Orchestrating a brighter world **NEC**
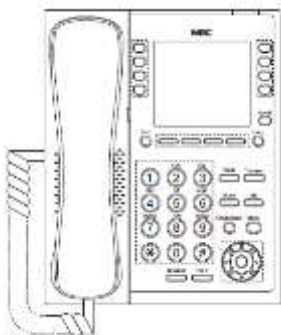
The SL2100
Quick Install Guide:
Multiline IP Terminals
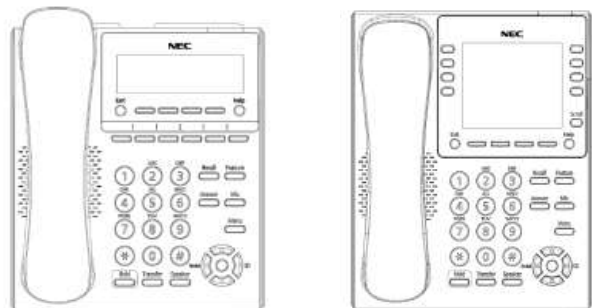
Out of the box installations for resellers

Quick Start Guide:
Multiline IP Terminals

8IPLD DESI-Less Phone	DT820 Phones (ITY-6D/ITY-8LDX)

Note: For more information on your SL2100 Communications System and NEC Multiline IP Terminal, including Quick User Guides and User Guides, navigate to your phone's Support page on the NEC Businessnet Portal.

This guide explains the installation, configuration and operation of the SL2100 Multiline IP Telephones.

Further information for the SL2100 platform is available on BusinessNet.

Please keep all information supplied for future reference.

Regulatory Notice.
Refer to the Declaration of Conformity, Regulatory and Safety Considerations shown in the SL2100 Hardware Manual.

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Other Documentation available:
- SL2100 Hardware Manual
- SL2100 Features and Specifications Manual

Contents

SL2100 Multiline IP Terminals

The SL2100 system consists of a chassis unit with a dedicated slot for the CPU card and four universal slots for interface cards. Each universal slot supports an extension interface card, each extension interface card can have an optional trunk interface daughter card mounted.

Interface cards are available for Analogue and ISDN trunks, proprietary SL2100 terminals and analogue telephones.

The chassis unit is ventilation cooled (no fan) and can be wall mounted or rack mounted with the optional rack mount shelf. Up to three chassis units can be connected together to provide a total of twelve universal slots.

Multiline IP terminals are supported without the need for additional system hardware as eight VoIP resources are built in to the CPU card. VoIP resources can be expanded to 16 by adding the optional VOIPDB card and further to 128 with licenses.

All equipment will operate in the default/factory setting when the SL2100 is installed.
With the default settings:

- Each telephone will function and is assigned an extension number.
- Calls received on the SIP trunk lines will ring at telephone number 200.
- Each telephone can make outside calls by dialling 9.
- Each trunk line is presented at a Function Key with busy lamp indication.

The system can be easily modified using SL2100 PCPro which has Quick Installation wizards for the majority of system settings.

This guide details the installation of the following Multiline IP Terminals:

	8IPLD	DT820	
		ITY-6D	ITY-8LDX
Part code & description	BE116517 **IP7WW-8IPLD-C1 TEL(BK)**	BE115113 **ITY-6D-1P(BK)TEL**	BE115114 **ITY-8LDX-1P(BK)TEL**
Connected to	Ethernet Port at LAN (10M/100M/1000G)	Ethernet Port at LAN (10M/100M)	Ethernet Port at LAN (10M/100M)
Colour	Black	Black	Black
Programmable Keys	32	6	8
Soft Keys	4	4	4
LCD	168 x 128 Dots with Backlight	168 x 41 Dots with Backlight	168 x 128 Dots with Backlight
Hands free	Full-Duplex	Full-Duplex	Full-Duplex
Interfaces	2 (1 x LAN and 1 x PC Ethernet Port (10Base T/100Base TX/1000Base TX)	2 (1 x LAN and 1 x PC Ethernet Port (10Base T/100Base TX)	2 (1 x LAN and 1 x PC Ethernet Port (10Base T/100Base TX)
Power Feeding	PoE (IEEE802.3af) Only	PoE (IEEE802.3af) Only	PoE (IEEE802.3af) Only
CODEC Support	G.711/G.729a	G.711/G.729a	G.711/G.729a
Backlit Dial pad	No	No	No
Headset Port	Yes	Yes	Yes
Angle Adjustment	2 Positions	2 Positions	2 Positions
Wall Mounting Kit	IP4WW-WALL MOUNT UNIT (Optional BE110790)	IP4WW-WALL MOUNT UNIT (Optional BE110790)	IP4WW-WALL MOUNT UNIT (Optional BE110790)
EHS Support	By EHS Cable (Plantronics APD-80	By EHS Cable (Plantronics APD-80	By EHS Cable (Plantronics APD-80
License	Built-in Terminal	NEC SIP License EU909388[1]	NEC SIP License EU909388[1]

[1]Requires one license per Terminal.

Parts available for the SL2100

Not all parts are included within this guide, please refer to the other available SL2100 Quick Install Guides or the SL2100 Hardware Manual for a full description and installation instructions of all parts available.

Please refer to Prophix for all parts and licenses available in your region.

1- Package Contents

IP7WW-8IPLD-C1 DESI-Less Multiline IP Terminal
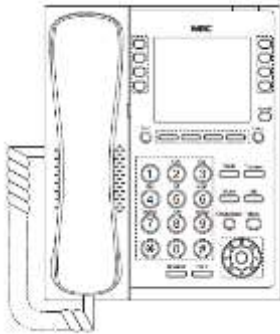
1 x IP7WW-8IPLD-C1 Multiline IP Terminal   1 x Declaration of Conformity

Additional Items Required:
- Ethernet (cat5e/cat6) cable(s)

ITY-6D-1 (BK) TEL Multiline IP Terminal

1 x ITY-6D-1 Multiline IP Terminal   1 x Declaration of Conformity

Additional Items Required:
- Ethernet (cat5e/cat6) cable(s)
- NEC SIP License (Installed on SL2100)

