

## **ACCESS LINES**

# AL-1 Analog Centrex Access Line

The State bill will show: HSG Single Line

Includes the analog access line facility from State location to the appropriate serving Central Office (CO), Centrex features, and a station-to-trunk ratio of 10:1.

All features included in the analog line rate.

In addition to below, see responses to Section 3.1.1, 3.3.1, and 3.3.4.

- 3 Way Calling
- Auto Line
- Authorization Codes
- Automatic Line Selection
- Automatic Route Selection
- Call Blocking
- Call Forward Busy
- Call Forward Fixed
- Call Forward No Answer
- Call Forward Variable
- Call Hold
- Call Park
- Call Pick Up
- Call Transfer/Consultation Hold
- Call Waiting
- Caller ID
- Calling Number Display
- Charge Account and Calling Party Number
- Conference
- Controlled Class of Service
- Direct Inward Dialing
- Direct Outward Dialing
- Directed Call Park
- Directed Call Pick Up
- Distinctive Ringing
- DTMF
- Hunting
- Last Number Redial

- Message Waiting Indicator Stutter/Lamp
- Music on Hold
- No Double Connect
- Ring Again/Callback Calling
- Speed Calling
- Station To Station Calling
- Stored Number Redial



## AL-2 Multi-line Centrex Access Line

The State bill will show: **HSG Multi-line** 

This includes the multi-line access line facility from State location to the appropriate DMS-100 host or remote serving Central Office (CO), Centrex features, and a station-to-trunk ratio of 10:1. All features are included in the Multi-line rate.

In addition to below, see responses to Section 3.1.2, 3.3.2 and 3.3.4.

- 3-Way Calling
- Authorization Codes
- Auto Dial
- Auto Line
- Automatic Answer Back
- Automatic Line Selection
- Automatic Route Selection
- Busy Lamp Field
- Call Blocking
- Call Forward Busy
- Call Forward Fixed
- Call Forward No Answer
- Call Forward Variable
- Call Hold
- Call Park
- Call Pick Up
- Call Transfer/Consultation Hold
- Call Waiting
- Caller ID
- Calling Number Display
- Charge Account and Calling Party Number
- Conference
- Controlled Class Of Service
- Dial Intercom Groups
- Direct Inward Dialing
- Direct Outward Dialing
- Directed Call Park
- Directed Call Pick Up
- Distinctive Ringing
- DTMF
- Hunting

- Last Number Redial
- Make Set Busy
- Message Waiting Indicator Lamp
- Multiple Appearance Directory Number
- Music on Hold
- No Double Connect
- Override
- Ring Again/Callback Calling
- Soft Number
- Speed Calling
- Station To Station Calling
- Stored Number Redial



# AL-3 Statewide 5-Digit Dialing and Interisland Toll-Free Dialing

The State bill will show: HSG 5 Digit & Interisland Dialing

The following features are associated with the statewide 5-Digit Dialing and Interisland Toll-Free Dialing service element:

- Five-Digit Intercom Dialing
- Interisland Off-Net Calling via Private ISUP Trunk Groups and Host-Remote links
- The Statewide 5-Digit Dialing and Interisland Toll-Free Dialing feature was built and functions specifically for the State.

Included is the capability for analog and multi-line Centrex lines to access a non-toll, uniform 5-digit dial plan between Advanced Intelligent Network (AIN) Multilocation Centrex (MLCN) capable offices on Oahu, Hawaii, Maui and Kauai. On each island, five-digit station-to-station dialing is routed over Hawaiian Telcom's inter-office network. Molokai and Lanai will be provisioned to provide State users with five-digit station-to-station dialing.

Hawaiian Telcom maintains a customized database of State stations that associates each five-digit station number to its equivalent ten-digit network number. The service is a customized solution, designed and implemented on a Custom Solution Process (CSP) specifically for the State. Therefore, the features are available exclusively to the State of Hawaii.

The solution utilizes Hawaiian Telcom's AIN Network. The AIN network is comprised of several telco proprietary hardware/software platforms that reside within Hawaiian Telcom's network. Different and redundant component parts are located in various Central Offices to provide diversity and resiliency. The two major component parts include the Signal Transfer Point which routes/switches SS7 messages between the nodes in the network and the Service Control Point, which houses the databases, logic rules, and in the case of MLCN, routes the call to the supplied directory number. Once the Service Control Point determines the correct number, then the call is passed on to the Central Office.

With MLCN, when the caller places a call, the Central Office sends the request to the Signal Transfer Point, which relays the request to the Service Control Point database. The database performs a look up of the abbreviated number and finds the actual phone number, preferred route and sends the call to the proper Central Office. The routing codes are determined at the time the service is installed. Routing codes are determined by the caller via the access codes: i.e. 5-digit, or 8-1-808 calls.

Analog and multi-line Centrex stations located on the islands of Oahu, Hawaii, Maui, Kauai, Molokai and Lanai may dial off-net interisland calls by dialing a single digit access code of eight (8) followed by the digit one (1) plus the ten-digit PSTN number. These interisland station-to-station calls are routed over the State's private ISUP and H-R trunk groups.

The interisland private trunk groups are provisioned as Integrated Services Digital Network User Part (ISUP)-type trunks with SS7 trunk signaling. ISUP trunk signaling is required for



this service to function since special ISUP parameters such as OriginalCalledPartyID, RedirectingPartyID and CallingPartyID are needed to communicate critical call routing information between switching offices.

The Host-Remote (H-R) links connect the Nortel remote-switching units (RSC-S) on the islands of Maui, Kauai, and Hawaii to the DMS-100 base unit on Oahu. There are four H-R Links to Maui, four to Kauai, and six to Hawaii. The traffic on the host-remote links consists of interisland station-to-station calls between Civic Center users, as well as interisland toll-free, off-net calls from Civic Center users (8+1 dialing). Hawaiian Telcom is proposing to implement one (1) SS7 trunk each, from Oahu to Molokai and Lanai. This will enable Molokai and Lanai State users with the ability to dial 5-digit dialing and toll free interisland off-net calling.

There is a mandatory charge for each analog Centrex line (AL-1); multi-line Centrex access line (AL-2); and for each B-channel on an ISDN BRI Centrex Line (AL-12) except for:

Stations not technically capable of utilizing the statewide 5-Digit Dialing and Interisland Toll-Free Dialing feature due to the restricted NCOS, such as elevator lines.

See also responses to Section 3.2.1 and 3.2.2.

# AL-4 Additional Soft Number (Multi-line)

The State bill will show: **HSG Addl Soft No** 

This is an optional service element that provides an additional soft number on a multi-line access line. This capability is available on the DMS-100 platform with a multi-line access line.

