

Toshiba DP5000-Series Digital Telephones

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Product Summary

Toshiba's next generation digital telephones are here. The DP5000 product line offers a sleek, low-profile design with a stylish tilt stand, an integrated headset interface and a full set of display and call handling features making Toshiba the obvious choice in leading-edge digital telephones. Toshiba continues to be proud of its backward compatibility allowing customers a new look on their desktop while maintaining much of their initial telephone system investment.

The most noticeable enhancements are the backlit displays, updated button placement and a high-end model with LCD key strips.

The telephone models are referenced by the total number of keys that are on the telephone (excluding the dial pad); the number of programmable keys have been specified in the descriptions and throughout the document.

The DP5008 with one programmable key and DP5018-S with ten programmable keys are the two non-display models offered for locations where a lower cost telephone is appropriate.

DP5008



DP5018-S



The DP5122-SD will likely be the most popular telephone installed in the field; with 10 programmable buttons and backlit display, it will meet the needs of the largest number of users.

The DP5132-SD with 20 programmable keys and backlight will be a natural choice for super-users and receptionists.

DP5022-SDM (non-backlit)
DP5022-SD (non-backlit)
DP5122-SD (backlit LCD)



DP5032-SD (non-backlit)
DP5132-SD (backlit LCD)



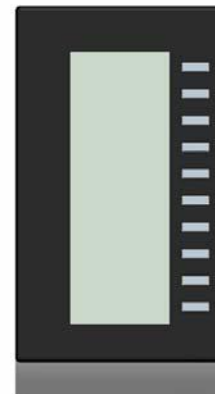
The high-end user will enjoy the DP5130-SDL and DP5130-FSDL. These telephones have 18 LCD keys, 10 that are programmable, a backlit display and are easily configurable by the user. The DP5130-FSDL provides full duplex capability in both handset receiver and speakerphone modes.

The LM5110 add-on-module (ADM) with 10 programmable LCD keys is a simple way to add programmable keys to any of the DP series telephones (except the DP5008). The KM and DDM modules, with 20 and 60 programmable keystrip keys respectively, are solid choices for providing additional programmable buttons to a telephone or for outfitting a receptionist console.

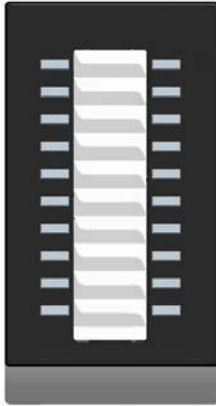
DP5130-SDL
DP5130-FSDL



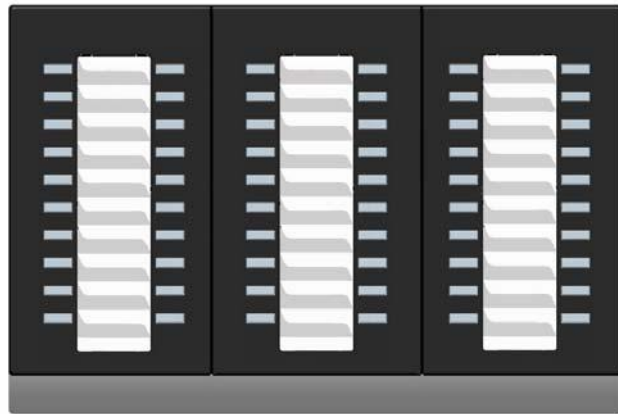
LM5110



KM5110



DDM5060



Positioning

The DP5000 family of telephones provides an extensive selection to meet the wide variety of user needs across an organization. From an elite group of executives to call center agents or multiple receptionists; there is a solution for every user across the office or across an enterprise.

Existing Strata CTX and CIX system customers can begin using the new DP5000-series digital telephones immediately, integrating them into their existing systems without any upgrade requirement. When they are ready to upgrade their systems customers can utilize all the enhanced capabilities of these telephones. Even without an upgrade, existing customers can connect the new DP5000-series telephones to their system and begin enjoying the new telephones right away.

New system sales will benefit from the updated look and feel of the DP5000 telephones. With a new telephone the Strata CIX product family not only grows but looks more attractive. The esthetics, durability and attractive color make these telephones an obvious choice for today and for the years to come.

Minimum requirements for full functionality: Strata CIX systems with Release 5.1 software, Network eManager R510A05, and MyPhoneManager R510A02. Although the telephones will continue to work on previous releases of Strata CIX system software, they will not provide the full functionality described in this document.

Value Propositions

The DP5000 product family addresses the industry's demand for an enhanced look with added functionality to the Toshiba brand of telephones. Toshiba listened to the voice of the customer (both dealers and end-users) to come up with the following enhancements:

Modern New Look

- Sleek low profile — less than 1-inch thick
- Black body with dark gray keys
- Metallic silver curved tilt stand with eight adjustable positions
- Key pad retained the traditional Toshiba layout, maintaining continuity and operability in mixed handset deployments

Large Display Area for Call Information

- All LCDs are 24 characters wide
- Four lines of LCD to display call information (on the DP5022-SDM, DP5022-SD, DP5122-SD, DP5032-SD, and DP5132-SD telephones)
- Nine lines of LCD on the DP5130-SDL and DP5130-FSDL telephones

LCD Key-Strip

- Integrated in the DP5130-SDL and DP5130-FSDL telephones
- Integrated in the LM5110 add-on module, this module is supported on all of the DP5000 series telephones except the DP5008
- Key labels are programmable via Network eManager 510A05, MyPhoneManager R510A02 (both local and remote), or user programming mode
- User programmable line and trunk labels
- Feature labels – user selectable
- Ease of deployment and dynamic changes

Backlight LCD

- Available on: DP5122-SD, DP5132-SD, DP5130-SDL, DP5130-FSDL, and LM5110
- Place the telephones anywhere: regular office, reception area, high-end home studio, hotel lounge, low-light environments, etc.
- LCD backlight can be set to always on, always off or synchronized which turns backlight on anytime activity is sensed on the telephone and will automatically shut off after a period of time to conserve energy.

