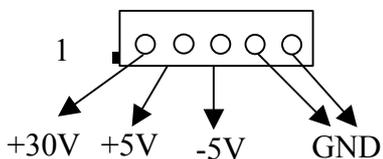
## B.2.2 Power Module



1. System AC power ON/OFF Switch connector **J6**: connect to power switch.
2. 48 Volts DC Power Connector **J2**: connect to DECT module connector **TP12**, for remote base station power feeding.

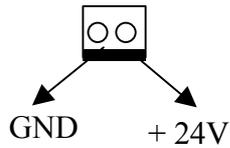


3. Module Interface Connector **J4**: connect to PBX module connector **J10**.



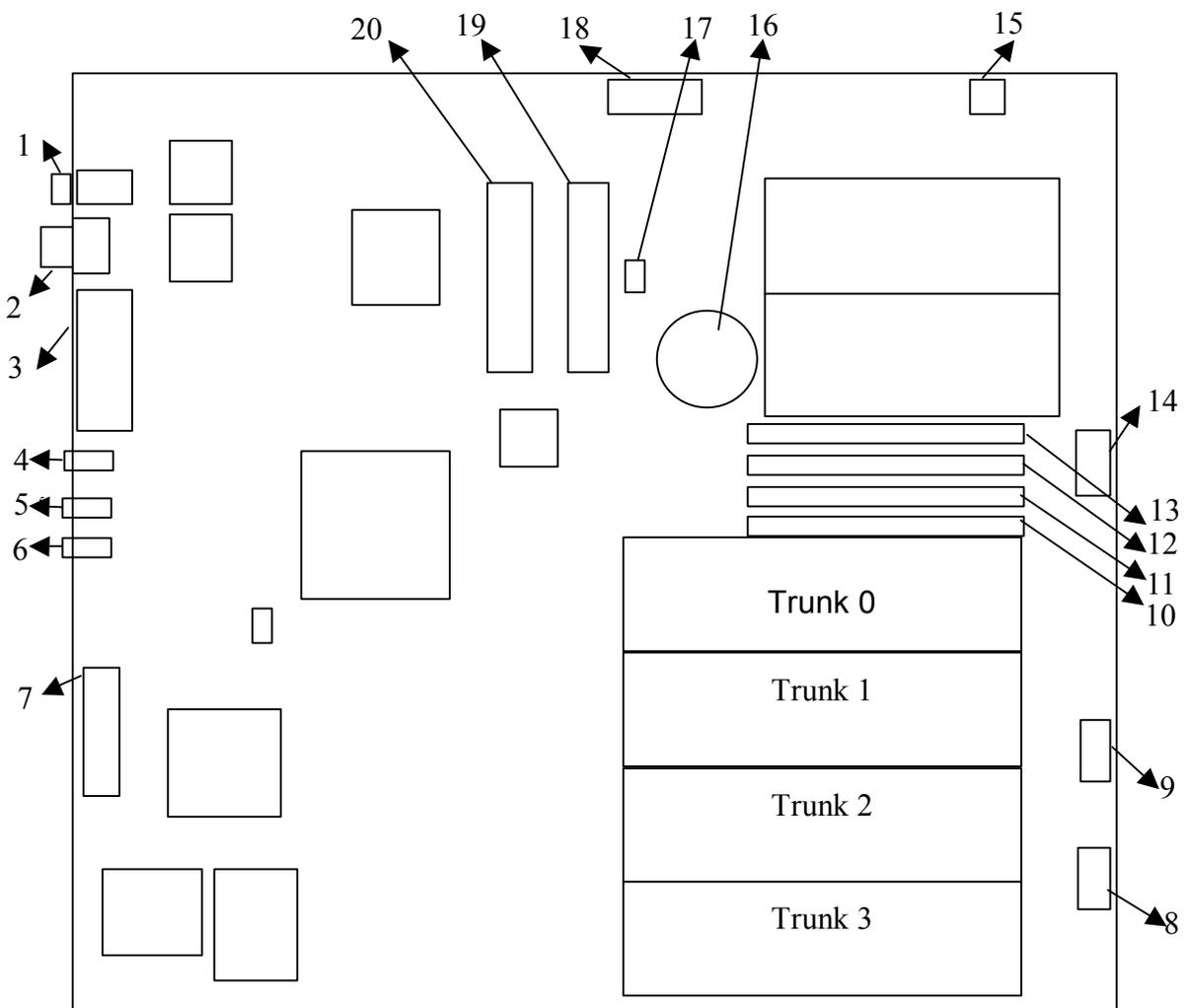
4. Battery Power Connector **J1**: connect to battery power..