A soft number provides all the functionality of an additional telephone number assigned to a multi-line set, but does not require additional physical line equipment or a separate physical cable facility.

A soft number will only be found above key one on a multi-line set. To be considered a soft number, it cannot appear anywhere else as key one of a multi-line phone or as the telephone number of an analog station line.

Because of the flexibility that soft numbers allow, many different arrangements are possible. Typical examples include:

A multi-line station with a telephone number on key one, a second telephone number
on key two, and a third telephone number on key three. Neither of the telephone
numbers associated with key two or key three appear anywhere else as key one of a
multi-line set or the telephone number of an analog station. In this case, keys two and
three are considered soft numbers.



• A multi-line station with a telephone number on key one, a second telephone number on key two, and a third telephone number on key three. The telephone number associated with key two does not appear as key one of a multi-line set or the telephone number of an analog station. However, the telephone number associated with key three is also the telephone number of an analog station. In this case, key two is considered a soft number. Key three is not considered a soft number. Instead, it is considered a Multiple Appearance Directory Number.

# AL-5 Billed Screening Number

The State bill will show: **HSG Call Screening** 

An optional Call Screening feature is available on a per line basis to prevent the billing of certain collect and third number billed calls to a Centrex line. Special equipment sending signaling protocols, Signaling System No. 7 (SS7) data from the originating caller's location is required to make this feature operable. It is safe to say that almost all of the telephone companies in the United States send SS7 codes as part of the call. However, concern for abuse of third number billing and collect calls exists from other foreign countries with older central office equipment which may not have such equipment to send/receive this data.

As such, collect and third number calls being billed to State telephone lines with the optional Call Screening feature will be prohibited where the proper SS7 codes are sent to Hawaiian Telcom. The operator will notify the calling party that the telephone number does not allow third party or collect calls. However, charges may still appear on a line that subscribes to Call Screening if the originating caller's long distance carrier or facilities is not compatible with the service.

Phone fraud also occurs when scammers break into a voicemail box (usually due to the user not customizing/changing the password from the default password) and reprogram the user's voicemail system to respond with the word, 'yes.' A third party call is then billed to the user's phone number and when the foreign long distance operator calls for authorization to charge the call, the voicemail system answers the call with 'yes.'

There is a records only non-recurring charge of \$8.50 per line and a monthly recurring charge of \$2.00 per line.

See also response to Section 3.2.6.

# **AL-6 Additional Network Access Register (NAR)**

The State bill will show: **HSG Addl NAR** 

This is an optional service element that allows the State to purchase an additional Network Access Register (NAR) on an ala carte basis for specific applications where additional trunking is necessary above and beyond the standard station-to-NAR ratio included with the access lines.



A NAR is a software-defined path in the central office that provides Centrex lines with access to the public switched telephone network (PSTN). For example, a call from a Centrex station to a non-Centrex station would require a NAR to get from the Centrex station's customer group to the public network. Conversely, a non-Centrex station that dials a Centrex station's seven-digit telephone number will use a NAR to connect from the public network into the Centrex station's customer group.

The access line rates – described in AL-1 and AL-2 – include a pooled quantity of NARs at a 10:1 station-to-NAR ratio. In other words, one (1) NAR is included for every ten (10) Centrex stations in a customer group. For typical customer groups, this ratio will provide an adequate number of trunks to the public network.

Certain applications may require a lower station-to-NAR ratio, which would increase the number of NARs available to that customer group. For example, several State agencies operate call centers that utilize Automatic Call Distribution (ACD). Among other functions, an ACD provides the ability to queue callers when all available agents are busy. Each queued caller requires an available NAR while they wait for an available agent. Although the ACD station rate includes NARs, additional NARs may be required to accommodate the number of queue slots available.

# **AL-7** Enhanced ACD Group and Group Features

The State bill will show: **HSG EACD Grp** 

Automatic Call Distribution (ACD) is provided in association with Centrex as an optional service arrangement. There is a monthly recurring charge for each ACD group including the following group features:

#### **Group Features**

- Incoming Call Queue
- Call Delay Announcement
- Music On Delay
- Automatic Overflow

- Night Treatment
- Basic Reports
- Ring Threshold
- Call Forcing

See also response to Section 3.1.5.

# AL-8 ACD Analog Station Features (agent or supervisor)

The State bill will show: **HSG ACD Analog Station Features** 

This is an optional feature set for an Analog Centrex Access Line (refer to AL-1). To use an analog Centrex station in an ACD group, both AL-1 and AL-8 are required.

Includes the applicable features required for an analog Centrex access line to be an agent within a DMS-100 Centrex ACD group.



#### **ACD** Analog Agent Features

- Not-Ready
- Call Forcing

Make Set Busy

**Not-Ready** – Activating this feature terminates any active call, and prevents new ACD calls from being routed to the position.

**Call Forcing** – Call Forcing increases the speed of ACD call handling by automatically presenting incoming call to ACD agents.

**Make Set Busy** – Blocks calls to the position. The feature is automatically activated if the ringing timer expires on an ACD call presented to that agent.

# AL-9 ACD Multi-line Station Features (agent or supervisor)

The State bill will show: **HSG ACD Multi-line Sta Features** 

This is an optional feature set for a Multi-line Centrex Access Line (refer to AL-2). To use a Multi-line Centrex station in an ACD group, both AL-2 and AL-9 are required. Includes the applicable features required for a multi-line Centrex access line to be an agent within in a DMS-100 Centrex ACD group.

#### ACD Multi-line Agent Features

- Incalls Key
- Secondary Directory Agent Number
- Call Forcing

- Not-Ready Key
- Make Set Busy Key

**Incalls Key** – The Incalls key allows a DMS Meridian ACD agent with a multi-line telephone to answer incoming ACD group calls by pressing the first key on the set. The Incalls key presents only incoming ACD calls and cannot be used for placing outgoing calls. A multi-line telephone may be a member of one ACD group. For the agent to answer non-ACD calls or to place outgoing calls, the agent position must have been assigned one or more secondary directory numbers.

**Secondary Directory Agent Number** – Secondary directory numbers are used by agents to place or receive non-ACD calls or to receive transferred calls directed specifically to them.

**Call Forcing** – Call Forcing increases the speed of ACD call handling by automatically presenting incoming call to ACD agents.

**Not-Ready Key** – Pressing this key terminates any active call, and prevents new ACD calls from being routed to the position.

**Make Set Busy Key** – Blocks calls to the position. The feature is automatically activated if the ringing timer expires on an ACD call presented to that agent.