ITY-8LDX-1 (BK) TEL Multiline IP Terminal
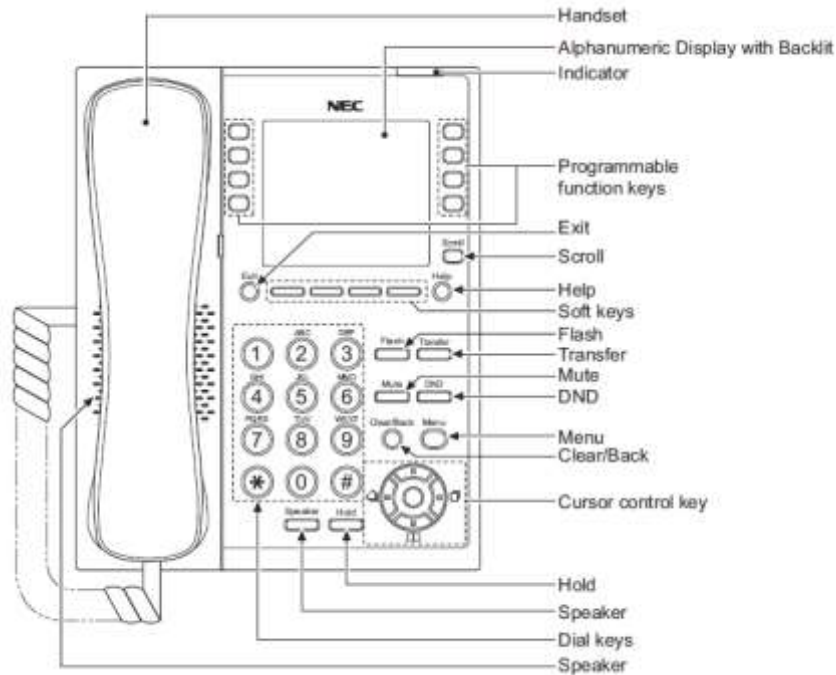
1 x ITY-8LDX-1 Multiline IP Terminal   1 x Declaration of Conformity
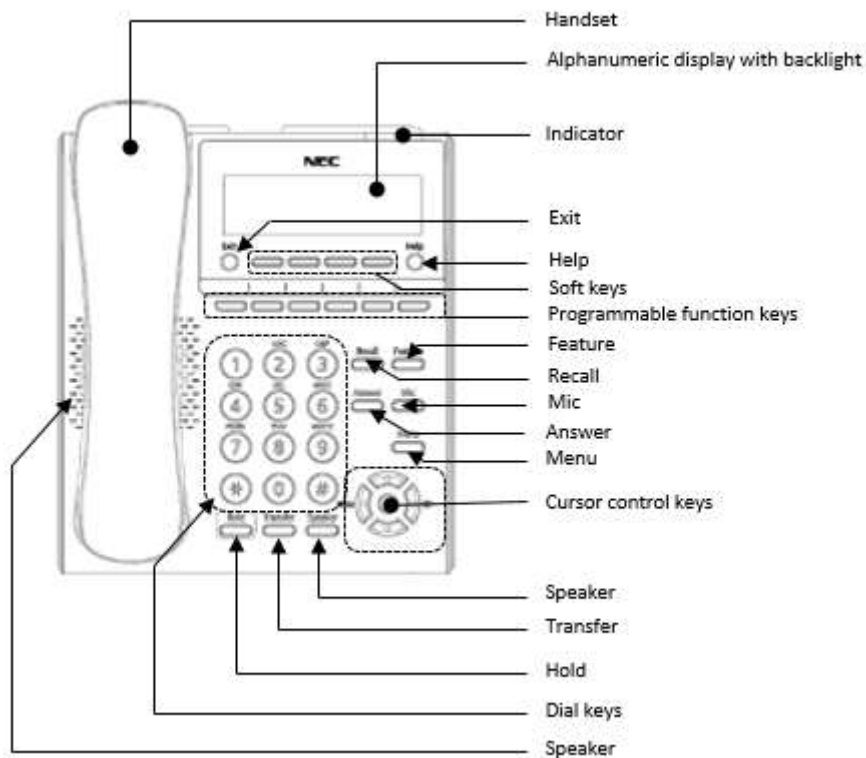
Additional Items Required:
- Ethernet (cat5e/cat6) cable(s)
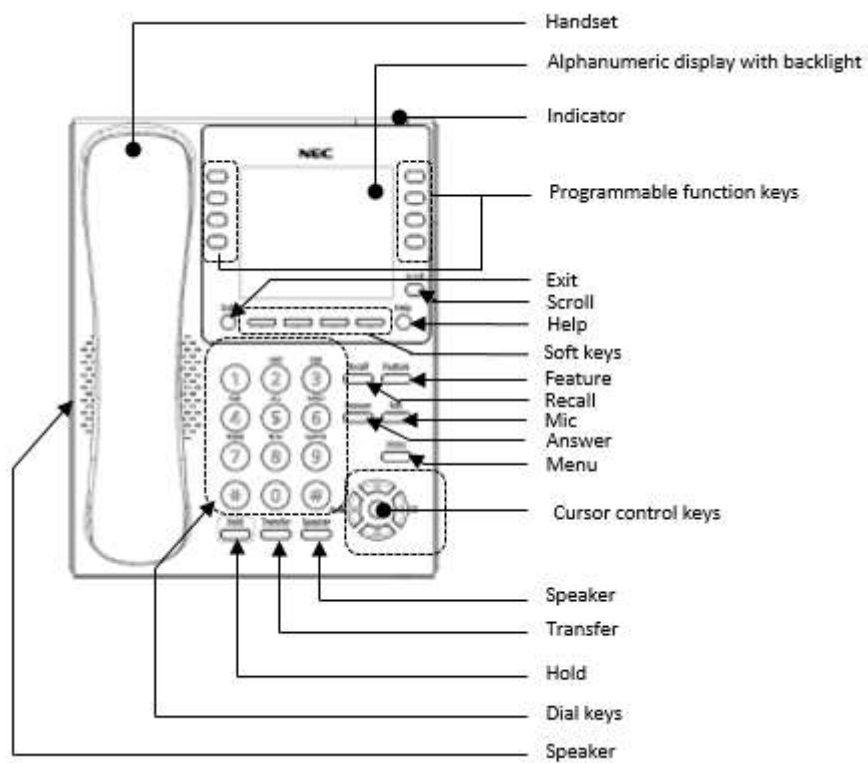- NEC SIP License (Installed on SL2100)

2- Features

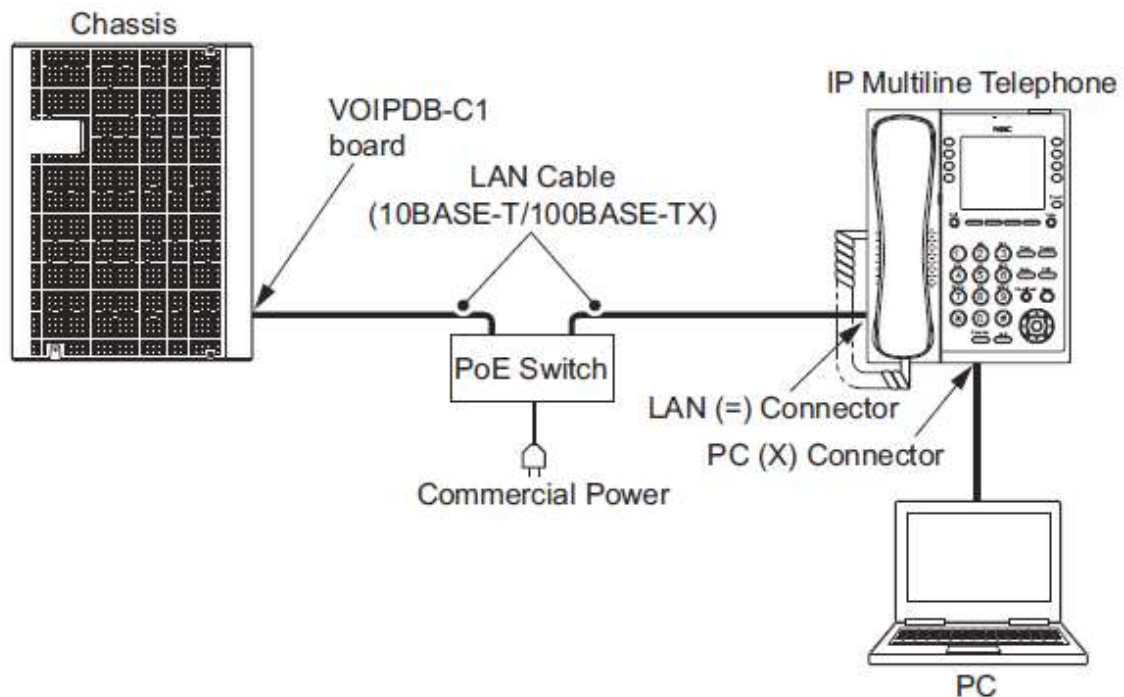**IP7WW-8IPLD-C1 Multiline IP Terminal**

ITY-6D-1 Multiline IP Terminal
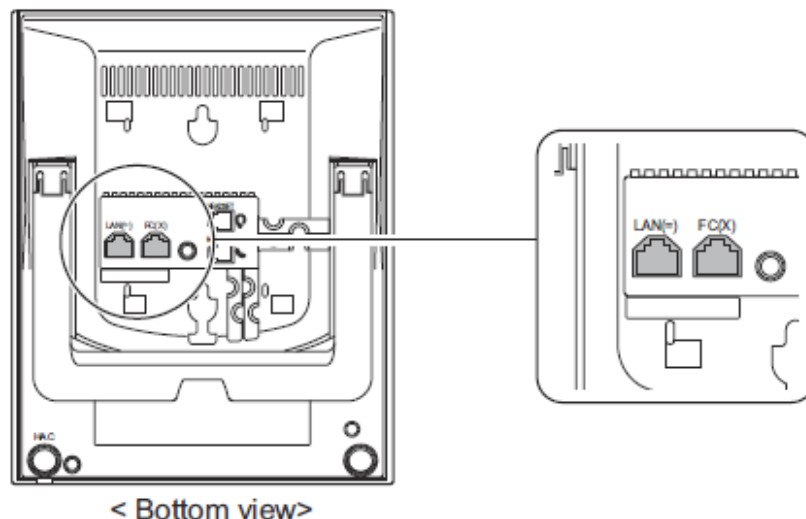
ITY-8LDX-1 Multiline IP Terminal

3- System Connection Overview

The Multiline IP terminals are connected via a PoE switch.

