



PBX-64 Analog and IP Phone System Installation

I. Introduction

This PBX system is specially designed to accommodate Talk-A-Phone Emergency/Information Phones, both analog and VoIP. Versatile and robust, these full-featured PBXs provide a complete head-end solution.

Each of these PBX systems ships preprogrammed from the factory per the requirements specified on the submitted preference form.

Note: Do NOT adjust any dipswitches or settings that are not outlined in the Installation Instructions. Talk-A-Phone authorization is required for adjustment of such dipswitches and settings.

Iwatsu technical/installation documents may have been provided with this PBX Installation document. These Iwatsu technical/installation documents are to be used only as a reference. Do NOT follow instructions on Iwatsu documents unless instructed by a Talk-A-Phone technician.

II. Core Components

| Qty. | Iwatsu Part No. | Description |
|------|-----------------|--|
| 1 | IX-CME | Gateway Controller Cabinet |
| 1 | IX-PWSE | Main Power Supply |
| 1 | IX-408 | 8-Port Digital Station / 4-Port Trunk Card |
| 1 | IX-12KTD-3 | Digital Attendant Phone |
| 1 | IX-CCU | Central Control Unit Card |
| 1 | IX-CCSU | Central Control Sub Unit Card |

III. General Hardware Installation

To install the PBX-64 Phone System, after site preparation (including provision of power and CO / PSTN lines), follow these steps:

1. Install the IX-PWSE Power Supply into the dedicated slot on the left side of the IX-CME by sliding it between the left and right guide rails located on the lower shelf bracket. Make sure that the power supply is inserted deep enough so that all of the connector pins make complete contact with those on the backplane motherboard. Make sure the AC power cable attached to the IX-CME is pulled out to the left and for easy access after power supply installation.
2. Secure the IX-PWSE to the upper and lower shelf brackets with two black zinc plated screws provided with the IX-CME.
3. Ensure the green ground wires attached to the IX-PWSE are secure in place with the star washer between the screw and the metal end of the green ground wire (Factory installed).
4. Mount the IX-CCSU daughterboard to the IX-CCU card by matching the CNCCSU1 to CNCCU1 connectors and CNCCSU2 to CNCCU2 connectors on the IX-CCU card and the IX-CCSU card respectively.
5. Slide the IX-CCU/IX-CCSU cards into the slot marked CCU/CCSU at the bottom of the IX-CME cabinet. Make sure that the card is inserted deep enough for all the connector pins to make complete contact with those of the backplane motherboard. Secure the card stopper bracket (located next to the left locking tab) with the screw provided.

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PBX-64 Analog and IP Phone System Installation

6. Install the IX-408 card into slot #1 of the IX-CME cabinet. If there is more than one IX-408 card, install them into the subsequent slots. Make sure that the card is inserted deep enough for all connector pins to make complete contact with those on the backplane motherboard.
7. Install the "KT" punchdown block:
 - a. Route the 25-pair cable through the cable raceway.
 - b. Plug the 25-pair male amphenol connector from the "KT" punchdown block into the IX-408 card with the corresponding port number. If applicable, repeat for each successive "KT" punchdown block.
8. If an IX-MBU does not need to be installed, skip to step (9).

If installing an IX-MBU (model **PBX-MBU**) card into the IX-CME:

- a. For systems with one IX-408 card, slide the card into slot #2. For systems with more than one IX-408 card, slide the card into the slot immediately following the last IX-408 card.
 - b. Make sure that the card is inserted deep enough for all connector pins to make complete contact with those on the backplane motherboard.
 - c. Secure the card stopper bracket with the two screws provided if no other cards are to be installed.
 - d. Using the Unshielded Twisted Pair (UTP) straight-through cable (provided with the IX-MBU), connect the CCU port on the IX-MBU card to the LAN2 port on the IX-CCSU card.
 - e. Connect the LAN port on the IX-MBU card to the Local Area Network (LAN).
 - f. If there are analog (IX-8SUBS-3) cards to be installed, continue onto step (9). Otherwise, continue onto step (10).
9. If installing an IX-8SUBS-3 (model **PBX-8MB**) card into the IX-CME:
 - a. The system may have shipped with IX-8ESUBS (model **PBX-8DB**) daughterboards to provide additional analog port capacity. If so, mount the IX-8ESUBS daughterboard onto an IX-8SUBS-3 card using the CN1 and CN2 connectors. Each IX-8SUBS-3 motherboard can support up to one (1) daughterboard. All daughterboards must be mounted to a motherboard.
 - b. When installing the IX-8SUBS-3 cards, it should be noted that cards without daughterboards should always be grouped to the right of cards with motherboards. That is to say, install the motherboards with daughterboards first, and then proceed with installing the motherboards without daughterboards.