#### **ACD Supervisor Features**

- Agent Status Lamp
- Lamp Position Status
- Observe Agent

- Call Observing
- Display Queue-Status Key
- Display Agents Summary

#### **Agent-Status Lamp**

The Agent-Status Lamp and the Display Queue-Status key can be used in conjunction with the other supervisor-set keys to efficiently manage the resources of the DMS Meridian ACD group.

The Agent lamp helps the supervisor track the status of each agent position in the group.

#### **Lamp Position Status**

OFF Agent position unmanned (Make Set Busy activated) ON Agent handling an ACD call FLASH Agent waiting for an ACD call WINK Agent busy on post-call work (Not-Ready activated)

#### **Observe Agent Key**

The Observe Agent key allows the supervisor to monitor the quality of service being offered incoming callers.

The key also can be used for new agents to audit the call-handling techniques of experienced agents. Only calls presented on an agent's Incalls key can be observed.

The supervisor establishes a listen-only path to the agent and incoming caller by pressing the Observe-Agent key and then dialing the directory number associated with the agent position's Incalls key or pressing the key associated with the particular agent.

#### **Call Observing**

A supervisor can observe agent ACD calls and non-ACD calls on the DSDN. To invoke the feature, the supervisor presses the Observe (OBS) key, then the individual's Agent key. Once the supervisor is in the observe mode, the feature automatically switches the supervisor between calls as the agent moves between conversations on the two directory numbers.

When an Agent key is pressed on a supervisor's set with display, the same information shown in the Call Monitoring portion of this package is then displayed. The information is automatically updated as the agent moves from call to call.

#### **Display Queue-Status Key**

Supervisors can use the Display Queue-Status key to verify that incoming calls are being handled efficiently by the manned agent positions.

Each time the supervisor presses the Display Queue-Status key, the display window shows the following current information for the corresponding ACD directory number:

- Number of manned agent positions
- Number of calls waiting in the incoming-call queue
- Number of calls logically queued against group
- Waiting time (in seconds) of the oldest call in queue



Each supervisor can have one or more Display Queue-Status keys to monitor different ACD directory numbers.

If desired, more than one supervisor position can be assigned a Display Queue-Status key for the same ACD directory number.

#### **Display Agents Summary**

This feature-key activated option enables the ACD supervisor using a Business Set with display to quickly check the status of all ACD agent positions assigned to a particular agent group.

This serves the same function as the Agent-Status Lamp (ASL) feature, which provides the supervisor with individual agent status information; however, this feature requires only one key, while ASL requires multiple-agent keys to monitor all agents within the supervisor's group.

To invoke this feature, the supervisor presses the Display Agents Summary Key (DASK). The display then shows the number of agents who are:

- busy on ACD and non-ACD calls,
- waiting for calls (idle),
- not ready to receive ACD calls, and
- not available (agent not logged in or Make Set Busy activated).

# AL-10 Call Center Manager MIS Link (First Group)

The State bill will show: **HSG Call Cntr Mgr 1**<sup>st</sup> **Grp** 

This provides the real-time display and monitoring of ACD agent and call activity for a Customer's Centrex ACD group. Monitoring and display capabilities are provided in conjunction with customer-provided premises equipment and a separately priced network connection between the customer's premises and the Alakea Central Office. The specific premises equipment and network required are based on the specific requesting agency's requirements.

The State currently has two agencies that have purchased the Centrex Call Center Manager MIS Link. The premises equipment selected based on the agencies' requirements were customer-provided 56Kbps analog modems and the network used were analog Centrex lines.

See also response to Section 3.1.5.

# AL-11 Call Center Manager MIS Link (Additional Group)

The State bill will show: HSG Call Cntr Mgr Addl Grps

For Customers already subscribing to the Call Center Manager MIS Link, this charge applies for each additional Centrex ACD group (after the first) that the Customer will display and monitor using the Call Center Manager.



## AL-12 ISDN BRI Centrex Line

The State bill will show: **HSG ISDN BRI Line** 

The ISDN BRI Centrex Line delivers local flat-rate, voice-only multi-line set capabilities to stations served from ISDN BRI capable central offices. An ISDN BRI Centrex line is a fully digital facility that can support two (2) ISDN multi-line sets, each on its own B-channel. 5-digit dialing will be accomplished via AIN Multilocation Centrex service (refer to AL-3).

The rate includes two (2) B-channels and assumes utilization of the existing State of Hawaii Centrex customer groups' Network Access Registers (NARs). Demarcation is the SJA-11 jack or designated block. The regulated service demarcation point will be established at the minimum point of entry.

See also response to Section 3.1.4.

ISDN BRI Centrex Features (in addition to, or in place of, Centrex features)

Automatic Callback on Busy	■ Intercom Function
Automatic Dial	■ Key System Coverage for Analog Lines
<ul><li>Bridging</li></ul>	■ Manual Exclusion
Call Forwarding	■ Message Waiting Indicator
Call Pickup	■ Multiple Directory Number
■ Call Park	■ Privacy Release
■ Caller ID	■ Ring Again
Conference Calling/Three Way Calling	<ul> <li>Shared Call Appearances of a Directory Number</li> </ul>
■ Drop	■ Speed Calling
■ Hold	■ Transfer
Hunting	

# **AL-13a Voice Mail Service Charge**

The State bill will show: HSG Voice Mail

Voice Messaging is integrated with the proposed Centrex and ISDN BRI lines and allows users to receive telephone messages when their telephone line is busy or unanswered. Voice messages may be retrieved using a standard touch-tone telephone.



Standard voice messaging includes the following features:

	Two-minute Greeting Message		30 Message Storage Capacity
	Two-minute Message Length		30 Day Message Storage Duration
	Five Broadcast Group Lists, Maximum 24 Recipients		Message Wait Notification to Subscriber
	Broadcast and Transfer Messages		User Password Protection
•	Personalized and System Default Voice Mail Greeting	•	Urgent Message Classification
	Time and Date Stamp on Messages		Transfer to Receptionist
	Remote Off-site Retrieval of Voice Messages		

# AL-13b Voice Mail Answer Only Service Charge

The State bill will show: HSG Voice Mail Answer Only

Hawaiian Telcom offers an "Answer Only" Mail Box which will allow a greeting length of three minutes. This is primarily used to provide a message or greeting only and not allow the caller to leave a message.

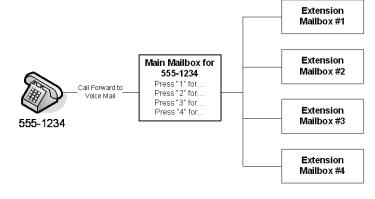
See also response to Section 3.1.3.