4- Connect the Multiline IP Terminal

1. Connect the LAN Network 10-Base-T/100Base-TX/1000Base-TX cable to the **LAN(=)** connector.
2. Power provisioning is provided by PoE, and AC/DC is not used.
3. The Multiline IP Telephones have a Switching Hub to connect a PC to the LAN network. Connect the 10Base-T/100Base-TX/1000Base-TX straight through cable used for connection to the PC to the **PC(X)** connector and to the PC.

< Bottom view>

## 5- Applying Power to the Multiline IP Terminal

The Multiline IP Terminals support PoE power provisioning for the telephone.

- PoE(IEEE802.3af)
  PoE (Power Over Ethernet) is a LAN technology that allows standard 10-Base-T/100Base-TX/1000Base-TX data cables to pass electrical current from a power source to a requesting end device.

Ethernet sockets for VOIP

There are two Ethernet sockets available with the SL2100: CPU card and optional VOIPDB card.

- When the CPU card is installed – Use the Ethernet socket of the CPU.
  8 VOIP resources built in with the CPU card are available
  Use the VOIP IP address settings for VOIP devices
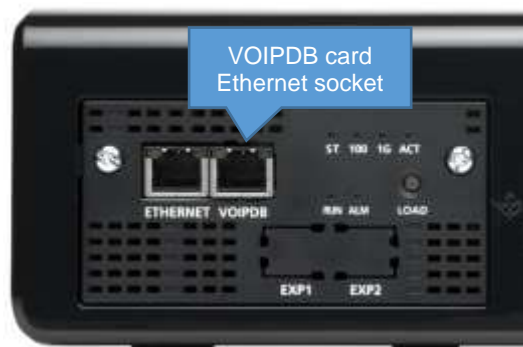 *Note – do not use the CPU IP address settings as these will not support VOIP devices*
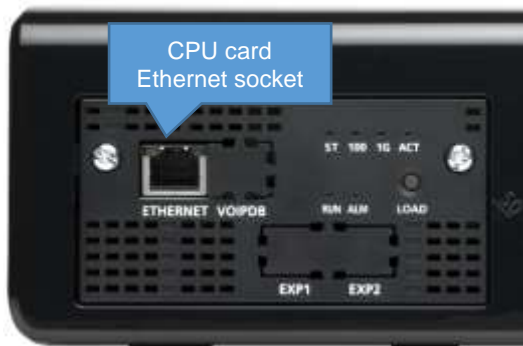
SL2100 IP address	172.16.0.10
Subnet Mask	255.255.0.0
Supports	Data (eg PCPro/WebPro, SMDR etc) VOIP
LAN speed	100 Mbps Full Duplex

Use the IP address and Subnet mask setup in PCPro Easy Edit - Quick Install - Cards-CPU Settings - CPU IP Address: VOIP IP Address

IP Address	192.168.0.10
Default Gateway	0.0.0.0
Subnet Mask	255.255.255.0
NAPT Router IP Address	0.0.0.0
▶ VOIP IP Address	172.16.0.10
VOIP Subnet Mask	255.255.0.0

- When the optional VOIPDB card is installed – Use the Ethernet socket of the VOIPDB card
  16~128 VOIP resources provided by the VOIPDB card + VOIP channel licenses are available
  Use the VOIP IP address settings for VOIP devices

SL2100 IP address	172.16.0.10
Subnet Mask	255.255.0.0
Supports	Data (eg PCPro/WebPro, SMDR etc) VOIP
LAN speed	100/1000 Mbps Full Duplex

Use the IP address and Subnet mask setup in PCPro Easy Edit - Quick Install - Cards-CPU Settings - CPU IP Address: VOIP IP Address

IP Address	192.168.0.10
Default Gateway	0.0.0.0
Subnet Mask	255.255.255.0
NAPT Router IP Address	0.0.0.0
▶ VOIP IP Address	172.16.0.10
VOIP Subnet Mask	255.255.0.0

Check the IP Address of the SL2100

You can check the IP address at any SL2100 system phone:
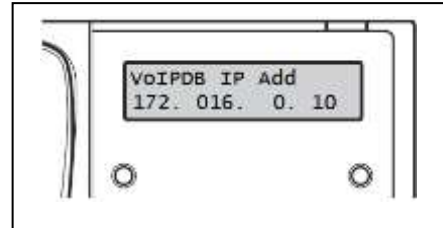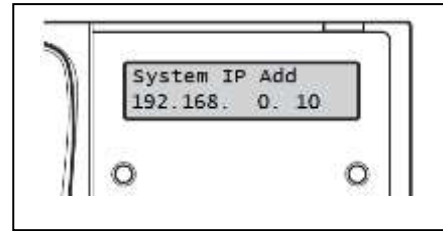When the phone is idle (on hook)

Type-A Terminal
Press the centre Navigation Key and dial 841

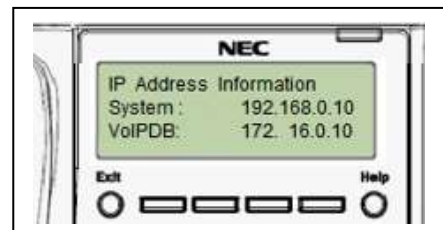Press centre navigation
key and dial 841

```
System IP Add
192.168.  0. 10
```

Press the right navigation key to display the VoIPDB setting

```
VoIPDB IP Add
172. 016.  0. 10
```

Type-B Terminal
Press the centre Navigation Key and dial 841

Press centre navigation
key and dial 841

```
NEC
IP Address Information
System :      192.168.0.10
VoIPDB:       172. 16.0.10
Exit                    Help
```

PCPro
System IP address is setup in PCPro Easy Edit - Quick Install – Cards - CPU Settings - CPU IP Address: IP Address

▷ IP Address	192.168.0.10
Default Gateway	0.0.0.0
Subnet Mask	255.255.255.0
NAPT Router IP Address	0.0.0.0
VOIP IP Address	172.16.0.10
VOIP Subnet Mask	255.255.0.0

VoIPDB IP address is setup in PCPro Easy Edit - Quick Install – Cards - CPU Settings - CPU IP Address: VOIP IP Address
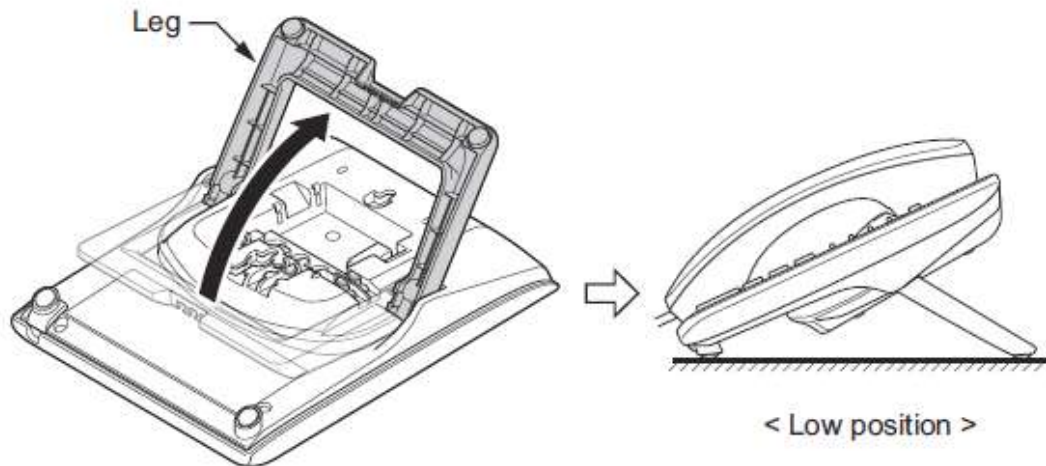
IP Address	192.168.0.10
Default Gateway	0.0.0.0
Subnet Mask	255.255.255.0
NAPT Router IP Address	0.0.0.0
▷ VOIP IP Address	172.16.0.10
VOIP Subnet Mask	255.255.0.0