Handset/Mic Mute

- All models have microphone and speaker capability (Note: The DP5008 does not have a microphone.)
- Enhanced Mute - now the handset and microphone are muted simultaneously
- The MIC key on the telephones toggles between Mic and Mute. When the Mic key is lit, hands free communication is supported, when the Mic key is pressed and light is off, Mute is enabled.

Additional Characteristics

- New LCD Technology — High Contrast Black-n-White LCD panel
- Stylish Tilt Stand
- Built-In Headset Interface — eliminates the need for technician to install optional interface
- Built-in Carbon Handset Interface controlled by software

- Optional Speaker OCA for all models except the single line telephone
- Two non-display models for budget-constrained installations

Features and Capabilities

The DP5000-series telephones support the following features (except the DP5008 which supports only on-hook dialing and has a built-in headset interface):

- Support on-hook dialing
- Speaker Off-hook Call Announce (OCA)
- Half-duplex speakerphone capability (the DP5130-FSDL supports full duplex speakerphone capability)
- Built-in headset interface
- Carbon handset support

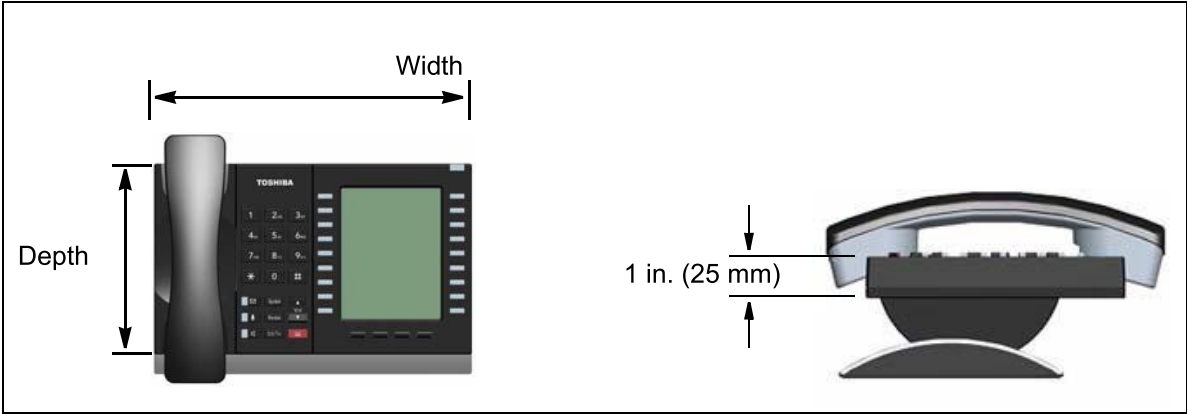
Notes

1. Setting of headset is by software setting in terminal.
2. Carbon type handset Setting is by software setting in terminal. This is an improvement of the DKT3000 that required cutting a jumper inside the telephone to use a carbon type handset.
3. The Digital Off-Hook Call Announce option enables stations to receive internal calls over their speaker while on another call using the handset. This requires installation of the DOCA1A module in the base of the telephone (not supported on DP5008 model). Off Hook Call Announce through the handset is a standard feature.

The table below shows the telephone models that support add-on modules and external speaker.

Models	Key expansion	External Speaker
DP5008	No	Connection of External Speaker Control Box: BESC1A (External Speaker Control Box) can be connected. (The interface connector is accessed through the base of the telephone.)
All DP5000-series telephones except DP5008	Up to two ADMs (LM5110, KM5020)	

Physical Specifications



DP5000-series Telephones and ADMs Physical Augmentations

Device	Width	Depth Without Tilt
DP5008	5.9 in. (150 mm)	6.10 in. (155 mm)
All DP5000-series telephones except DP5008	10.16 in. (258 mm)	
DDM5060	10.16 in. (258 mm)	
KM5020, LM5110	3.54 in. (90 mm)	

DP5000-Series Telephone Tilt Angles

The DP5000-series telephones, except the DP5008, have three tilt positions built into the base. There is also a tilt stand extension that adds an additional 20 degrees of tilt. When the telephone is sitting on a desk or table there are a total of six different angles of tilt available. When wall mounted there are two angles available. The DP5008 base is fixed at 15 degrees. Refer to the figures below and the installation section for more detail.

DP5000-Series Tilt Angles

Model	Tilt Without Stand	Tilt with Stand
All DP5000-series telephones except DP5008	15°, 27.5°, 40°	35°, 47.5°, 60°
DDM5060, KM5020, LM5110		
DP5008	15 Degrees (fixed)	