**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



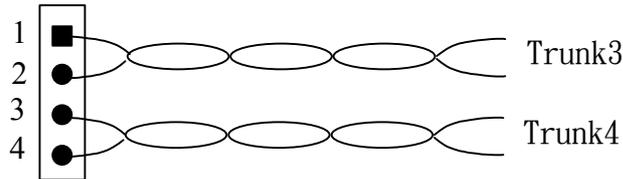
5. Ring Power Connector J5(non-polarized): connect to PBX module connector J9 (non-polarized).

### B.2.3 PBX module

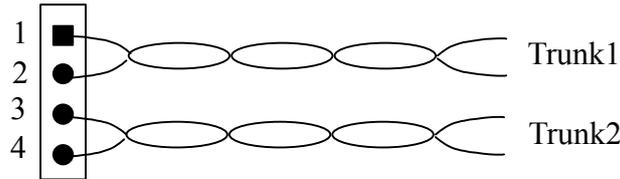


1. Music IN Connector J2: connect to music source.
2. Broadcast OUT Connector J1: connect to loudspeaker..
3. RS232 Connector J11: connect to PC COM port
4. LEDs: upside for power and downside for run indications.
5. LED TK0/1: upside for Trunk 2 and downside for Trunk 1 indicaion.
6. LED TK2/3: upside for Trunk 4 and downside for Trunk 3 indication.

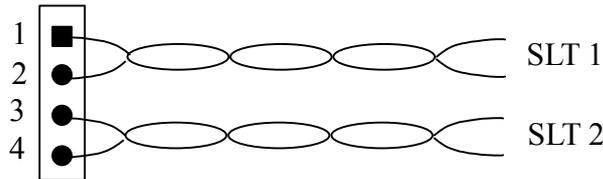
7. Module Interface Connector J4: connect to DECT module connector JP1.
8. Trunk port connector J8: PIN 1&2 for trunk 3, PIN 3&4 for trunk 4.



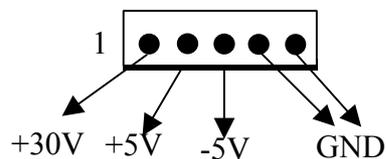
9. Trunk port connector J7: PIN 1&2 for trunk 1, PIN 3&4 for trunk 2.



10. Module Interface Connector J12: caller ID module plug in for trunk 1.
11. Module Interface Connector J13: caller ID module plug in for trunk 2
12. Module Interface Connector J14: caller ID module plug in for trunk 3.
13. Module Interface Connector J15: caller ID module plug in for trunk 4.
14. SLT port Connector J6: PIN 1&2 for SLT 1, PIN 3&4 for SLT 2.