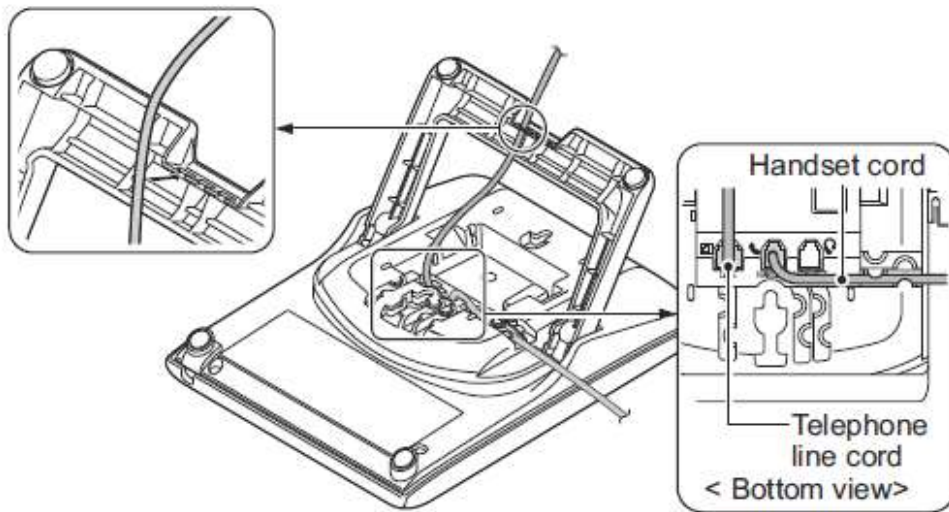# 6- IP7WW-8IPLD-C1 DESI-Less IP Terminal Leg Adjustment

The Multiline IP 8IPLD Terminal provides adjustable legs for angling the phone to best suit each user. The leg can be set for two different heights (Low/High).

Low Position Setting

1. Turn telephone over (button side down).
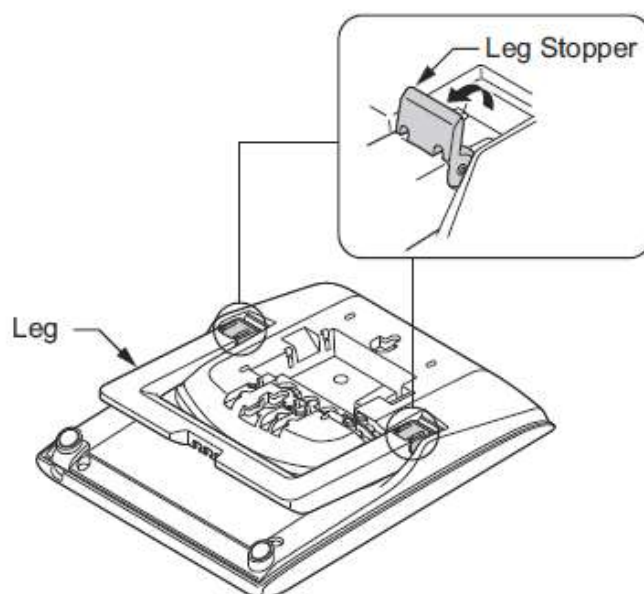2. Adjust the legs to **Low Position** height.

< Low position >

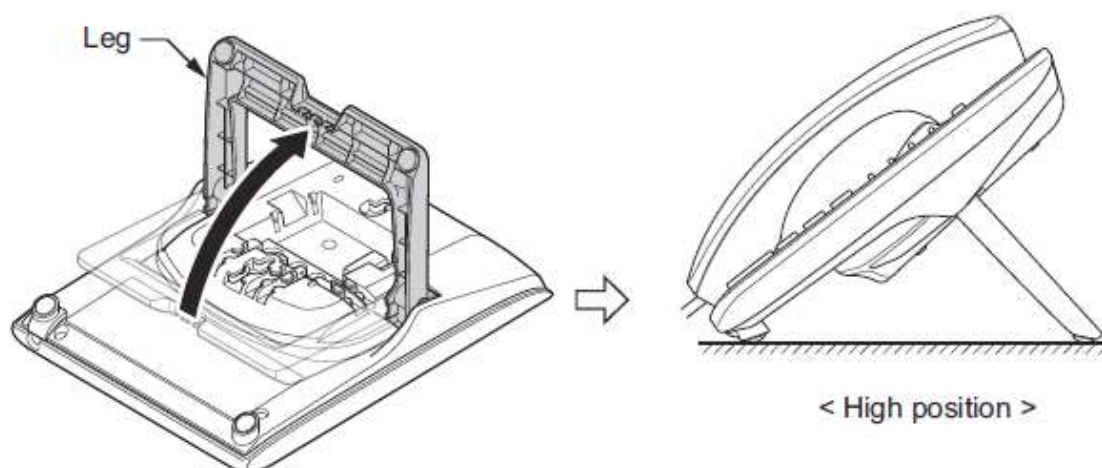3. Lead the Line and Handset cords through the applicable grooves.

Handset cord

Telephone line cord
< Bottom view>

4. Turn telephone over (button side up).

High Position Setting
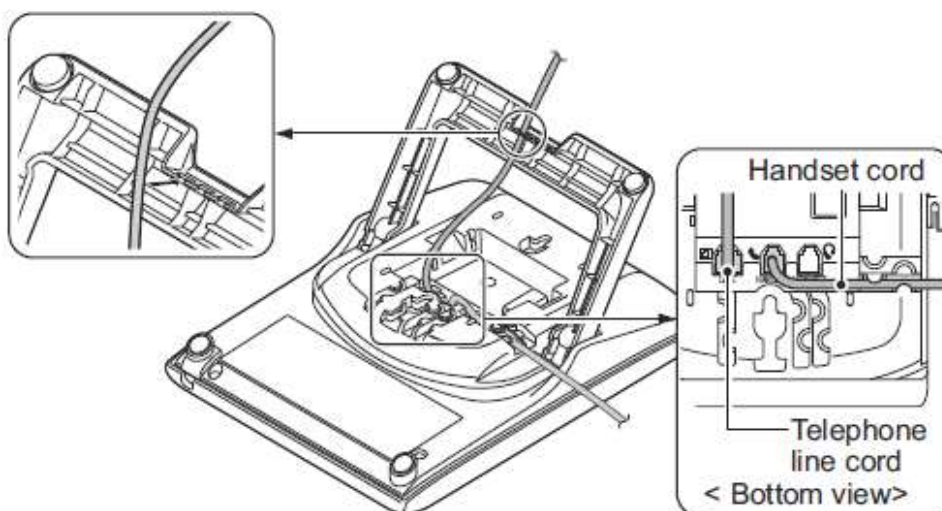1. Turn telephone over (button side down).
2. Pull up the Leg Stoppers.

3. Adjust the legs to **High Position** height.

< High position >

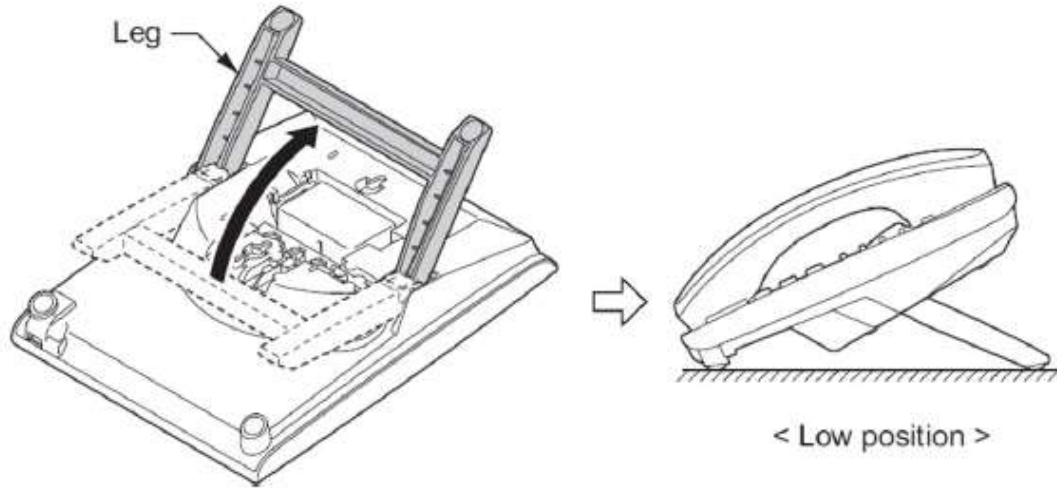4. Lead the Line and Handset cords through the applicable grooves.