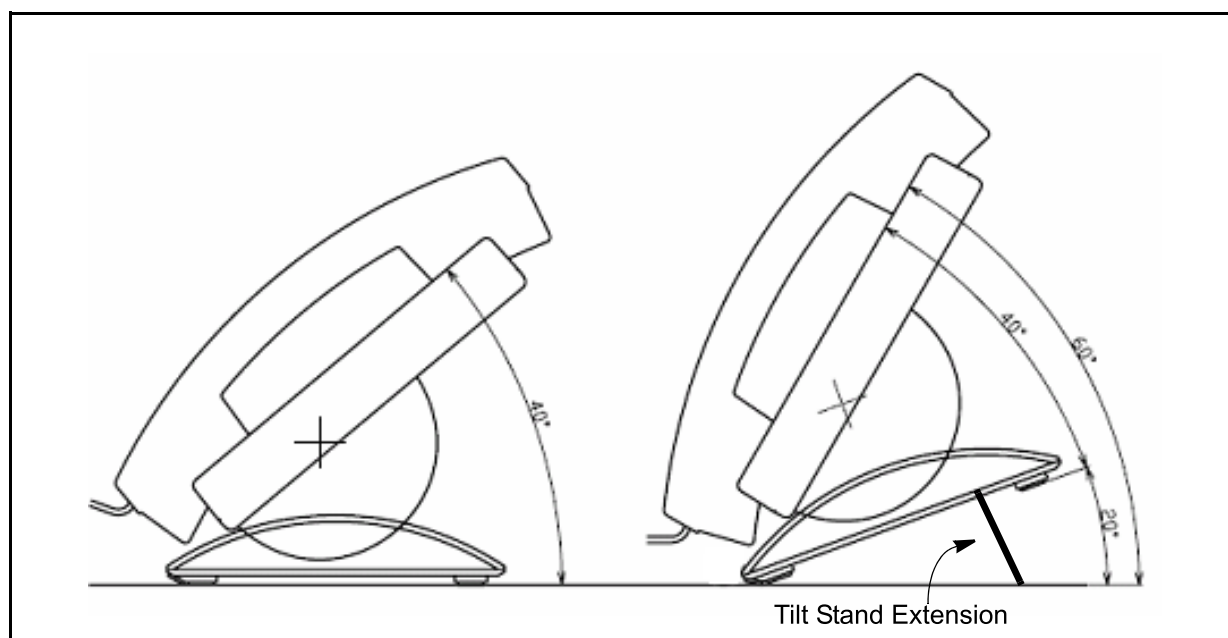


Figure 1 DP5000-Series Desk-top Tilt Angle With Tilt-Stand Extension

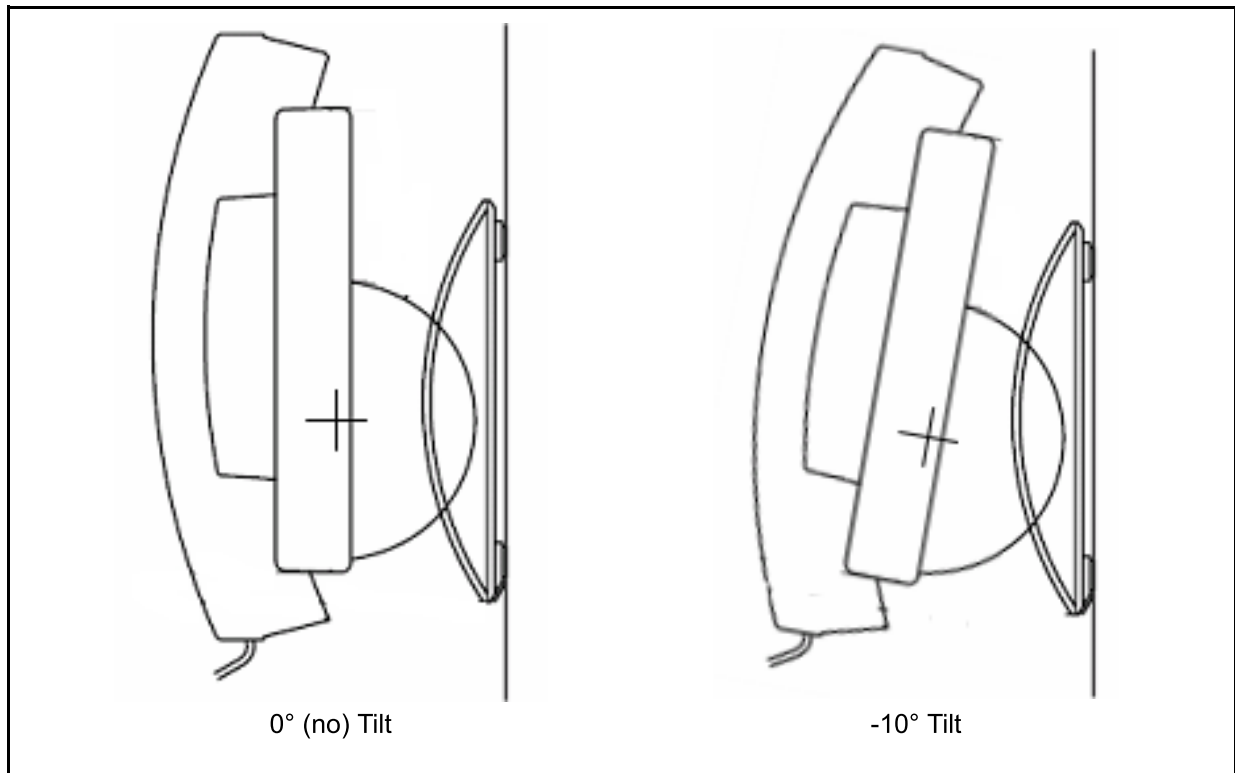


Figure 2 DP5000-Series Wall Mount Angles

Storage and Operating Temperature Range

DP5000-series telephones and add-on modules storage and operating temperature ranges:

- Storage: - 20° ~ 60° C (-4° ~ 140° F) - (20 ~ 80% non-condensing humidity)
- Operation: 0° ~ 40° C (32° ~ 104° F) - (20 ~ 80% non-condensing humidity)

Compatibility and Migration

The DP5000-series telephones replace the DKT3200-series telephones in the Toshiba product line.

All three generations of telephones, DKT2000, DKT3200 and DP5000, can co-exist with full functionality in one Strata CIX system with Release 5.1 software or above.

The DP5000 telephones have three operational modes:

- When connected to Release 5.1 CIX systems, they will automatically run in DP5000 Mode.
- When connected to CIX systems with older than Release 5.1 (including Release 3) the DP5000-series telephones will automatically act as DKT3200 telephones, DP5000-series telephones can also be programmed to act as DKT2000 telephones.
- When connected to a PDKU card DP5000-series telephones automatically act as DKT2000 telephones.