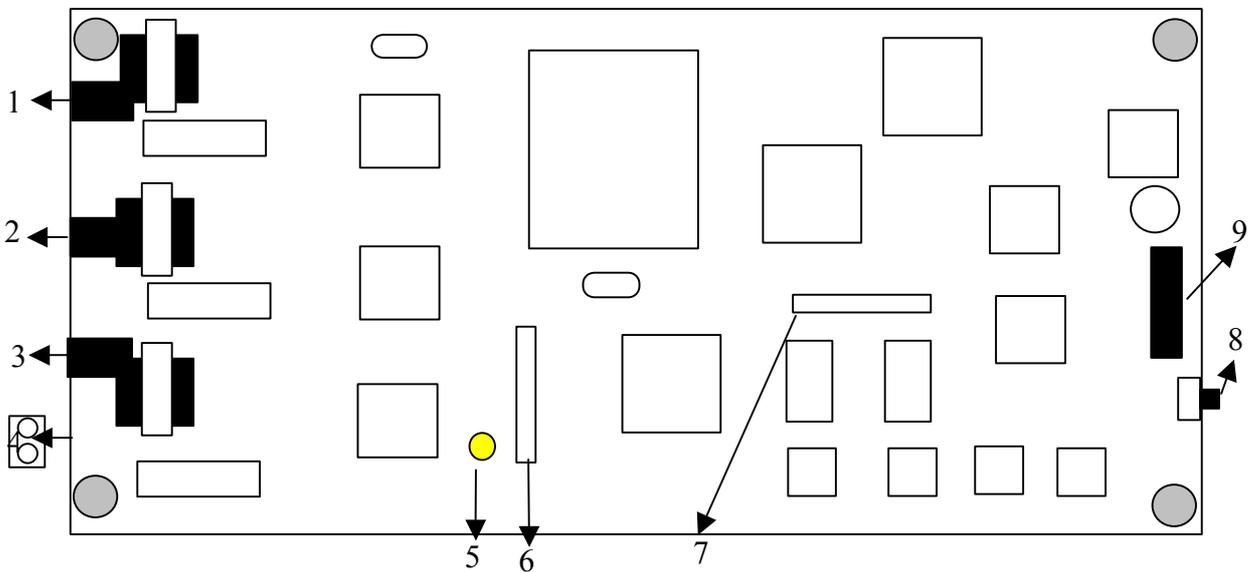


15. Ring Power Connector J9: connect to power module connector J5.
16. 3Volts Li-battery socket. this is for the lithium batteries only  
**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
17. Battery Backup Database Clear Jumper JP5: opened for non-battery (clear).
18. Module Interface Connector J10: connect to power module connector J4.



19. Module Interface Connector J5: connect to door phone/relay module connector.
18. Module Interface Connector J3: connect to DISA/DTAM module connector.

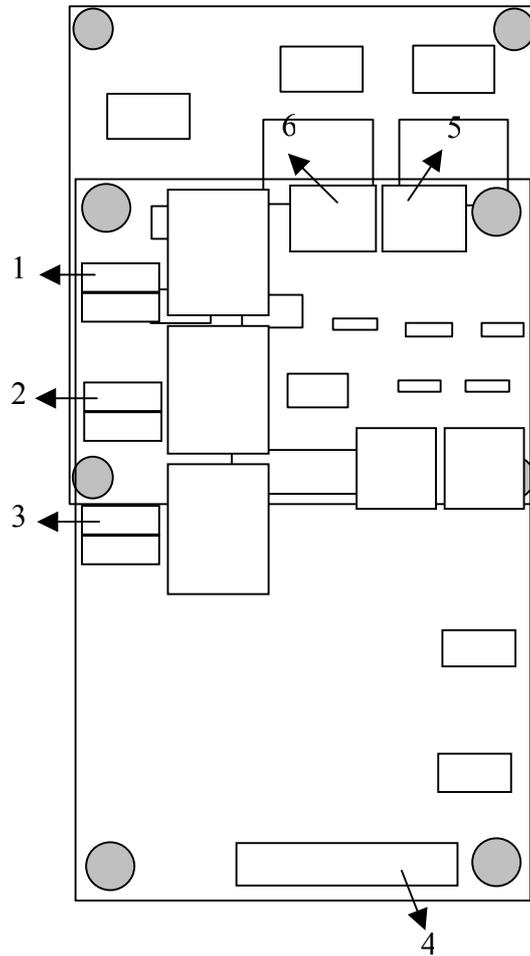
### B.2.4 DECT Module



1. Connector TP15: connect to Remote Base Station(RBS) 1 by using AWG-24 wire (2-wired, non-polarized).
2. Connector TP17: connect to Remote Base Station(RBS) 2 by using AWG-24 wire (2-wired, non-polarized).
3. Connector TP18: connect to Remote Base Station(RBS) 3 by using AWG-24 wire (2-wired, non-polarized).
4. 48 Volts DC Power Connector TP16: connect to Power Module Connector J2 (2-wired, non-polarized).
5. Run Led Indication D1.
6. JP3: RS232 connector for download program.
7. TP20: all opened in 428 series system.
8. SW1: DECT function button for registering and system resetting to default.
9. Module Interface Connector JP1: connect to PBX module J4.