Handset cord

Telephone line cord

< Bottom view>

5. Turn telephone over (button side up).

## 7- DT820 IP Terminal Leg Adjustment (ITY-6D-1 and ITY-8LDX-1)

The Multiline IP DT820 terminals provide adjustable legs for angling the phone to best suit each user. The leg can be set for two different heights (Low/High).

Low Position Setting

1. Turn telephone over (button side down).
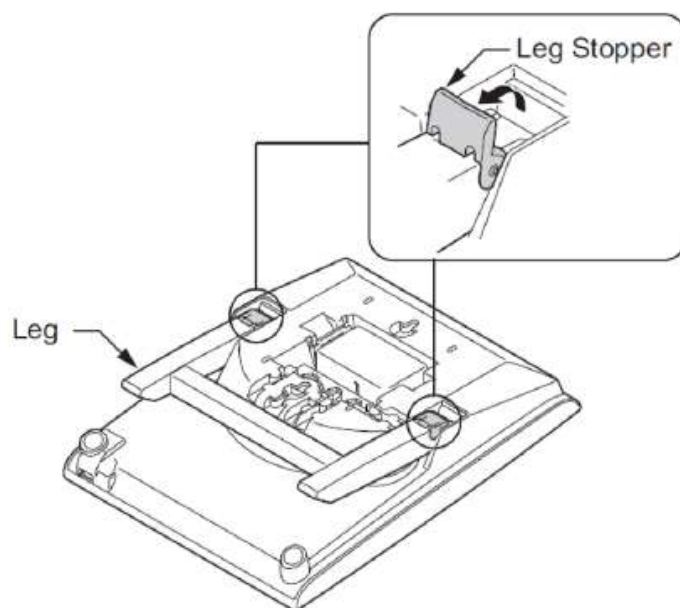2. Adjust the legs to **Low Position** height.

< Low position >

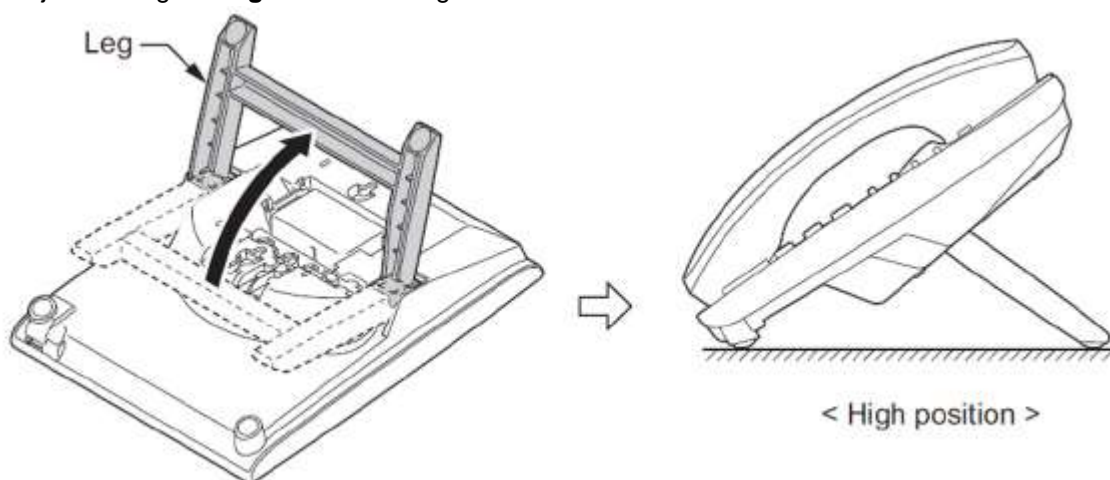3. Lead the Line and Handset cords through the applicable grooves.

Handset cord

Telephone line cord

< Bottom view>

4. Turn telephone over (button side up).

High Position Setting
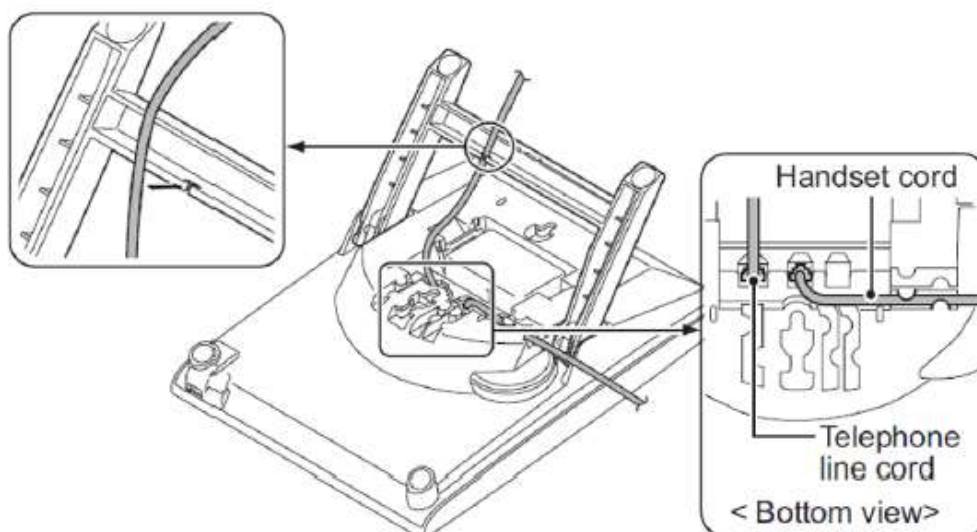1. Turn telephone over (button side down).
2. Pull up the Leg Stoppers.