Strata CIX40, CIX100, CIX200, and CIX670 systems running R4 and later software can be upgraded to Release 5.1 Software. Systems running R3 software must be updated to R4 processors then updated to R5.1 software.

Strata CTX28 systems cannot be upgraded to Release 5.1 Software. Although the DP5000-series telephones can be used on a CTX28 they will have limited functionality as described in the Value Proposition section.

Order Information

Type	Part Number	Description
Telephones	DP5008	8 Keys, including 1 programmable key, no display
	DP5018-S	18 Keys, including 10 programmable keys, no display
	DP5022-SDM	22 Keys, including 10 programmable keys, with display, no backlight (for CIX40 only) (Refer to License Requirements below.)
	DP5022-SD	22 Keys, including 10 programmable keys, with display, no backlight
	DP5122-SD	22 Keys, including 10 programmable keys, with display, backlight
	DP5032-SD	32 Keys, including with 20 programmable keys, display, no backlight
	DP5132-SD	32 Keys, including 20 programmable keys, with display, backlight
	DP5130-SDL	18 LCD Keys, including 10 programmable keys, with large display, and backlight
	DP5130-FSDL	18 LCD Keys, including 10 programmable keys, with large display, backlight, and full duplex speakerphone capability
Add-On-Modules	LM5110	LCD Module with 10 programmable LCD keys and backlight
	KM5020	Key Module with 20 programmable keys
	DDM5060	Digital DSS Module with 60 programmable keys
Optional Module	DOCA1A	Digital off Hook Call Announce Card
DP5022-SDM Migration License	LIC-1-DP5022SDM	License Migration Keycode to migrate DP5022-SDM telephones from a CIX40 to a CIX100, CIX200, CIX670, and CIX1200.

License Requirements

DP5000-series telephones require a CIX Basic Port License: LIC-4 Basic Port

The DP5022-SDM telephone will work only on CIX40. For customers migrating DP5022-SDM telephones from CIX40 to CIX100, CIX200, CIX670 or CIX1200 system, a onetime, per-telephone license is required. (Part Number: LIC-1-DP5022SDM)

Station Wiring, Loop Length, Telephone Power Factors

Connections

All DP5000-series telephones with no ADM connected should use the standard, one-pair (two-wire) line cord included with the telephone.

Digital telephones connect to the MDF with standard twisted-pair telephone wiring. In most cases digital telephones can operate at up to 1000 feet when using a single pair, 24 AWG cable from telephone to equipment cabinet. Refer to Table , “Station Loop Lengths,” on page 11.

Digital telephones equipped with one or more ADMs require two pairs of wire, from the system to the station, to operate at maximum cable length. All digital telephones connected to systems with reserve battery power, regardless of cable length, should use two-pair cable.

The telephone wiring must be terminated at a modular station connect block (RJ11). The standard line cord, sent with each station is seven feet long. The maximum length line cord allowed is 25 feet.

Digital telephone cable runs must not have:

- Cable splits (single or double)
- Cable bridges of any length
- High resistance or faulty cable splices

The DP5000-series handset connects with a two-pair modular cable included with the telephone.

An ADM connects to the DP5000-series station only with the modular cable included with the ADM.

Station Loop Length for CIX100, CIX200, CIX670, and CIX1200

In a single site installation, the telephones must be placed within the allowed maximum distance of the Base Cabinet and optional Expansion Cabinets as shown in the table below. Two-pair wiring is required to achieve maximum range. BDKS and BWDKU cards do not provide the power wire pair. When these cards are the station interface, the maximum loop length is shown in the one pair column.

Note When the system is powered by a backup battery, range may be less as the back up battery is discharged.

Station Loop Lengths

CIX100, CIX200 CIX670, and CIX1200 Station Wiring Loop Length			
Model		Maximum line length (24 AWG)	
		1 Pair ¹	2 Pair
All DP5000-series telephones		1000 ft. (303m)	1000 ft. (303m)
All DP5000-series telephones except DP5008	with DOCA1A for OCA	1000 ft. (303m)	1000 ft. (303m)
All DP5000-series telephones except DP5008	with 1ADM (LM5110, KM5020)	675 ft. (204m)	1000 ft. (303m)
All DP5000-series telephones except DP5008	with 2ADM (LM5110, KM5020)	500 ft. (151m)	1000 ft. (303m)
All DP5000-series telephones except DP5008	with 1ADM (LM5110, KM5020)+DOCA1A	675 ft. (204m)	1000 ft. (303m)
All DP5000-series telephones except DP5008	with 2ADM (LM5110, KM5020) + DOCA1A	500 ft. (151m)	1000 ft. (303m)
DDM5060		1000 ft. (303m)	N/A

¹ BWDKU and BDKS do not support two pair wiring, one-pair wiring must be used.

Station Loop Length for CIX40 only

Telephones must be placed within the allowed maximum distance of the CIX40 as shown in the table below. To achieve maximum line length with one-pair 22 AWG or larger wiring is required. CIX40 systems do not support Speaker OCA (DOCA1A) on any telephones.

Note When the system is powered by a backup battery, range may be less as the back up battery is discharged.

