NØRTEL NORSTAR

Norstar Modular and Compact ICS 4.1 Installer Guide Addendum

This addendum provides updated information for the newest Norstar Modular and Compact ICS 4.1 system. For a complete description of the Norstar system functionality, installation and programming refer to the appropriate Installer Guide, System Coordinator Guide and Programming Records that come with your system. For Companion customers the Norstar Companion Programming Record is now in the Companion documentation kit with the Installer Guide and System Coordinator Guide.

New features (page 2)

This section includes information for Modular and Compact ICS 4.1. The new and enhanced features that are common to all products, include:

- Call forwarding (external)

- Hospitality Services feature (for International users)

- Outgoing Name and Number blocking (ONN)

- ISDN S-loop call origination using OLI digits (Profiles 1 and 4)

New features for North America Modular ICS 4.1 (page 8)

North America Modular ICS 4.1 introduces enhanced capabilities for a wider range of combined voice and data networking solutions. There are also changes to note in the Hardware and Maintenance sections of the *Modular ICS 4.0 Installer Guide*.

New features for Compact ICS 4.1 (page 14)

North America and International Compact ICS 4.1 has a new Fax switch detection feature available.

New features for International Modular and Compact ICS 4.1 (page 18)

There are four Market Profiles with parameters that correspond to different protocol requirements for international customers.

New Features

Modular and Compact ICS 4.1 have four new or enhanced features.

- Users now have the option to forward their incoming calls to an external destination.

- Hospitality Services feature adds functionality for hotel type facilities.

- Outgoing Name and Number blocking allows you to choose the method to alert the CO to block calls

- ISDN S-loop call origination using OLI digits is specific to ISDN devices

Call forwarding (external)

Users can forward all calls to internal and external destinations using ⌑Feature⌑ ⌑4⌑ . You can also Forward on Busy or Forward no Answer to an external destination.

To check settings that control how the system works with each telephone and the calls they receive, refer to the Capabilities section of the *Norstar Modular or Compact ICS 4.0 Installer Guide*.

- For Call Forward all Calls the display shows `Forward to:`. Enter the destination code and dialing digits.

- For Call Forward on Busy and Call Forward no Answer the display shows `Fwd to:`. Enter the destination code and dialing digits.

  Note: The destination code and dialing digits cannot exceed 24 digits. The set must have access to a pool and be programmed to `Allow Redirect: Y` under `Terminals&Sets/Capabilities` to allow external destination programming (⌑Feature⌑ ⌑4⌑).

Hospitality Services feature

Hospitality Services (HS) is a group of features that increases the value of the Norstar ICS in small to medium sized hotels, motels or hospitals.

  Note: Although the Hospitality Services feature is available for all profiles (see Market profiles on page 18) it is primarily for International users.

In a hotel setting, guests gain improved services through immediate access to basic functions like:

- wake-up service or reminders

- accurate tracking of the room's service requirements.

Norstar telephones are classified as one of three types of sets: a common set, a room set or a Hospitality Services (HS) admin set.

Common set

A common set can be a telephone found in a lobby, office, or common area, it is not associated with a room. A common set does not have access to the all of HS features.

Common sets are Norstar telephones or analog telephones connected to an analog terminal adapter (ATA), or an analog station module (ASM).

Room set

A Room set is a set assigned to a room in System programming. Up to five sets can be assigned to the same room (they all share same room number).

Room sets can be any Norstar telephone or an analog telephone connected to an ATA or an ASM.

Hospitality Services (HS) admin set

A Hospitality Services (HS) admin set is any two-line display Norstar telephone. A Hospitality Services (HS) admin set can be programmed to require a user to enter the Desk admin password before access to HS admin features is granted.

Alarm time (AL) feature

The Alarm time feature provides an alarm clock capability on Norstar and analog telephones connected to an ATA or an ASM. Both room sets and common sets can be programmed to sound an audible alert at a requested time.

One Alarm time within a 24 hour period is programmable on a room or common set and must be reset daily. When the alarm sounds, all sets in a given room alert. Canceling the alarm on any set cancels the alarm on all the sets in the room. A new Alarm time entered on a room or common set overwrites any alarm set previously.

If the Norstar system experiences a power failure, the failure can result in missed Alarm times. When the Norstar system is running and the system's time resets, the missed Alarm times alert in respective room or common sets. At all times, the Norstar system allows up to a maximum of 25 sets that can alert at the same time.

For more information about programming this feature refer to the *Modular and Compact ICS 4.1 System Coordinator Guide Addendum*.