# **AL-13c Voice Mail Extension Mailbox (First)**

The State bill will show: HSG Voice Mail Ext 1st MB

A Voice Mail Extension Mailbox allows a user to have more than one voice mailbox associated with a single telephone number. Each Extension Mailbox is assigned a one-digit number for access and offers the same features of the main mailbox.

A Voice Mail Extension Mailbox (First) charge applies for the first voice mailbox in an extension mailbox arrangement.



A Voice Mail Extension Mailbox (Additional), described in AL-13d, applies for each additional voice mailbox in an extension arrangement.



A typical use of an Extension Mailbox is when a single telephone line is shared by multiple users. An Extension Mailbox allows each user to have his or her own mailbox, rather than share a single mailbox with others. This improves user productivity, as each user only listens to his or her own messages, instead of sifting through a single mailbox of messages that may not be relevant.

See also response to Section 3.1.3.

# **AL-13d Voice Mail Extension Mailbox (Additional)**

The State bill will show: HSG Voice Mail Ext Addl MB

A Voice Mail Extension Mailbox (Additional) applies for each additional voice mailbox beyond the first mailbox in an extension arrangement, as described in AL-13c.

See also response to Section 3.1.3.

# AL-14 Wire Maintenance Charge

The State bill will show: **HSG Inside Wire Maintenance** 

The wire maintenance charge is to maintain station wiring and cabling from the demarcation point to and including the jack in State owned buildings; lines in State leased buildings; extension lines; lines to a key, VoIP or other telephone system. Wiring and cabling for Key Systems and VoIP systems will be maintained up to the KSU or demarcation unit, i.e., RJ21X only. An additional wire maintenance charge is applicable for each telephone station unit behind each KSU or demarcation unit.

A customer may choose wire maintenance before a Key/VoIP system and the maintenance and repair of the cabling will stop at the demarcation before the Key/VoIP system. However, if a customer elects to take the wire maintenance after the Key/VoIP system to the station, the customer must take the maintenance before a Key/VoIP system as well. This coverage will give the customer continuity, repairing the cabling up to the Key/VoIP system and beyond all the way to the station jacks.

Hawaiian Telcom does not maintain the customer owned support structures and fiber risers however we are able to do repairs on a Time and Materials basis.

# **AL-15a Busy Line Verification**

Busy Line Verification is provided in response to a Customer's request for operator assistance to verify the existence of conversation on a line which indicates a busy condition to the Customer.



Charges will apply when verification indicates either conversation on the line or that the called party's telephone receiver is off the hook.

No charge is applicable when the busy indication on a line is caused by a Hawaiian Telcom service-related problem.

# **AL-15b Busy Line Interruption**

Busy Line Interruption includes Busy Line Verification and is performed in response to a Customer's request for operator assistance to:

- a. interrupt a verified ongoing telephone conversation to notify the called party that another caller (the Customer) is attempting to reach him;
- b. request termination of the existing call; and
- c. establish a connection between the Customer and the called party.

# **AL-16a Local Directory Assistance**

Local Directory Assistance Services are provided under HT's PUC Tariff 20, Section 5.13.2. Local or national published telephone numbers, area codes, or out-of-state listed name and/or address anywhere in the United States may be requested. A maximum of two listings per call may be requested and the operator should be told at the start that you will be requesting more than one listing.

There is no charge for the first five calls to request local or interisland telephone numbers during each monthly billing period for each main number. After that, charges do apply and these charges are standard for all Hawaiian Telcom customers. Local Directory Assistance call allowances not used in one billing period cannot be carried over.

# **AL-16b National Directory Assistance**

National Directory Assistance Services are provided under HT's PUC Tariff 20, Section 5.13.10. National Directory Assistance (NDA) will provide business and residence Customers with national directory listings from the Company's directory assistance database.

The Company will provide listings for residential, business, government, 1-800 and Company's emergency numbers.

You may request up to two listings per call and notify the operator at the start of the call that you will be requesting more than one listing. There is a standard charge for this service that applies to all Hawaiian Telcom customers.



## **LABOR RATE**

# LR-1 Basic Labor Charge (1 hour rate)

A Basic Labor Charge for one (1) hour is \$82.00.

The Basic Labor Charge for one (1) hour is comprised of the following:

One (1) First half hour charge at \$41.00: (1 x \$41.00)
 Two (2) One-quarter ¼ hour charge at \$20.50: (2 x \$20.50)

Below are labor charges and will be made where applicable:

	Non-	
	Recurring	
Service Description	Charge	State Bill Description
For first half hour or fraction thereof	<b>\$41.00</b>	HSG Minimum Labor
For each additional ¼ hour or fraction thereof	\$20.50	<b>HSG Basic Labor</b>

The Charge applies to Service Provisioning per service order for addition/relocation of line(s) requiring a site visit and also applies to repair.

# LR-2 Minimum Basic Labor Charge (minimum charge for part of an hour)

The Minimum Basic Labor Charge will be for the first half hour or fraction thereof at the rate of \$41.00.

NonRecurring

Service Description
For first half hour or fraction thereof

NonRecurring

Charge
Bill Description
HSG Minimum Labor

Charge applies to Service Provisioning per service order for addition/relocation of line(s) requiring a site visit and also applies to repair. Note: Labor-only without dial tone is a minimum of half hour.

# LR-3 Other Basic Labor Charge (1 hour rate) (optional item for other work)

Other Basic Labor Charge for non-installation work, such as removals, would fall under "Labor Only". Any non-installation work, such as removals of Customer Provided Equipment with no dial tone, will be charged the following:

Other Basic Labor Charge for (1) hour is \$82.00



Other Basic Labor Charge for (1) hour consists of the following:

- One (1) First half hour charge at \$41.00: (1 x \$41.00)
- Two (2) One-quarter <sup>1</sup>/<sub>4</sub> hour charge at \$20.50: (2 x \$20.50)

# LR-4 Overtime Labor Charge (1 hour rate)

Overtime Labor Charge will apply for effort or work outside the business day or after hours and all day Saturday.

An Overtime Labor Charge for one (1) hour consists of the following:

- One and a half (1.5) times one (1) first half hour charge at \$41.00:
   (1.5 x \$41.00)
- One and a half (1.5) times two (2) one-quarter (1/4) hour charges at \$20.50: (1.5 x (2 x \$20.50))

Charge applies to Service Provisioning per service order for addition/relocation of line(s) requiring a site visit and also applies to repair.