Station Loop Lengths for CIX40 Only

Model		Maximum line length (24 AWG)
		1 Pair
All DP5000-series telephones		1000 ft. (303m)
All DP5000-series telephones except DP5008	with 1ADM (LM5110, KM5020)	675 ft. (204m) 1000 ft. (303m) if 22 AWG or larger wiring
All DP5000-series telephones except DP5008	with 2ADM (LM5110, KM5020)	500 ft. (151m) 1000 ft. (303m) if 22 AWG or larger wiring
DDM5060		1000 ft. (303m)

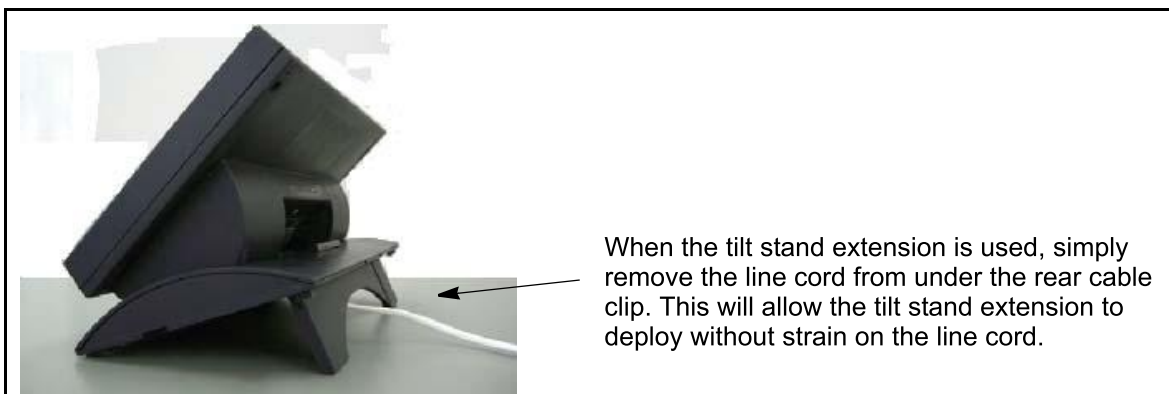
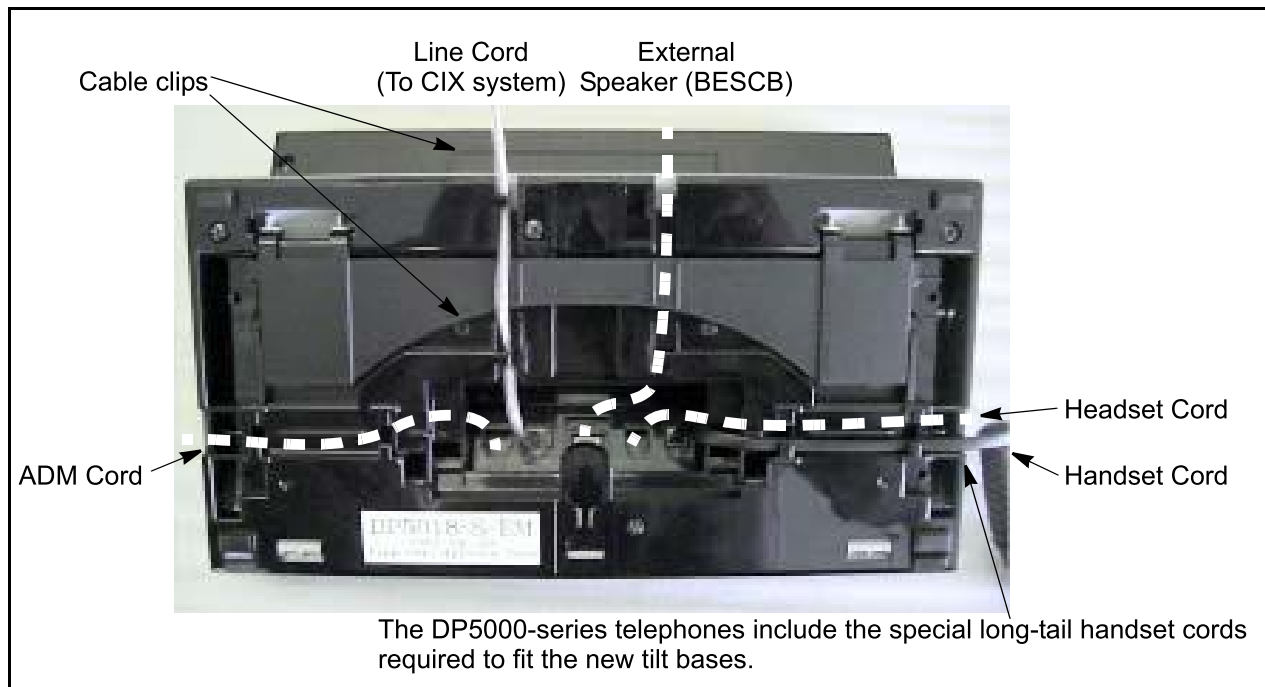
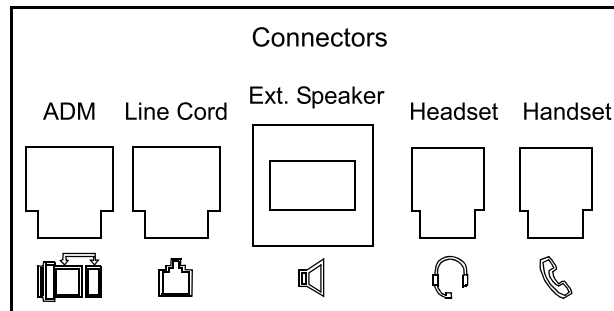
DP5000-Series Telephone and ADM Power Factors

The table below shows the -24 VDC power factor for the devices listed.