3. Adjust the legs to **High Position** height.
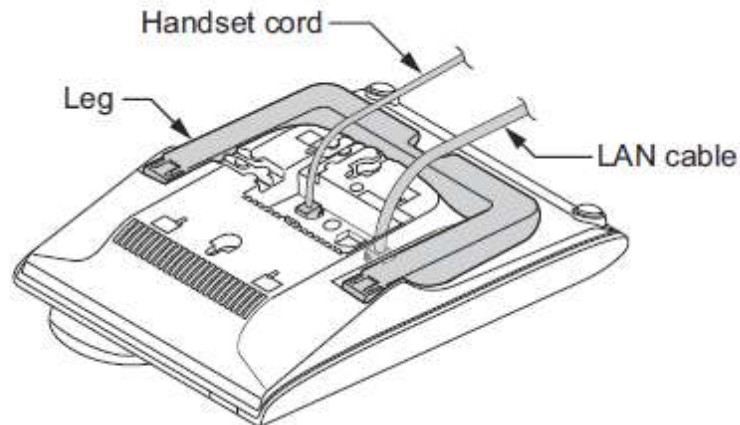

< High position >

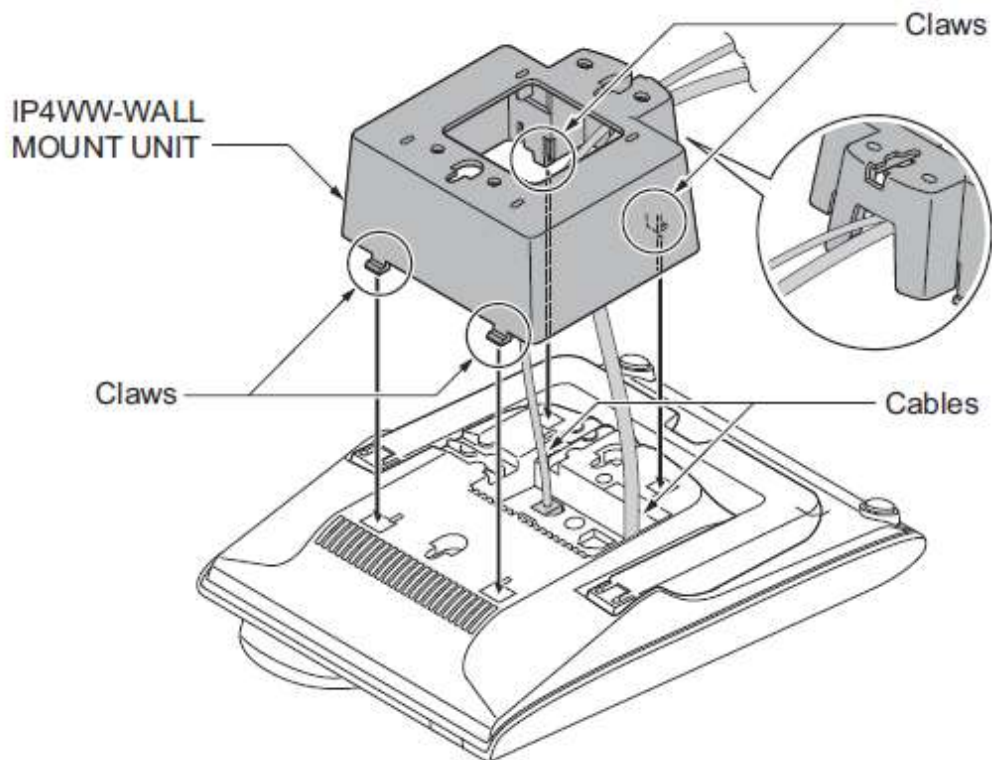4. Lead the Line and Handset cords through the applicable grooves.

< Bottom view>
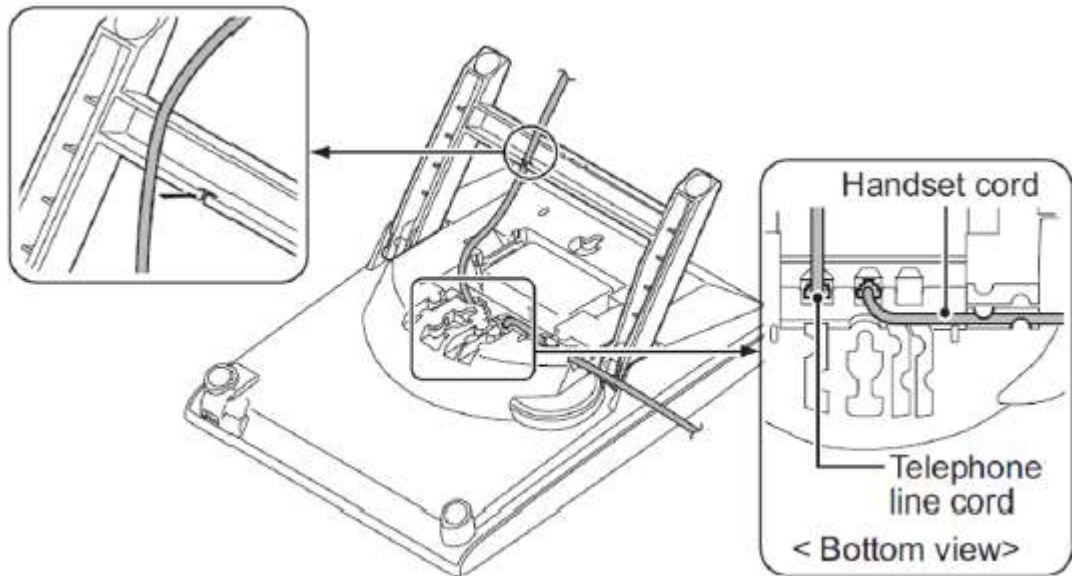
5. Turn telephone over (button side up).

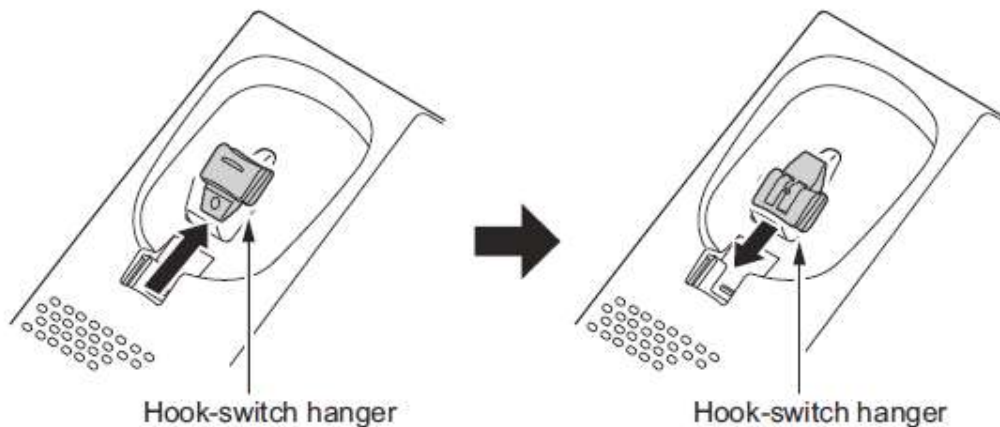# 8- Wall Mounting Multiline IP Terminals

1. Arrange the cables and put down the legs as shown below.

2. Attach the **IP4WW-WALL MOUNT UNIT** to the bottom panel and arrange the cables as shown below.

3. Remove the switch-hook from the unit. Turn the tab toward the top. Then slide the hook-switch into position.

4. Install two screws into a wall. The screw head must be remained about 3mm (0.12").

3 - 4 mm   1 - 3 mm
(0.12" - 0.16") (0.04" - 0.12")

83.5 mm
(3.287")

7 - 9.5 mm
(0.28" - 0.37")

Minimum 10 mm (0.39")
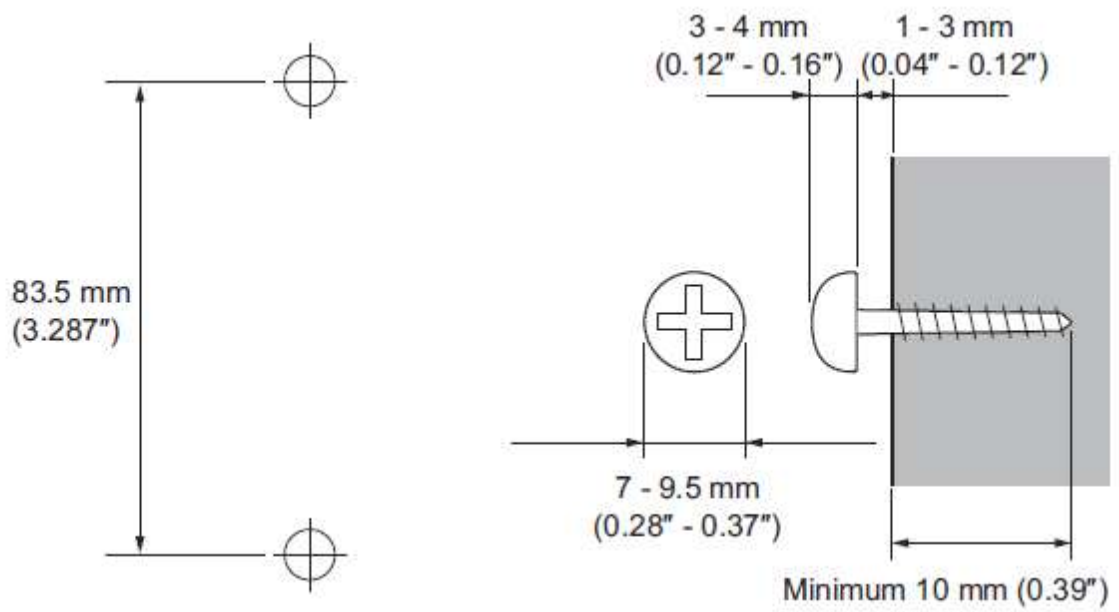
5. Mount the telephone on the wall.