For systems with more than one IX-408 card and without an IX-MBU card, slide the IX-8SUBS-3 card into the slot immediately following the last IX-408 card. For systems with an IX-MBU card, slide the IX-8SUBS-3 card into the slot immediately following the IX-MBU.
 - c. Slide any additional IX-8SUBS-3 cards into subsequent slots.
 - d. Make sure that the card is inserted deep enough for all connector pins to make complete contact with those on the backplane motherboard.
 - e. Secure the card stopper bracket with the two screws provided if no other cards are to be installed.

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PBX-64 Analog and IP Phone System Installation

10. Install the "SLT" punchdown block:

- a. Route the 25-pair cable through the cable raceway.
- b. Plug the 25-pair male amphenol connector from the "SLT" punchdown block into the IX-8SUBS-3 card with the corresponding port number. Repeat for each successive "SLT" punchdown block.

IV. Power

IX-CME:

Connect the three-prong plug from the IX-CME to an AC outlet.

Digital Attendant Phones:

The IX-12KTD-3 Digital Attendant Phone is line-powered.

Digital Attendant Phones:

The IX-12IPKTD IP Attendant Phone (model **PBX-IPPHONE**) includes an IX-IPKTAC 12 Volt AC Power Supply. Connect this power supply to an AC outlet.

V. Wiring

Analog Stations:

Connect the tip and ring (green and red) for each Emergency / Information Phone to the appropriately labeled pins on the "SLT" punchdown block (e.g. 97, 98, 99).

Digital Attendant Phones:

The IX-12KTD-3 Digital Attendant Phone connection is made with one pair telephone wire to the "KT" punchdown. Connect the IX-12KTD-3 to the appropriately labeled circuit on the punchdown block (e.g. KT1, KT2). The loop limit of the digital attendant phones is 1,000 feet. This limitation can be extended through the use of repeaters (model **PBX-RPTR**).

IP Attendant Phones:

The IX-12IPKTD IP Attendant Phone connects via Ethernet (Cat5e or better) to your network.

VI. Connecting to a Local Area Network (LAN)

IX-MBU:

Connect the LAN port on the IX-MBU card to the Local Area Network.

IP Attendant Phones:

Connect the LAN port on the IX-12IPKTD IP Attendant Phone to your network.

PBX-64 Analog and IP Phone System Installation

VII. Programming a VOIP-1-2-4-8 Interface Unit for the PBX System

Aside from the general VOIP-1-2-4-8 programming, there are considerations that need to be made specifically for operation with the PBX System.

Note: Make sure to click on **OK** to temporarily save changes in a specific programming section before clicking on a different section in the navigation tree in the left column.

Once programming has been completed on the VOIP-1-2-4-8, click on **Save & Reboot** in the navigation tree and click on **OK**.

Any programming changes may be lost if you do not keep these notes in mind.

Phone Book Configuration:

1. Check or enable the **Register with Gatekeeper** option.
2. Under "Gatekeeper RAS Parameters" section, set the "Gatekeeper IP Address" to the LAN2 IP address of the PBX. Set the "Port Number" to **5060**.
3. Under the "SIP Parameters" section, set the "SIP Signaling Port" to **5060**. Check or enable the **Enable SIP Proxy** option.
4. Under the "Proxy Parameters" section nested inside the "SIP Parameters" section, set "Proxy Domain Name / IP Address" to the LAN2 IP address of the PBX. Set the "Port Number" to **5060**. Set "Re-registration Time" to **30** seconds.