Telephone Model Number	Power Factor
All DP5000-series telephones	1.0
DOCA1A	0.1
LM5110 KM5020	0.4
DDM5060	0.8

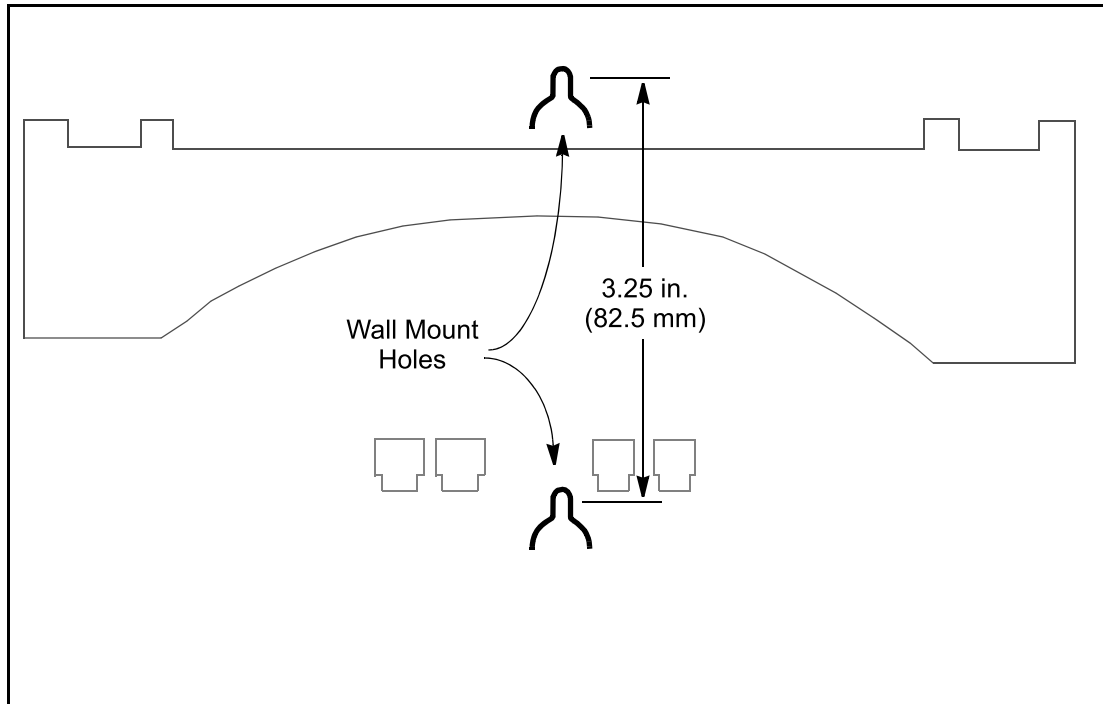
Installation Guidelines

The connectors on the DP5000-series telephones are identified with icons. The connector icons and their meaning are shown below.



Wall Mounting

All of the DP5000-series telephones, except the DP5008, wall mount in the same manner. Attach two screws to the wall, slide the telephone down over the screw heads to secure.



Wall mounting requires two pan head screws spaced vertically 3.25 inches apart and a short line cord.

DP5008 Wall Mount Procedure

1. Remove the four screws holding the telephone base.
2. Remove the base, rotate 180 degrees then, replace the base.
3. Secure the base with the four screws removed in step 1.
4. Install a short line cord, hang the telephone on two pan head screws in the wall.

Add-On Module Installation

Each add-on module is packaged with the metal brackets and screws used to attach the ADM to a DP5000-series telephone, or another ADM. The ADM package also includes the short line cord to connect the telephone to the ADM or the ADM to a second ADM.

The ADM and telephone bases are connected together with metal brackets to form a single unit. The ADM and telephones tilt independently.

The ADM Installation follows:

1. Unplug the line cord from the telephone.
2. Use the brackets and screws included in the box to attach the ADM base to the telephone base. Refer to [Figure 3](#).
3. Use the ADM cable included to connect from the telephone ADM connector to the ADM 'IN' connector. If a second ADM is attached, that cable runs from the first ADM "OUT" connector to the second ADM "IN" connector. Refer to [Figure 3](#).
4. Plug in the DP5000-series telephone line cord. If the DDM5060 was attached replace the line cord with the two-pair line cord included with the DDM5060.

CAUTION! Unplug the line cord from the DP5000-series telephone before attaching the ADM. Plugging the ADM cable in while the DP5000-series telephone is powered will damage the telephone, ADM or both.

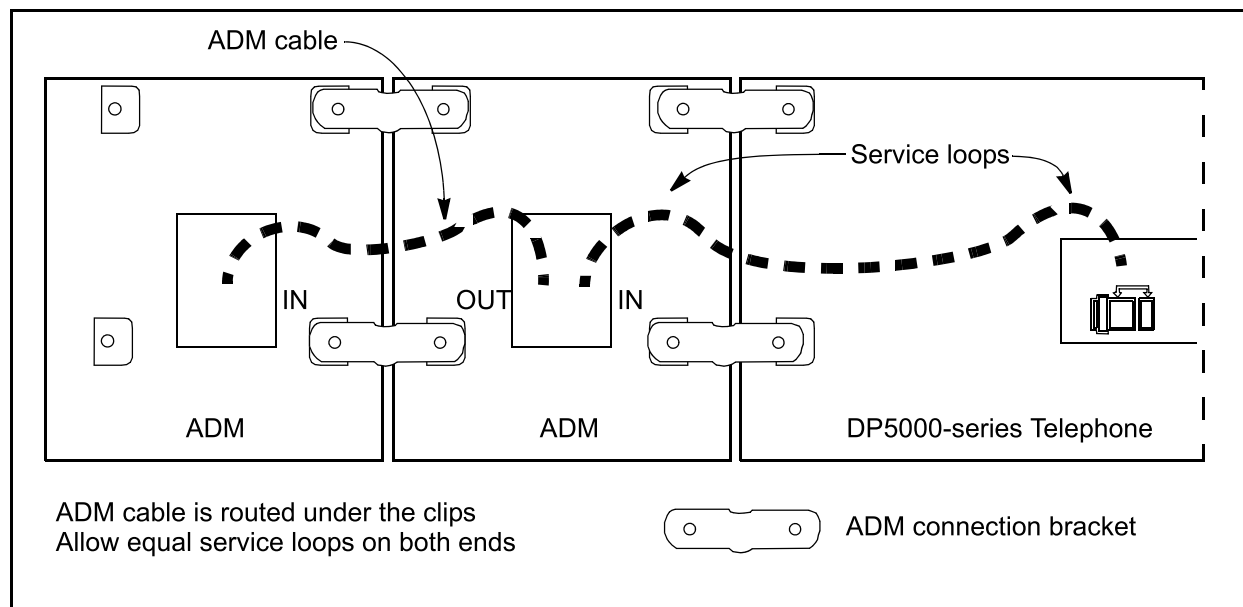


Figure 3 DP5000-Series ADM Connection

Telephone Administration Reference:

To Initialize a DP5000-series telephone:

1. Press 3+6+9+Hold (simultaneously)
2. Press MODE softkey
3. Press Msg key
4. Press Hold
5. Press Volume Up
6. Press Msg key
7. Press Hold
8. Go off-hook then on-hook to exit programming mode.

This will reset all the programming mode options settings back to the factory default.

The DP5000-series telephones can be programmed in the same manner as the DKT3200-series telephones with the following considerations:

LCD Keystrip Setup (DP5130-SDL, DP5130-FSDL and LM5110)

LCD Keystrip Setup using Network eManager for DP5130-SDL and DP5130-FSDL

Network eManager version V5.10A05 or later is required.

Assign Keystrip Label Resources to device

1. Log into Network eManager
2. Select Station > Station Assignments
3. From the station list on the right hand side of the screen, choose the extension number to change.
4. Click on the DKT tab
FB 03: Keystrip Button Quantity should be changed to 10
FB 39: LARGE LCD PHONE should be changed to DP5130.
5. Click on the Submit button.

Note To change this DN to another DP5000-series telephone or to a DKT, with a key type other than 10 use the following steps.

1. Change FB 39 to "Not DP5130"
2. Press Submit.
3. Change FB 03 to a value other than 10.
4. Press Submit.

Program Keystrip Labels using Network eManager for DP5130-SDL and DP5130-FSDL

1. Log into Network eManager
2. Select Station > Station Assignments
3. From the station list on the right hand side of the screen, choose the extension number to change.
4. Click on the Key tab
5. Click on the button to be setup

6. Choose the feature to be applied from the feature list on the right-hand side.
7. A Webpage Dialog box pops up that allows the feature to be customized
8. Key Strip Label will be the name that appears on the LCD label, it can be setup with an easy to remember identifier.
9. Click OK
10. Click Submit.

LM5110 LCD Keystrip Setup using Network eManager

Network eManager version V5.10A05 or later is required.

Assign Keystrip Label Resources

1. Log into Network eManager
2. Select Station > Station Assignments
3. From the station list on the right hand side of the screen, choose the extension number which corresponds to the LM module to be labeled.
4. Click on the DKT tab
5. FB 40: ADM1-LCD KEYSTRIP should be changed to LM5110.
If more than one LM module is attached change FB41 to LM5110. Up to two LM modules can be connected.
6. Click Submit.

- Note** To remove an LM module (ADM1 or ADM2)
1. Change FB 40 (ADM1) or FB 41 (ADM2) to "Not LM5110"
 2. Click on Submit.
 3. Change FB 4 to "One" or "None" as appropriate.
 4. Click on Submit.

Program LM5110 Keystrip Labels using Network eManager

1. Log into Network eManager
2. Select Station > Station Assignments
3. From the station list on the right hand side of the screen, choose the extension number to change.
4. Click on the Key tab
5. Click on the button to be setup under LCD Key ADM1 or LCD Key ADM2 if more than one LM module is connected.
6. A Webpage Dialog box pops up that allows the button to be customized
7. Enter the Extension number to be assigned to the button.
8. Key Strip Label will be the name that appears on the LCD label, enter an easy to remember identifier.
9. Click OK
10. Click Submit.

Program LCD Keystrip Labels (for DP5130 and LM5110)

1. Dial #9876 (or press the flexible Program key)
2. Press the speaker button.
3. Press the key you wish to label.
4. Use the dial pad to enter the label.
5. Press the key labeled in step 3 to save the setting.
6. To program another key, repeat steps 2-5.

End-user Reference Guide

Programming changes can be done through the telephone or through MyPhoneManager. Following are the instructions using the telephone.

Volume Control

The following instructions apply to all telephones, except DP5008.

- **To adjust the handset volume**
 - Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume during the call. When you hang up, the volume returns to the default setting.
- **To adjust the speaker volume for internal/external calls and background music**
 1. Press **Spkr**.
 2. Press an extension button - you hear dial tone.
 3. Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume. This volume setting applies to all calls until changed.
- **To adjust Ring Tone, Hands free Answerback and Speaker Off-hook Call Announce**
 - Make sure the telephone is idle and the handset is on-hook. Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume. This adjusts volume for your telephone's ring tone, Hands free Answerback and Speaker Off-hook Call Announce simultaneously.
- **To adjust handset Beep Tone**
 1. With the handset off-hook, dial the Beep Tone Adjustment Code **#6101** (default code). You hear busy tone.
 2. Press **Vol ▲** or **▼** to reach the desired level.

Volume Control for DP5008 Telephone

- Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume during it.
- **To adjust the handset volume**
 - Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume during the call. When you hang up, the volume returns to the default setting.
- **To adjust the speaker volume for internal/external calls and background music**
 1. Press **Spkr**.
 2. Press an extension button - you hear dial tone.
 3. Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume. This volume setting applies to all calls until changed.
- **To adjust Ring Tone**
 - Make sure the telephone is idle and the handset is on-hook. Press the **Vol ▲** to increase volume and **Vol ▼** to decrease volume.