# LR-5 Minimum Overtime Labor Charge (minimum charge for part of an hour)

The Minimum Overtime Labor Charge will be assessed at one and a half (1.5) times the first half hour charge:  $(1.5 \times \$41.00)$ 

Charge applies to Service Provisioning per service order for addition/relocation of line(s) requiring a site visit and also applies to repair.

# LR-6 Premium Overtime Labor Charge (1 hour rate)

Premium hours are all day Sunday and Offeror Holidays.

Premium Overtime Labor Charge for one (1) hour consists of the following:

- Two (2) times one (1) first half hour charge at \$41.00: (2 x \$41.00)
- Two (2) times two (2) one-quarter (1/4) hour charges at \$20.50: (2 x (2 x \$20.50))

Charge applies to Service Provisioning per service order for addition/relocation of line(s) requiring a site visit and also applies to repair.



# LR-7 Minimum Premium Overtime Labor Charge (Sundays & Offeror Holidays)

A Minimum Premium Overtime Labor Charge will be assessed at two (2.0) times the first half hour charge:  $(2 \times \$41.00)$ 

Charge applies to Service Provisioning per service order for addition/relocation of line(s) requiring a site visit and also applies to repair.



## SERVICE PROVISIONING

# SP-1 Jacks and Wiring CAT 5E

The State bill will show: HSG Jacks & Wiring

A total charge of \$281.83 will be assessed for the installation of one dual station line at any location with RJ series dual modular jacks, 150 ft. of two 4-pair UTP plenum CAT5E wiring, associated equipment, and support structures and all network changes to provide telephone service. (This assumes that there are adequate 110 blocks and/or patch panel available in the wiring closet.) State will be billed on a "per dual station run" (ea.) basis.

The wiring and equipment charge of \$281.83 remains a fixed rate for up to ten lines on a per line basis. An option will be given to the customer for additional lines of eleven to twenty four to use either a fixed rate per line (generally for less complex wiring installations) or use the Cabling & Support Structure price list and will require that a design budgetary (cost estimate) be prepared.

Additional lines of twenty five or more will be subject to the Cabling & Support Structure price list and will require that a design budgetary (cost estimate) be prepared.

Should there be a requirement for additional 110 blocks and/or patch panels, these will be priced via the Cabling & Support Structure price list.

# SP-2 Jacks and Wiring CAT6

The State bill will show: **HSG Jacks & Wiring CAT6** 

A total charge of \$394.41 will be assessed for the installation of one dual station line at any location with RJ series dual modular jacks, 150 ft. of two 4-pair UTP plenum CAT6 wiring, associated equipment, and support structures and all network changes to provide telephone service. (This assumes that there are adequate 110 blocks and/or patch panel available in the wiring closet.) State will be billed on a "per dual station run" (ea.) basis. The CAT6 modular jack insert will be green for voice and yellow for data.

The wiring and equipment charge of \$394.41 remains a fixed rate for up to ten lines on a per line basis. An option will be given to the customer for additional lines of eleven to twenty four to use either a fixed rate per line (generally for less complex wiring installations) or use the Cabling & Support Structure price list and will require that a design budgetary (cost estimate) be prepared.

Additional lines of twenty five or more will be subject to the Cabling & Support Structure price list and will require that a design budgetary (cost estimate) be prepared.



Should there be a requirement for additional 110 blocks and/or patch panels, these will be priced via the Cabling & Support Structure price list.

# SP-3 Service Order Processing

The State bill will show: HSG Svc Order Processing

This is a one-time service order charge for the processing of any request for subsequent service on an existing line/record that is already in service.

# SP-4 Service Order Additional Line (2<sup>nd</sup> line)

The State bill will show: HSG Svc Ord Addl Ln

This is a one-time charge assessed for the second and additional line(s) placed on the same service request for order processing. This charge is associated with access line installations.

#### **SP-5** Network Connection

The State bill will show: **HSG Network Connection** 

This is a charge assessed on a service order request that requires Hawaiian Telcom to provide physical network connections related to the requested service.

# **SP-6** Network Connection Change/Retermination

The State bill will show: **HSG Ntwk Conn Change/Reterm** 

This is an access service charge assessed on a service order request that requires a change to an existing network connection. This charge is applicable per line for each change of telephone number, suspension/restoral of service, line terminations or other rearrangements to the line as a result of a customer request.

#### SP-7 Travel Dial Tone

The State bill will show: **HSG Travel Dial Tone** 

This is a charge assessed on a service order that requires Hawaiian Telcom to roll a truck to the customer's premise to perform work associated with the new and/or subsequent order on an existing access line.



#### SP-8 Travel Without Dial Tone

The State bill will show: **HSG Travel Charge** 

**\$40.00** (1) Travel Charge

The Travel without Dial Tone (SP-8) rate will apply when travel or site visit is required and does not involve line(s) or service. These are examples of when SP-8 Travel without Dial Tone charge of \$40.00 per order will be assessed:

- 1. When Jacks and Wiring (SP-1 and SP-2) are installed. An example of a situation where an SP-8 charge would apply is when a customer is requesting to add a jack for a computer where no new telephone line/service or extension station required.
- 2. When installing horizontal cabling only to the IDF.
- 3. Repairs to customer equipment and existing cabling and support structure.

# **SP-9** Software Change

The State bill will show: HSG Software Change

One (1) Software Change, per line, is assessed on a request for simple software changes to features on a telephone such as call forwarding, caller ID, changes to add intercom, reprogram a multi-line telephone keypad, change telephone number, change call pick-up groups, restrict long distance dialing, etc.

One (1) Software Change will be assessed no matter how many feature changes are being requested on a "per line" basis.

#### SP-10 Voice Mail

The State bill will show: HSG New Voice Mail

The charge is to establish a new voice mailbox. If the voice mailbox is being established in conjunction with a new access line, no Software Change (SP-19) is assessed. Service order processing charges for the establishment of the new access line are still applicable, i.e., (\$60.50 comprised of SP-3, SP-5, and SP-7).

# **SP-11 ACD Group Service**

The State bill will show: **HSG New ACD Group** 

This is a charge assessed on a service order for the installation of a new ACD group.



# SP-12 Call Center Manager ACD Service and Software

The State bill will show: **HSG New Call Cntr Mgr ACD** 

This is a charge assessed on a service order for the installation of a Call Center Manager's ACD Service and the associated software.

# SP-13 Drop Ship Charge

The State bill will show: **Dropship Charge** 

Note: A Drop Ship charge (SP-13) of \$10.00 will be added to every five (5) telephone instruments ordered. This is the price for Hawaiian Telcom to provide shipping for equipment only purchases. The shipping is from one of Hawaiian Telcom's Logistics offices on Oahu, Hawaii, Maui, or Kauai to a State customer. The shipment is made through a carrier.