Inbound Phone Book Entry:

1. The Inbound Phone Book for the VOIP-1-2-4-8 describes the dialing sequences required for a call to originate remotely from any other VOIP-1-2-4-8, Attendant Phone, or Emergency / Information Phone on the PBX system. In other words, the Inbound Phone Book is used to assign a number to each local channel on the VOIP-1-2-4-8 Interface Unit. Each channel needs to be assigned the appropriate SIP extension that was specified on the PBX Planning Form submitted at time of order. Enter the assigned extension into the "Remove Prefix" field.
2. Check or enable the **Register with SIP Proxy** option. Registration is required by an IP "SLT" on the PBX system.

Outbound Phone Book Entry:

1. Check or enable the **Use as default entry** option. The "Destination Pattern" field will now be labeled as "Any Number". This option will allow the Emergency / Information Phone connected to the VOIP-1-2-4-8 Interface Unit to dial any extension on the PBX system. If you wish to restrict the outbound dialing from the VOIP-1-2-4-8, then uncheck or disable the **Use as default entry** option and set the "Destination Pattern" to a specific extension.
2. Set "Total Digits" to the number of digits that the Emergency / Information Phone will dial.
3. Set the "IP Address" to the LAN2 IP address of the PBX.
4. Select **SIP** for "Protocol Type".
5. Under the "SIP" section, select **UDP** and set the "SIP Port Number" to **5060**.

PBX-64 Analog and IP Phone System Installation

Programming an Emergency / Information Phone for the PBX System and VOIP-1-2-4-8 Interface Unit

The following are PBX-specific required programming codes for the 400-Series Emergency / Information Phone(s). Other programming codes may be required for operation with other Talk-A-Phone components (e.g. ETP-EL, ETP-TAL).

| Operation Code | Description |
|----------------|--|
| *4** | Guard Access Code for Programming |
| *14*3* | Mode III / PBX Mode |
| *55* | Sets phone to disconnect if Guard Station is silent for 30 seconds |
| *40*0* | Sets a delay of 0 seconds before phone dials |

VIII. Integrating the PBX System with Talk-A-Lert (ETP-TAL)

Talk-A-Lert Modem:

1. Punch down tip and ring for the modem onto the pins labeled for "Poller" on the "SLT" punchdown block.
2. Crimp an RJ-11 to the other end of the line and connect it to the "Line" port of the modem.

EB-300 Base Station:

1. Disconnect the handset from the Iwatsu "KT" Attendant Phone.
2. Connect the handset to the beige digital-line splitter included with your Talk-A-Lert package.
3. The digital-line splitter should have connected a small beige handset cable. Connect that beige handset cable to the handset port on the base of the Iwatsu "KT" Attendant Phone.

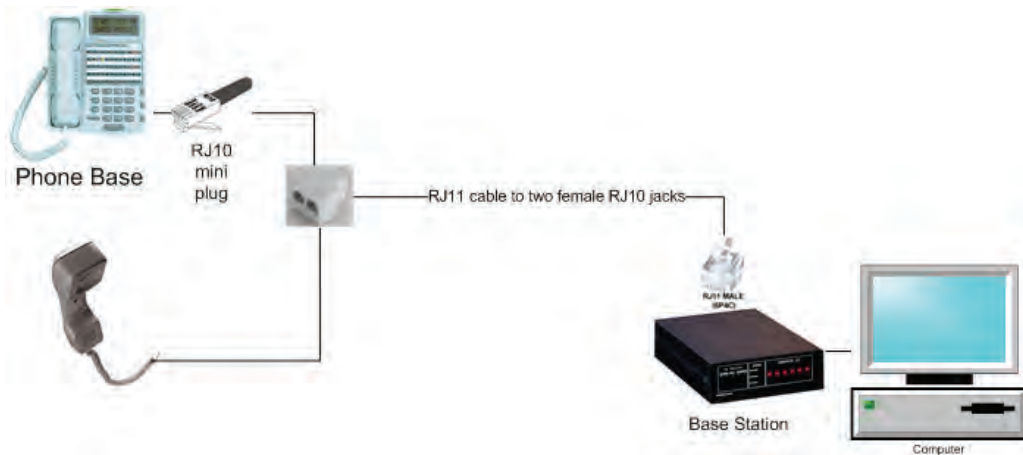


Figure 1. Connecting the Base Station to a digital phone handset

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