Mic/Mute Key

Mute on the DP5000-series telephones mutes not only the microphone but also the handset microphone as well. The MIC key on the telephones toggles between Mic and Mute. When Mic key is lit, hands free communication is supported, when Mic key is pressed and light is off, Mute is enabled.

- During a hands free conversation, press the Mic key, the red indicator will turn off; the microphone and handset are muted.
- Press the Mic key again to resume hands free communication, the red indicator will turn on.

Speakerphone/Microphone Sensitivity Adjustment

When you are using the speakerphone, high ambient noise levels may cause the party you are talking with to be cut off frequently. If this happens, follow these steps to lower the sensitivity of the microphone on a DP5000-series telephone. The default is normal sensitivity.

1. Press **Hold+3+6+9** (simultaneously).
2. Press **0**.
3. Press Programmable Feature Button 3 (FB3) to toggle On/Off.
 - FB3, LED On: Lower sensitivity
 - FB3, LED Off: Normal sensitivity
4. Press Hold to set the option.
5. Go off-hook, then on-hook to exit the program mode.

Full Duplex Speakerphone Environment Setup (DP5130-FSDL)

The DP5130-FSDL has a powerful integrated full duplex speakerphone that provides bi-directional voice transmission, allowing simultaneous talk. The microphone is located on the front right side of the telephone, so all objects need to be kept well clear of that area to ensure there are no reflections that might generate an echo or other feedback. In a full duplex speakerphone environment, a number of conditions including room acoustics, network conditions, or the other party's equipment can induce echo, a short silence, or clipped speech, so it is important to use the following recommendations for optimal user experience.

Recommended Environment for Optimal Performance:

- Keep objects, for example; books, equipment or walls, away from the front and sides of the telephone.
- Keep telephone away from noise sources (e.g. PC fan).
- For small, enclosed office environments that have acoustical reflection, it may be necessary to select the lower speakerphone/microphone sensitivity setting (as shown above).
- The DP5130-FSDL is not recommended for very small rooms, which tend to have higher acoustical reflection and can result in echo or feedback. For this room environment, please consider the DP5130-SDL model (half duplex speakerphone).
- When using a SIP Trunk backbone Toshiba recommends the IP5131-SDL model, which is optimized for a full IP environment.

Key Considerations for Better Call Quality:

- The powerful built-in echo canceller is constantly adjusting to its environment, providing optimal performance. For the first few seconds of a call, only one side should speak at a time as the echo canceller optimizes for its environment.

- For best performance, users should speak in front or slightly to the side of the telephone.
- In a full duplex environment, it is important that both sides speak at similar voice volume levels. If you hear clipped speech on your side, please speak louder and/or move closer to the microphone so that your speech is properly identified by the echo canceller.

If you hear clipped speech from the other side, please ask them to speak louder and/or move closer to the microphone. The DP5000 Series provides a wide range of volume steps, so you can also lower your volume setting 3 to 7 steps to better match the voice levels.

- The echo canceller is constantly optimizing, so it is important not to move the telephone while in use. Furthermore, do not move paper or other objects near the microphone area during the call, which could generate a loud noise or cause an echo to be transmitted to the other side.
- Should an echo occur, simply pause a moment to allow the echo canceller to re-adjust. Continue to follow the steps above for better call quality.

Backlight Options

Available on DP5100-model telephones and LM models. The backlight setting for the telephone also sets the LM backlight. This setting adjusts when the backlight comes on and how long it stays lit.

Note The backlight timing and brightness controls have no effect on non-display and non-backlight models. The Bright/Dim softkeys will appear on non-backlight models but, have no effect.

► To change Backlight Settings

1. Press **Hold+3+6+9** (simultaneously).
2. Press the **Mic** button.
3. Use table below to choose preferred settings.
4. Press **Hold** to save settings

FB4	FB3	FB2	FB1	Meaning	Delay (in Seconds)
On	On	On	On	Always On	None
On	On	On	Off	Synchronized	300
On	On	Off	On	Synchronized	240
On	On	Off	Off	Synchronized	180
On	Off	On	On	Synchronized	160
On	Off	On	Off	Synchronized	140
On	Off	Off	On	Synchronized	120
On	Off	Off	Off	Synchronized	100
Off	On	On	On	Synchronized	80
Off	On	On	Off	Synchronized	60
Off	On	Off	On	Synchronized	50
Off	On	Off	Off	Synchronized	40
Off	Off	On	On	Synchronized	30 (Default)
Off	Off	On	Off	Synchronized	20
Off	Off	Off	On	Synchronized	10
Off	Off	Off	Off	Always Off	None

Note FB1 is the lower left key, FB2 is the next up, FB3 is above FB2, and FB4 is above FB3.

Brightness Control

Available on DP5100-model telephones and the LM5110 ADM.

- To change the LCD back light brightness on the DP5100-model telephone and the LM5110 ADM:
 1. Press **Hold+3+6+9** (simultaneously).
 2. Press **Bright** softkey on the telephone to increase brightness. On the LM5110 use the **Bright** softkey.
 3. Press **Dim** softkey to decrease brightness. On the LM5110 use the **Dim** softkey.
 4. Lift the handset off-hook / on-hook to save the settings.

LCD Contrast Adjustments

Available on all DP5100-model LCD models and the LM5110 ADM.

- **To adjust the LCD contrast on the DP5100-model telephones**

1. Press and hold down the **Mic** button.
2. Press and release **Vol ▲** or **Vol ▼** repeatedly.

Note Holding the Vol key does not continue to change the setting. The key must be pressed for each step of contrast change.

- **To adjust the LCD contrast on the LM5110**

1. Press **Hold+3+6+9** (simultaneously).
2. Press **Contrast +** key to increase contrast.
3. Press **Contrast -** key to decrease contrast.
4. Lift the handset off-hook / on-hook to save settings.

Note Holding the softkey does not continue to change the setting. The softkey must be pressed for each step of contrast change.