#### **SP-14 Disconnect Service**

Disconnect telephone service to an existing station jack. No charge, providing field personnel are not required to roll a truck to customer premise or to remove wire.

# SP-15 Voice Mail – Existing Access Line

The State bill will show: HSG VM 1st Box Exist Access Ln

This charge is for the establishment of the first voice mailbox to an existing (already established) access line. An example of this is if a customer has telephone service and decides later to have voice mail added to the line, then SP-17 would apply.

The pricing consists of the following:

- \$8.50 (1) Service Order Processing (SP-3)
- \$5.50 (1) Software Change (SP-9)
- \$2.50 (1) Voice Mail (SP-10)

# SP-16 Voice Mail – Subsequent Mailbox Existing Access Line Same Order

The State bill will show: HSG VM Sub Box Exist Ln Sme Ord

This charge is assessed on the establishment of a subsequent voice mailbox to an existing (already established) access line on the same service request. An example is an office where all telephone access lines are invoiced on one customer account. If they would like to establish



voice mail on several telephones, then the first number would be assessed the charges on SP-19 and each subsequent mailbox would be assessed SP-20.

This charge is comprised of:

- **■** \$5.50 Software Change (SP-9)
- \$2.50 Voice Mail (SP-10)

## SP-17 ISDN BRI Centrex 1st Line

The State bill will show: HSG ISDN BRI Ctx 1st Ln

This is a charge assessed on a service order for the installation of one (1) ISDN BRI Centrex Line.

The pricing consists of the following:

- \$26.00 (1) Service Order Processing (SP-3)
- \$21.50 (1) Network Connection (SP-5)
- \$30.50 (1) Travel Dial Tone (SP-7)

# SP-18 ISDN BRI Centrex Additional Lines - Same Order, Same Location

The State bill will show: HSG ISDN BRI Ctx Addl Ln Sme Ord Sme Loc

This is a charge assessed on a service order for the installation of additional ISDN BRI Centrex Lines on the same order at the same location.

The pricing consists of the following:

- \$7.50 (1) Service Order Processing (2nd line) (SP-4)
- \$21.50 (1) Network Connection (SP-5)



# **REGULATORY FEES AND TAXES**

# ARC Access Recovery Charge

The Federal Communications Commission (FCC) via the Universal Service Fund (USF)/Intercarrier Compensation (ICC) Transformation Order established the Access Recovery Charge (ARC) for incumbent local exchange carriers to recover some the of the revenues lost through the FCC required reductions to access rates. The ARC charge will be generally applied in the same manner as the Subscriber Line Charge (SLC). The FCC ARC became effective 7/1/2012, and is subject to change per government regulations. ARC rates are updated annually.

The effective current rate, per line, as of **July 1, 2016**, is as follows:

•	Centrex Analog	<b>\$ 0.71</b>
•	Centrex Multiline	\$ 0.71
•	ISDN BRI Voice	\$ 0.36

# **ESS** Statewide Emergency Service Surcharge

This is to recover the costs associated with the provision of enhanced 911service throughout the state of Hawaii and is assessed by your city or your county to pay for local 911 emergency services. In many areas, the service includes the ability to get a street address for callers through the phone lines. The fee is generally either an amount per telephone access line or a percentage of revenues. The surcharge has been approved by the PUC of the State of Hawaii. The percentage of revenues is not used by Hawaiian Telcom. Hawaiian Telcom charges a fee per telephone access line.

The Statewide ESS was tariffed in 1994 at \$0.28 per access line per month. Since then the rate changed only once – in 1995, the surcharge decreased to \$0.27. In order to increase or decrease the Statewide ESS, Hawaiian Telcom needs to file a tariff application for approval with the State of Hawaii Public Utilities Commission and show that the rate change is warranted and prudent, given the Company's cost to provide the service. Calculations are done by the system via programming and tabling.

The current rate is \$0.27 per access line.

#### **FUSF** Federal Universal Service Fee

The Federal Universal Service Fee is a charge allowed by the Federal Communications Commission (FCC) to recover the mandatory contribution made by Hawaiian Telcom to maintain the FCC's Universal Service Fund. This fund is used to reimburse telecommunication companies for price discounts on some telecommunications services and



products for schools, libraries, rural health care providers, and low-income families. The fund also covers providing service in high-cost areas.

The FCC allows these charges to be passed on to customers. This fee can be adjusted every quarter. The FCC calculates the quarterly FUSF contribution factor and releases a Public Notice advising what the factor would be for the following quarter.

Contribution support mechanisms are determined using a quarterly contribution factor calculated by the FCC.

The effective current rate as of **January 1, 2017** is:

•	Centrex Lines – for the first 1-9 lines	<b>\$2.46</b> flat rate, each line
•	Centrex Lines – for lines 10 and above	<b>\$0.27</b> per line
•	ISDN BRI	<b>\$2.41</b> per line

#### **GET Hawaii General Excise Tax**

This is a state imposed gross receipts tax that applies to the receipts from both general business activities and telecommunications services in the state. The telecommunications portion may be charged separately as it is calculated from an effective rate, which recognizes the allocation of interstate long distance services. The effective rate is 4.166% for Hawaii, Maui and Kauai Counties.

Please note that effective January 1, 2007, there was an additional county surcharge for the County of Honolulu of 0.5%. The effective rate is 4.712% for Oahu only.

GET is applied to deregulated items, Interstate Subscriber Line Charge, Federal Universal Service Fee, Access Recovery Charge, and Telecommunications Relay Service Surcharge.

# HIS Hawaii Intrastate Surcharge

The Hawaii Intrastate Surcharge (HIS) is a charge on intrastate telecommunication services. The Hawaii Public Utilities Commission approved the latest rate of 11.23% on October 1997, PUC Tariff 20, Decision and Order No. 15345 in Docket No. 94-0298 and Docket No. 95-0194.

HIS is imposed on all regulated intrastate services except the following: Interisland toll services, public and convenience pay telephone services.

The HIS would not change unless there is another rate case hearing for Hawaiian Telcom and rates are approved by the PUC.



# **PSC** Public Service Company Tax

This tax is imposed by the Hawaii PUC on the gross receipts of a public utility company from the sale of regulated intrastate telecommunications services. The rate is 5.885% and is built into the access line rates.

PSC is applied to tariffed or regulated items.