### B.2.5 DISA/DTAM Module

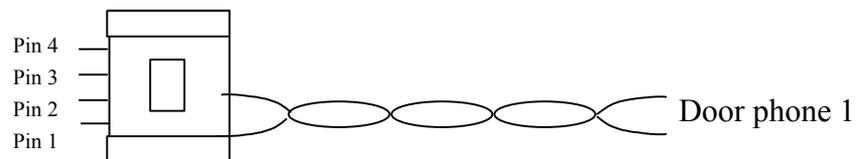


1. Module Interface Connector : connect to PBX module connector .

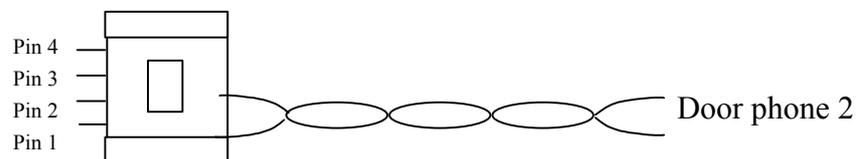
### B.2.6 Expansion Cards

#### Door phone/Relay Functional Card (DF)

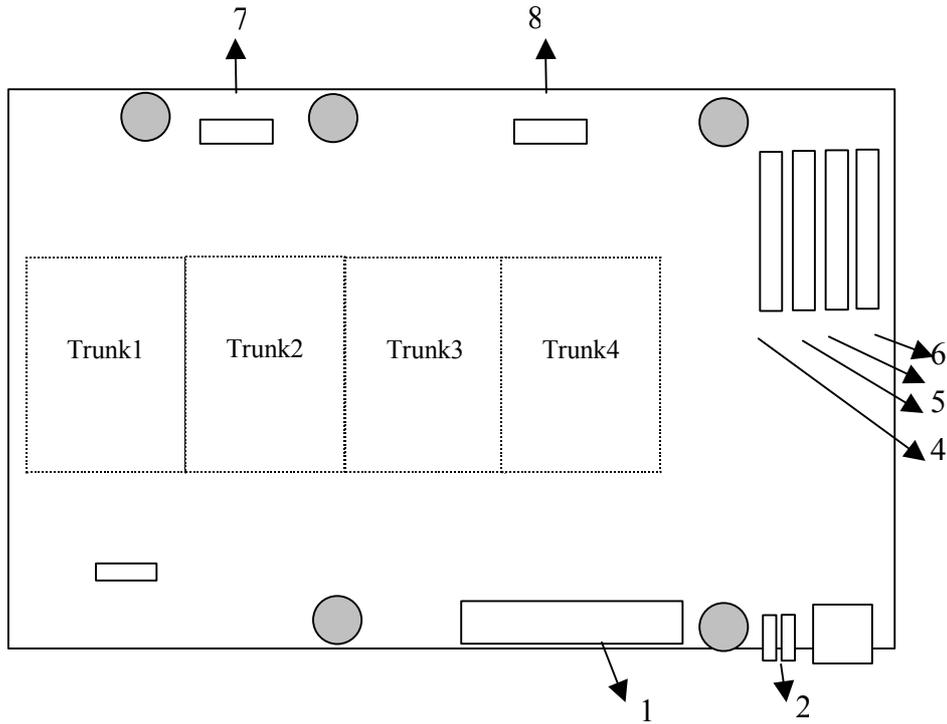
1. Relay Control Connector P3: connect to door lock or other device (non-polarized).
2. Relay Control Connector P2: connect to door lock or other device (non-polarized).
3. Relay Control Connector P1: connect to door lock or other device (non-polarized).
4. Module Interface Connector J1: connect to PBX module connector J5.
5. Door phone Connector JP2: connect to door phone 1



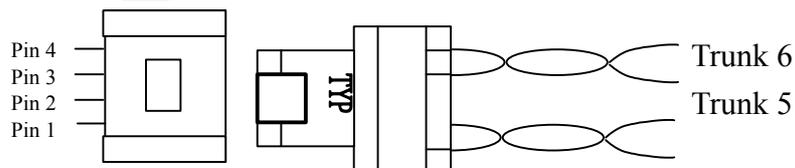
6. Door phone Connector JP3: connect to door phone 2.



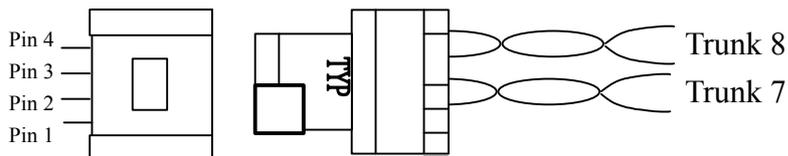
### Trunk Functional Card (TF)



1. Trunk Functional board Connector **J1**: connect to PBX module connector **J5**.
2. Echo Cancellation jumper **JP3**: for trunk1 and trunk2; **JP4**: for trunk3 and trunk4. Short PIN 1,2 to enable echo cancellation. Short PIN 2,3 to disable echo cancellation..
3. Module Interface Connector **J2**: caller ID module plug in for trunk 1.
4. Module Interface Connector **J3**: caller ID module plug in for trunk 2.
5. Module Interface Connector **J4**: caller ID module plug in for trunk 3.
6. Module Interface Connector **J5**: caller ID module plug in for trunk 4.
7. Trunk Port Connector **JP1**: PIN 1&2 for trunk 5, PIN 3&4 for trunk 6.