Wall-mounting holes

Wall side

9- Multiline IP Terminal Configuration

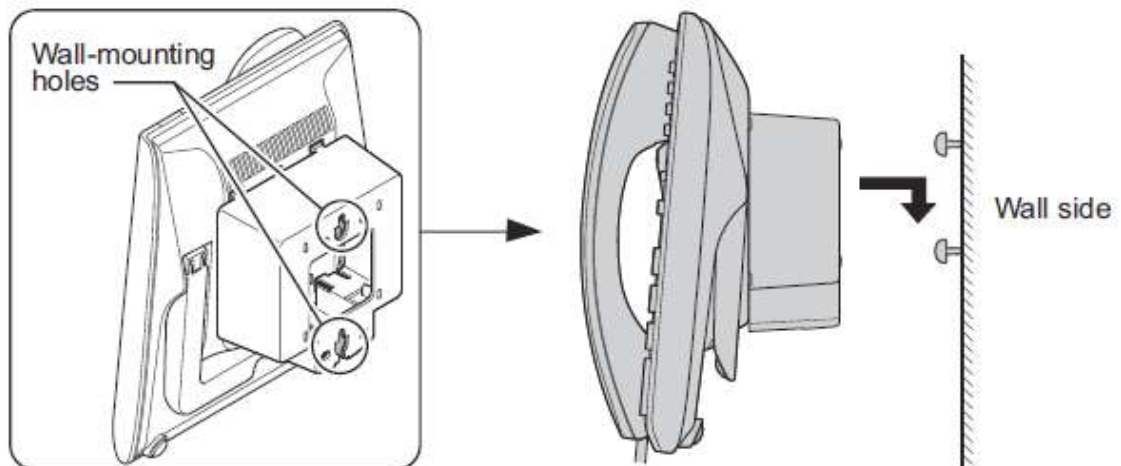There are 3 types of registration methods that can be used to connect Multiline IP terminals to the SL2100 system. The 3 methods available are as follows;

- **Plug and Play**
  - o Plug and Play requires no user name or password. Extension numbers are automatically assigned by the system based on the next available free number.
  - o Advantage: Good for fast deployment. Used by default.
- **Automatic**
  - o Automatic requires a User ID and Password entered into the configuration. The User ID and Password need to be input also into the phone configuration so the user never has to enter this.
  - o Advantage: Good for secure environments and fixed numbers tagged to the phone set.
- **Manual**
  - o Manual requires a User ID and Password entered into the configuration. The user is prompted to enter the User ID and Password after the phone has initialized.
  - o Advantage: Good for hot-desking where you're able to have extension mobility for the users. The user can then logout from the terminal and the next user can login to the phone with their own extension number assigned.

The SL2100 is by default configured to use Plug and Play registration. For the purpose of this Quick Install Guide and simplicity we will use the Plug and Play method. For Automatic or Manual Registration modes please refer to the SL2100 Networking Manual for further information.

Multiline IP Terminal Boot Sequence

When the Multiline IP Terminal has been connected to the LAN and power is provisioned, it will begin it's boot sequence and attempt to obtain a network IP configuration from a local DHCP server before then attempting to connect to the SL2100. The Boot sequence for a default terminal will look similar to as described below, and a default terminal will normally end the sequence displaying a message to inform that the SIP Server (SL2100) was not found. This is because, at this point the terminal does not know the IP address of the SL2100 to connect to, which needs to be configured next.

NEC — Initializing...	Terminal receives power and begins its initial boot sequence.
NEC — Starting...	Terminals firmware is loaded into memory and applications started.

|	
 LLDP Receiving...	**DT820 Terminals Only** an LLDP discovery request is sent to the network and if supported by the network switch, configuration details of the network such as VLAN and QoS configuration can be obtained by the terminal.
 DHCP Connecting...	A DHCP request is sent to the network to obtain IP configuration details. DHCP can also be used to provision the SIP Server address information but that is not covered in this Quick Start Guide. Please refer to the SL2100 Networking Manual for further information.
 SIP Server Not Found	The Terminal will by default normally display a 'SIP Server Not Found' message. If the Terminal does not display this message and connects to the SL2100, it is most likely that the DHCP server has been configured to provision the SIP Server address details already.

Multiline IP Terminal Programming Interface

This section describes how to access the administration programming interface for Multiline IP Terminals. The following describes how to gain access to the Admin Menu.

1. From a Multiline IP Terminal, press the following button sequence, **HOLD + Transfer + * + #** to enter program mode. The Admin Menu login screen is displayed.

2. At the Admin Menu login screen, enter the default User Name and Password for the Multiline IP Terminal.

   Use the **BK** soft key to remove an entered digit, **Set** soft key to switch between fields, **Cancel** soft key to cancel the login, and press the **OK** soft key when ready to continue.

Programming Option	Default
User Name	ADMIN
Password	6633222
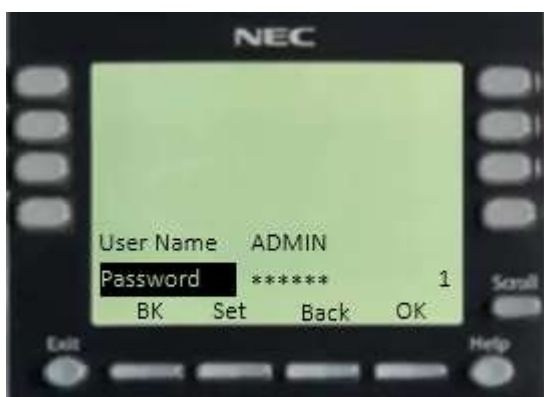
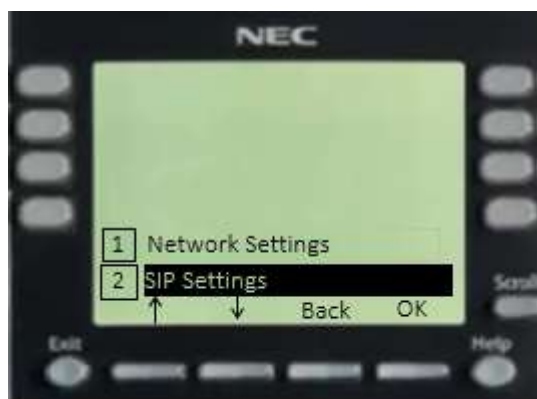**8IPLD**   **DT820 8LDX**

Configure 8IPLD Multiline IP Terminal

1. Once logged in successfully, the Admin Menu options will be available.

2. Press **2** to select **SIP Settings** and press the **OK** soft key.

3. The **SIP Settings** menu will now be displayed.

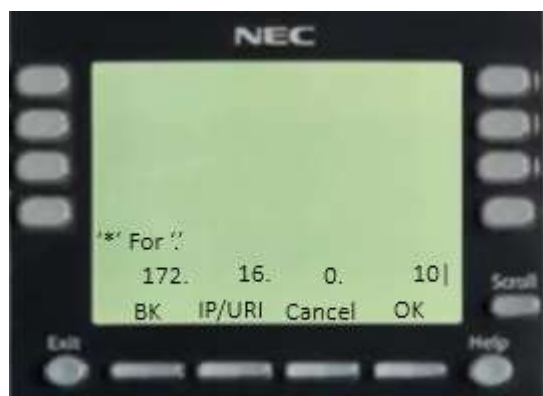

4. Press **2** to select **Server Address & URI**.

5. The **Server Address & URI** menu will now be displayed.

6. Press **1** to select **1st Server Address**.

7. The **1st Server Address** data entry screen will now be displayed. Enter the VOIP IP address of the SL2100. Press the **OK** soft key when finished.

8. Press **4** to select **SIP Server Port**.

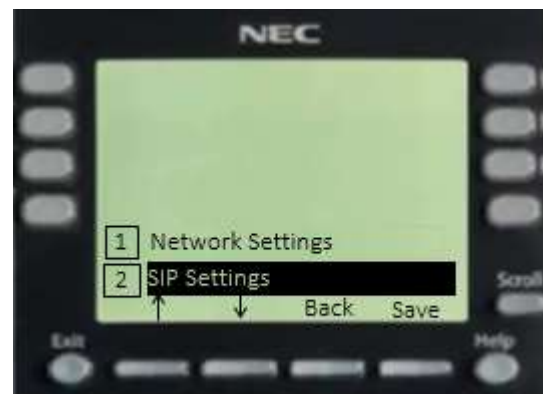9. The **SIP Server Port** menu will now be displayed.