#### **PUC** Public Utilities Commission Fee

The Public Utilities Commission Fee is a fee established to fund the telecommunications regulatory activities of the Hawaii Public Utilities Commission. The rate is 0.5%, but 0.25% is included in the Tariff Rate and 0.25% is listed as a separate line item. The rate is determined by the PUC and would only increase if the funding for the activities of the Commission was determined to be insufficient.

The PUC fee is imposed on all regulated intrastate services as listed: Centrex lines, Statewide 5-digit dialing and interisland toll free dialing, optional Centrex features, NARs, Centrex ACD, Call Center Manager MIS Links, ISDN BRI and service order, service activation and one time service provision pricing for regulated line services (for adds, moves, and changes).

# **SLC** Interstate Subscriber Line Charge

The FCC allows carriers to recover their costs for providing telecommunication services through the Subscriber Line Charge (SLC). The SLC monthly charge is included in Hawaiian Telcom's overall pricing proposal.

The amount of the Subscriber Line Charge is based on a complex computation method developed by the FCC. The SLC can change annually. The Federal Communications Commission (FCC) oversees the SLC and this is applied to the following regulated services: Centrex Analog and Multi-line; ISDN BRI; ISDN BRI Voice. The procedure to calculate is done by our systems automatically via tabling and mappings.

The SLC charges for the Hawaiian Telcom products are as follows:

•	Centrex Analog	\$ 8.08
•	Centrex Multiline	\$ 8.08
•	ISDN BRI Voice	<b>\$ 7.00</b>

# TRS Telecommunications Relay Service

The purpose of the Telecommunications Relay Service surcharge is to compensate Hawaiian Telcom for required payments into the State Telecommunications Relay Service (TRS) Fund which finances the provision of TRS throughout the state of Hawaii. TRS enables hearing-and speech-impaired individuals to communicate through the telephone network. This surcharge has been approved by the Hawaii PUC.



The surcharge is based on the TRS carrier contribution factor and TRS fund size which the State of Hawaii Public Utilities Commission evaluates every year. The carrier contribution factor has not changed since 2010.

The current rate is \$0.06 per access line.

#### FET Federal Excise Tax

The Internal Revenue Code imposes the Federal Excise Tax (FET) on most local and long distance telephone service. Payments of FET are remitted to the Internal Revenue Service.

Note that the base for this includes the other surcharges: Hawaii Intrastate Surcharge (HIS), Hawaii Telecommunication Relay Service (TRS), Statewide Emergency Service Surcharge (ESS), Interstate Subscriber Line Charge (SLC), Federal Universal Service Fund (FUSF), and PUC Fee.

Effective August 1, 2006, the FET no longer applies to long distance calls.

The State is exempt from the FET.



# TwelveSERIES



# Feature Phones

The new 12Series offers the best features and design for todays Multi-featured Caller ID telephones. Our 12Series offers 4 models that will satisfy your business needs and demands.





12Series family of phones ... from Basic to Full-featured, analog to 2-line telephones.



Features	1201	1211
	BASIC NON-CID	SINGLE LINE CID LINE POWERED
Flash (100/300/600 mSec)	•	
Hold with Indicator	•	•
PBX Hold (Programmable)		•
Redial	•	•
Enhanced Redial - Last 15 Numbers		•
Pause	•	•
Mute with Indicator	•	•
Three One-Touch Memory Locations	•	
Ten Two-Touch Memory Locations	•	
Tone/Pulse Switchable	•	
Ringer Volume Control	•	
Handset Volume Control (~10dB)	•	
Desk/Wall Mountable	•	•
90V Message Waiting	•	
2.5 mm Headset Jack		•
Speakerphone		•
Conference		
CallerID/Call Waiting – Memory for 50 calls		•
Wide Angle, Adjustable LCD		•
Voice Mail Indication (FSK/Stutter/90V/24V)		•
On Hook Pre-dial		•
Directory Button		•
(Save up to 99 Names & Numbers)		
5 One Touch/15 Two Touch Speed Dial		•
5 One Touch/5 Two Touch Speed Dial		
Programmable Flash Time (100/120/300/600 mSec)		•
Handset Receive Volume Control (8 Levels)		•
Programmable Ring Cadence (5 Pos.)		•
Programmable Ring Volume (4 levels/off)		•
Data Port	•	•
Headset Button, Release Button		•
7-10-11 Button		•
Contrast Button		•
Three Languages (Eng./French/Spanish)		•
Programmable Area Code		•
Programmable LDS Code		•
Programmable PBX Access Code		•
Programmable VIP Alert		•
Clock		•
Call Timer		•
7.5V DC Adaptor		







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# The Rock-Solid Feel of Proven Technology.

When performance matters, ISDN (Integrated Services Digital Network) provides the best sound quality, fastest call processing, and most reliable service of any network technology. The new Tone Commander 8000-series phones showcase years of industry experience and are the most reliable and full-featured products on the market. These 10- and 20-button telephones are expandable to 40 or 50 buttons with the addition of a 30-button expansion module. All styles are available in S/T or U line configurations and are packed with features that extend the capabilities of ISDN.

## New Models. New Innovation.

From the ergonomically designed handset to simplified labeling, these models show a thoughtful evolution from Tone Commander's industry-standard 6200 Series phones. The 8810 features a large-screen display that provides electronic key labels, enhanced call logging, and advanced call directory functions. Call information is displayed for all calls, all the time. Large navigation keys allow easy menu control. A dedicated headset port and control key simplify headset use. Integrated voice mail control with one-key interactive menus provide convenient access to sophisticated voice mail features. The 8610 and 8620 feature single-strip key labeling for easy installation. All models support any combination of optional TAPI computer control, analog port, and 30-button expansion modules.

#### SIMPLE INSTALLATION.

Automatic switch detection, Auto-SPID, and Parameter Downloading provide true Plug & Play operation. These telephones are quick to install because they automatically configure themselves to any ISDN service. 8810 electronic key labels are automatically configured with National ISDN parameter download or via simple setup menus. All models have adjustable base configurations to ensure optimum display viewing. The base is reversible to allow for wall mount installation. A free Windows-based configuration program is available to simplify planning and ordering of your ISDN service and can print labels if needed.



TI-5a TI-5b



TI-5c TI-5d



TI-5e

More Than Just Phones.

Tone Commander offers a complete family of ISDN and VoIP telephones, attendant consoles, NT1 network equipment, and E9-1-1 Call Locating equipment. We have been making products to meet the stringent requirements of the most demanding telephone companies. These products are designed and manufactured in the USA.