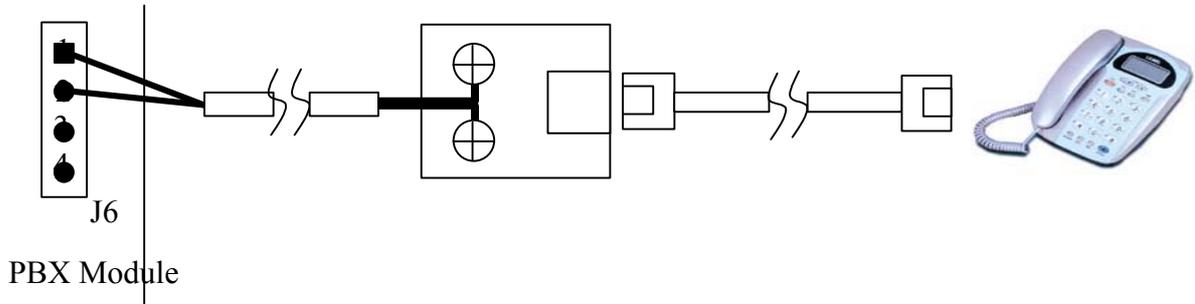


8. Trunk Port Connector **JP2**: PIN 1&2 for trunk 7, PIN 3&4 for trunk 8.

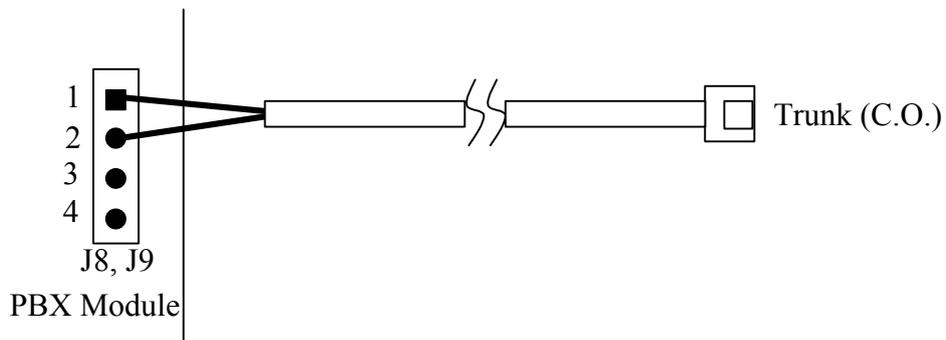


### B.3 External Device Installation

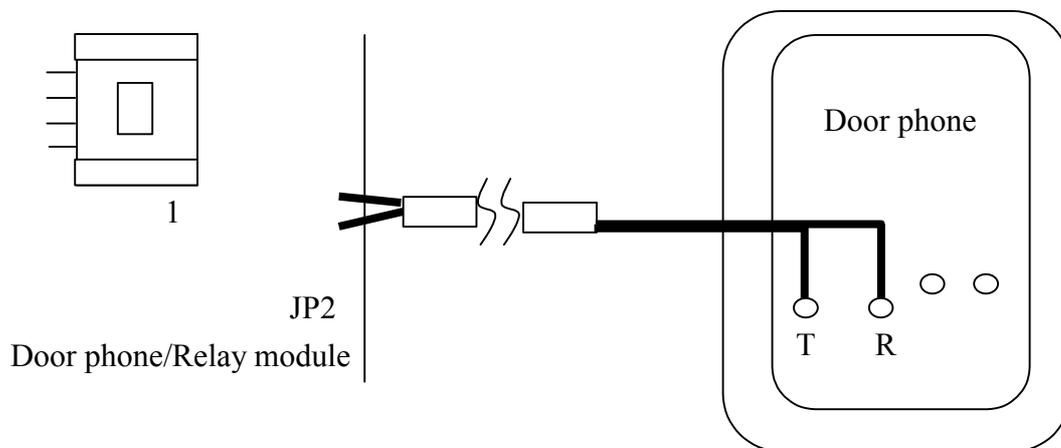
#### B.3.1 SLT Installation



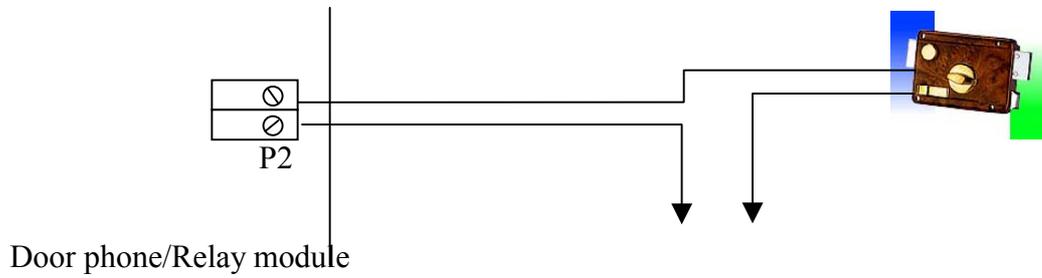
#### B.3.2 Trunk Line Installation



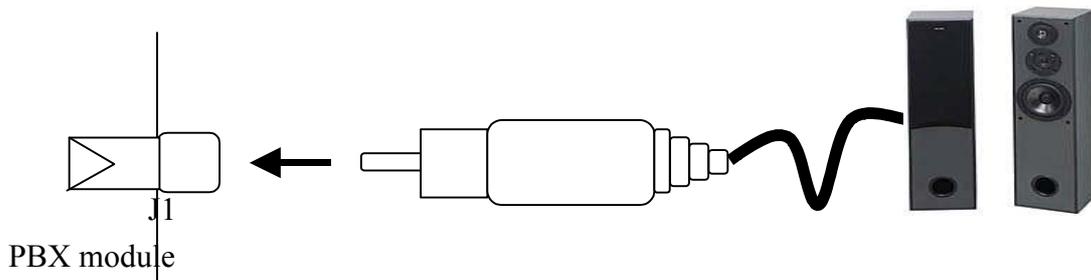
#### B.3.3 Door Phone Installation



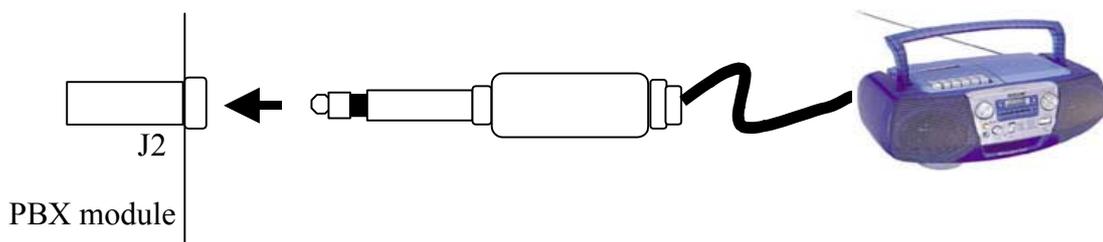
### B.3.4 Door Lock Installation



### B.3.5 Paging Installation



### B.3.6 Music Source Installation



### B.3.7 Backup Battery Installation

Power off central unit, and connect 24V external battery to **J1** on power module

## APPENDIX C.

### C.1 UPT (SYSTEM PROGRAMMING) Brief

User Programming Terminal (UPT) can be used to configure the 428 series system. UPT has 12 numeral keys, 6 functional keys and a LCD display to program system parameters. The numeral keys are designed for entering parameters. The functional keys are used to select items of manual. The display has two lines with 16 characters per line.



## APPENDIX D.

### REMOTE PROGRAMMING MODE FROM USER'S SIDE

**D.1** This chapter provides the remote programming information with step-by-step instruction. **How to Enter Programming Mode from Customer Side**

*Talk on line with your customer.*

- (a) Press [Flash] hook (cord phone) or [R]/[INT] (cordless phone)
- (b) Dial [7]
- (c) Dial [0]
- (d) Dial [0]
- (e) Enter *Operator Password*
- (f) Press [#]; the Customer Side enters controlled mode.  
The trunk line will keep for remote programming.
- (g) On-hook