10. Press **1** to select **1st Server Port**.

11. The **1st Server Port** data entry screen will now be displayed. The value should be **5080**, if it is not, then enter **5080** here. Press the **OK** soft key when finished.

12. Press the **Exit** soft key **2** times. When you are back at the main Admin Menu press the **Save** soft key.

13. The Terminal will now cycle through its boot procedure. Initializing > Starting > DHCP Connecting… > Connecting…

    The Connecting… phase is the terminal attempting to register at the SL2100 using the IP address assigned above in step 7, and be allocated an un-carded available port to the terminal.

14. If successful the Multiline IP terminal will be allocated an available port on the system and display it's extension number information.
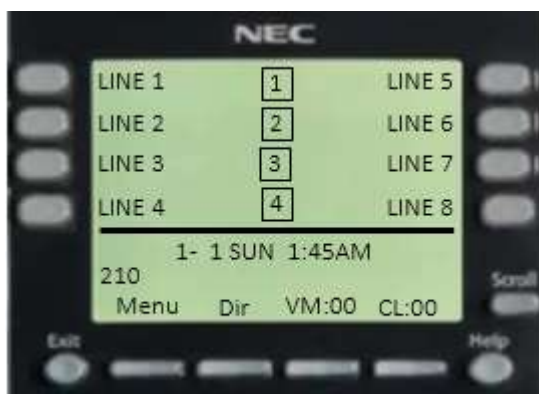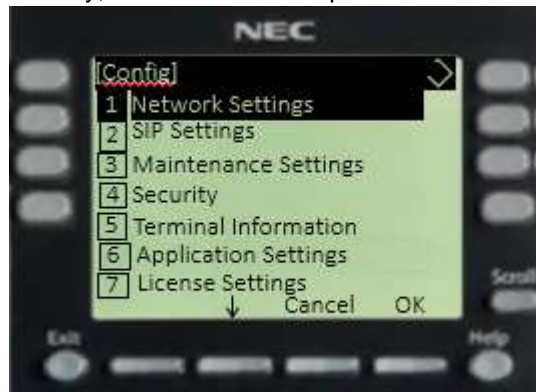

15. The IP terminal is now registered and ready to be used with the SL2100.
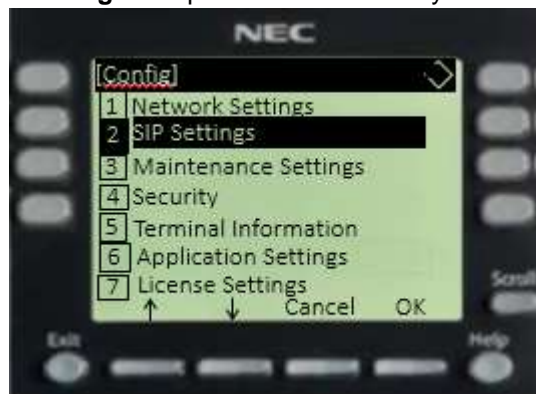
Configure DT820 Multiline IP Terminals

Please note these screens are taken for the **8LDX** model of **DT820**. The **6D** configuration is identical to this procedure only the display is smaller on that model.

1. Once logged in successfully, the Admin Menu options will be available.

2. Press **2** to select **SIP Settings** and press the **OK** soft key.

3. The **SIP Settings** menu will now be displayed.

4. Press **2** to select **Server Address & URI**.

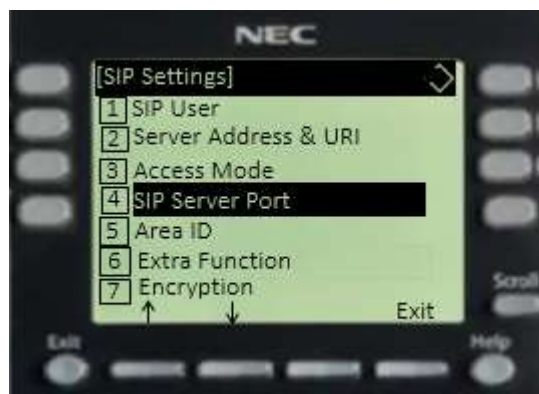5. The **Server Address & URI** menu will now be displayed.

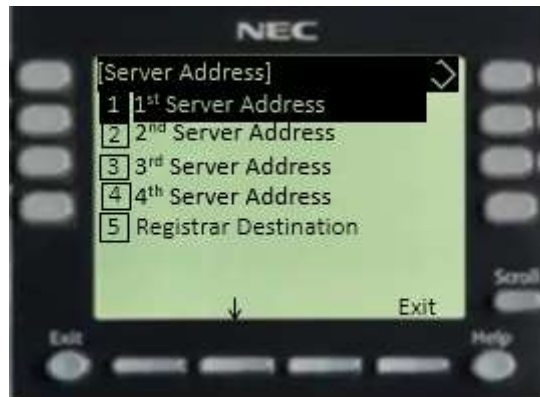6. Press **1** to select **1st Server Address**.

7. The **1st Server Address** data entry screen will now be displayed. Enter the IP address of the SL2100 VoIPDB interface. Press the **OK** soft key when finished.
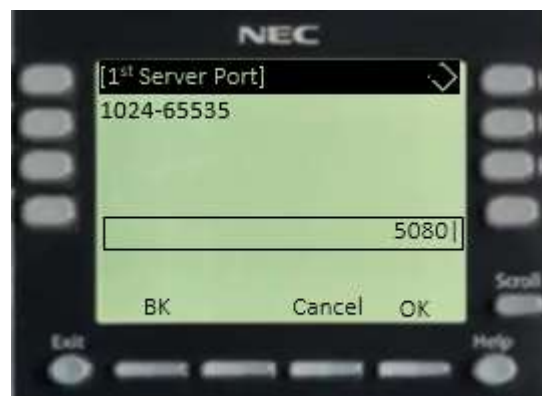

8. Press **4** to select **SIP Server Port**.

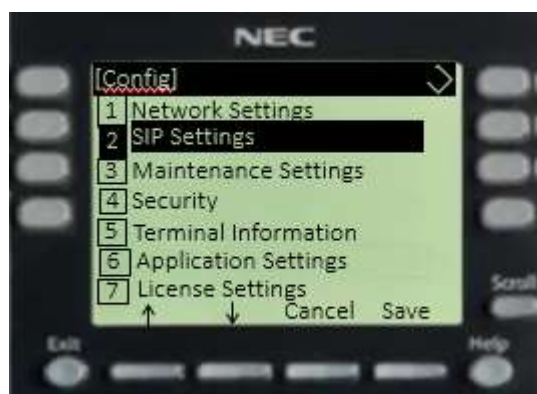9. The **SIP Server Port** menu will now be displayed.

10. Press **1** to select **1ˢᵗ Server Port**.

11. The **1ˢᵗ Server Port** data entry screen will now be displayed. The value should be **5080**, if it is not, then enter this value here. Press the **OK** soft key when finished.

12. Press the **Exit** soft key **2** times. When you are back at the main Admin Menu press the **Save** soft key.
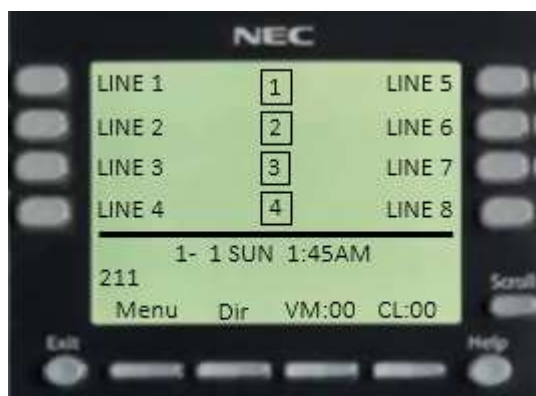
13. The Terminal will now cycle through its boot procedure. Initializing > Starting > LLDP Receiving… > DHCP Connecting… > Connecting…

The Connecting… phase is the terminal attempting to register at the SL2100 using the IP address assigned above in step 7, and be allocated an un-carded available port to the terminal.

14. If successful the Multiline IP terminal will be allocated an available port on the system and display it's extension number information.

15. The IP terminal is now registered and ready to be used with the SL2100.