# 8610 / 8620 / 8810 Features

#### **Electronic Key Labels**

The 8810 large-screen display model shows button information provided from the network. Custom key labels are also supported. Caller ID information is simultaneously displayed for all active call appearance keys.

#### Plug & Play Installation

Automatic switch type detection, automated SPID entry, and National ISDN parameter downloading are supported. 8810 key labels are auto-configured from the network parameter download.

#### Works with All ISDN Versions

All versions of National and Custom ISDN are supported without firmware or hardware modifications. Compatible with Lucent 5ESS and GTD-5, Nortel DMS-100, SL and Option Series PBX, Siemens EWSD, Avaya Definity and Multivantage PBX. User operation is virtually the same on all network platforms.

#### Call Identification

The call display indicates call state, caller 1D information, and elapsed time during calls. The identity of any call can be previewed at any time (even while on another call) to identify a call before it is answered or retrieved from hold. The 8810 provides simultaneous call displays for all call appearances.

#### **Multi-function Keys**

Ten (8610/8810) or twenty (8620) keys with indicators can be assigned for call appearances, feature activation, or one-touch speed dialing. Feature keys can be remapped to match any network configuration. Local and remote status is clearly indicated on highly visible multicolor lighted keys.

#### **Direct Station Selection (DSS)**

Call appearance keys can be programmed to show busy line status on shared call appearances and provide one-key direct station selection for secretarial answering. No special network setup is required.

#### 30-Button Expansion Module

Optional 8030X Button Expansion Module adds 30 programmable multifunction keys to any model phone.

#### **Special Function Keys**

Dedicated keys for Conference, Transfer, Drop, Hold, Speakerphone, Mute, and Volume are provided for call control. Four dedicated menu keys and four option keys provide programming control. The 8810 offers additional navigation keys plus Headset and Voice Mail keys.

#### Call Log

A call history log maintains a list of the last 100 calls. Calls are sorted by answered, unanswered, and outbound. Content includes caller ID, called line ID, time, date, and duration of each call. Entry into the call log can be password protected.

#### **Call Preference Options**

You can specify whether a ringing or idle line appearance is automatically selected when the handset is taken off-hook or the speakerphone is activated. Off-hook call preference may be set to Ringing, Idle, or None.

#### **Flexible Ringing Options**

Any of eight distinctive ringing tones can be assigned to each call appearance. Distinctive ringing cadences based upon network alerting patterns are supported. Off hook, second line ringing is muted, with selectable continuous or single burst ringing.

#### U or S/T Interface

U interface models have a built-in ISDN Network Termination (NT1) and provide a powered S/T output to connect to other ISDN equipment. S/T interface models connect to an external NT1. such as the Tone Commander NT1U-220TC or NT1B-300TC, for multipoint applications.

#### **Ringing Control for Shared Lines**

Shared call appearances can be individually programmed on the phone for normal ringing, delayed ringing, or no ringing for workgroup environments. No special network setup is required for this feature.

#### **Call Directory**

A 100-entry speed dialing directory with full-screen display is provided on the 8810. The 8610 and 8620 have a 36-entry softkey-based directory.

#### **Speed Dial**

Unassigned multifunction keys can be programmed with autodial numbers, feature activators, and "smart" pauses for one-key access to frequently dialed numbers, voice mail, directed call pickup, and call forwarding.

#### **Voice Announce**

Hands-free automatic answering with screening features to restrict which incoming call is automatically answered.

#### **Integrated Speakerphone**

All models include a built-in speakerphone with volume controls and a microphone Mute key. The speakerphone allows two-way hands-free conversation and on-hook dialing.

#### **Headset Operation**

A dedicated headset port with Headset control key is provided on the 8810. Audio characteristics can be customized to match any headset. On the 8610/8620, when a headset is used, hook switch operation is disabled.

#### **Message Waiting Indication**

A dedicated, easy-to-see message waiting lamp lights when you have new voice mail messages.

#### **Desktop or Wall Mounting**

A reversible base allows easy wall mounting without an adapter kit. For desktop applications, the base can be attached in two positions for optimal viewing.

#### **Support for Computer Telephony Applications**

Optional 8001TA and 8003TA RS232 Terminal Adapters provide remote control of the phone for Caller ID screen pops and phone dialing from Windows TAP1-compliant applications. A free add-on application provides PC screen pops, contact dialing, and call logging for Microsoft Outlook.

#### **Analog Port**

Optional 8002TA and 8003TA Terminal Adapters provide an analog port for traditional POTS equipment, such as fax machines and cordless telephones. Operation is fully integrated with the ISDN telephone.

#### **Advanced Troubleshooting Capabilities**

Built-in Q.931 network protocol logging and analysis provide sophisticated tools to pinpoint network problems.

#### Local Inspect

Call appearances, network feature keys, and directory numbers can be inspected to verify the phone configuration after a network parameter download or user setup.

#### Easy Firmware Updates

Software can be easily updated to the latest version with a plug-in loader module available from Tone Commander.

#### **Windows-based Configuration Program**

An intuitive interface simplifies labeling and Speed Dial/Call Directory entry, with user configuration backup to your PC disk.

# **Tone Commander 8030X Expansion Module**

(Sample picture is shown with 8620 Phone)

This option adds 30 multifunction keys to the ISDN Phone 8610 or 8620.

The additional multifunction keys can be set up as Call Appearance keys, speed dial keys, Direct Station Select keys, or Feature Activator keys. All multifunction keys have both red and green lamp indicators for easy status viewing. This module is ideal for answering positions and high-density key applications.

Only one 8030X per telephone is supported.

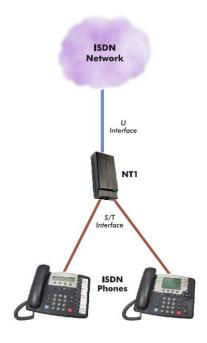


# Tone Commander Desktop or Rack Mount NT1: <u>ISDN NT1B-300TC</u>

The NT1B-300TC is a compact ISDN Network Termination suitable for standalone or rack configurations. Terminal equipment (typically ISDN telephones) can be powered through the NT1.

Power is provided by an in-line desktop power supply or by the rack. Both point-to-point and multipoint ISDN terminal equipment configurations are supported. This unit may be used as a drop-in replacement in Lucent NT1B-300 applications, and is compatible with the Teo NT1B-300 Rack, Lucent NT1B-310 Rack, and SEI PoweRack PR300e.





**Typical Application** 

# Tone Commander Desktop Power Supply: <a href="https://example.com/PWR1 Desktop Power Supply">PWR1 Desktop Power Supply</a>

The PWR1 Desktop Power Supply connects to the NT1's barrel connector.