Hospitality programming
Room desk information

The Room/desk info heading of programming under Hospitality in System progrming allows for the installer to assign sets to a room. To program a Norstar telephone or an analog set:

1. Begin with System Prgrming.

2. Press [Show]. The display shows Hunt groups.

3. Press [Next] until the display shows Hospitality.

4. Press [Show]. The display shows Room/desk info.

5. Press [Show]. The display shows Show set:_.

6. Enter a room set number or press the FIND or LIST display keys to find the room sets defined in the system.

7. The display shows nnn:r:s. The display indicates the set number, the room number the set is assigned to and the number of sets in that selected room.

8. Press [Show]. The display shows Room #:None. To change the room number of the room set, press the CHANGE display key. The default setting is **None**.

9. Press `Next`. The display shows `Adm pwd req'd:Y`. Determine if the set requires the use of the Desk admin password to access Hospitality features. Press the <u>**CHANGE**</u> display key to select Y or N. The default is **Y**.

10. If no more sets require programming, press the `Rls` button to exit programming.

Call restrictions

The `Call restrns` heading of programming under `Hospitality` in `System prgrming` allows for the installer to assign dialing filters to room occupancy states. Call restrictions is an integral part of the Room occupancy (RO) feature.

For example, you can set the following call restrictions for each Room occupancy state:

- Vacant: Filter 11, no calls allowed except 911.

- Basic: Filter 11, no calls allowed except 911 and internal extensions.

- Mid: Filter 12, no calls allowed except 911, 1800, 188 and internal extensions.

- Full: Filter 13, no restriction on calls

The default dialing filter for all Room occupancy states (Vacant, Basic, Mid, and Full) is **00**. The filters are the standard Norstar dialing filters and range from 00 to 99.

To assign dialing filters:

1. Begin with `System prgrming`.

2. Press `Show`. The display shows `Hunt groups`.

3. Press `Next` until the display shows `Hospitality`.

4. Press `Show`. The display shows `Room/desk info`.

5. Press `Next`. The display shows `Call restrns`.

6. Press `Show`. The display shows `Vacant:00`.

7. Press the <u>**CHANGE**</u> display key. The display shows `Use flt:`.

8. Enter the dialing filter (00 to 99). The display shows `Vacant:nn`.

9. Press `Next`. The display shows `Basic:00`. Press `Next` to configure Mid and Full Room occupancy states.

10. If no more dialing filters require programming, press the `Rls` button to exit programming.

Service time

The `Service time` heading of programming under `Hospitality` in `System prgrming` allows for the installer or system coordinator to program the time when occupied rooms change state from Service done to Service required. The `Service time` heading is an integral part of the Room condition (RC) feature.

1. Begin with `System prgrming`.

2. Press `Show`. The display shows `Hunt groups`.

3. Press `Next` until the display shows `Hospitality`.

4. Press ⌈Show⌉. The display shows Room/desk info.

5. Press ⌈Next⌉ until the display shows Service time.

6. Press ⌈Show⌉. The display shows Hour: 00.

7. Press the CHANGE display key. Enter the hour (00 to 23). If the number is less than 13, the display shows AM. Press CHANGE to select PM. Press OK to accept.

8. Press ⌈Next⌉. The display shows Minutes: 00.

9. Press the CHANGE display key. Enter the minutes (00 to 59).

10. Press the ⌈Rls⌉ button to exit programming.

Alarm

The Alarm heading of programming under Hospitality in System prgrming is an integral part of the Alarm time feature. Under the Alarm heading the installer programs the following settings:

- **Attention attempts** — Number of times the Alarm time feature attempts to get the attention of the occupant before canceling.

- **Retry intervals** — The interval period in minutes, between each Alarm attempt.

- **Attention duration** — The period programmed in seconds for which a set alerts or each alarm attempt.

1. Begin with System prgrming.

2. Press ⌈Show⌉. The display shows Hunt groups.

3. Press ⌈Next⌉ until the display shows Hospitality.

4. Press ⌈Show⌉. The display shows Room/desk info.

5. Press ⌈Next⌉ until the display shows Alarm.

6. Press ⌈Show⌉. The display shows Attn attempts:3.

7. Press the CHANGE display key to select 1, 2, **3**, 4, or 5. The default is **3**.

8. Press ⌈Next⌉. The display shows Retry intrvl:4.

9. Press the CHANGE display key to select 2, **4**, 6, or 8 minutes. The default is **4**.

10. Press ⌈Next⌉. The display shows Attn duration:15.

11. Press the CHANGE display key to select 10, **15**, 20, 30, 40 or 50 seconds. The default is **15**.

12. Press ⌈Next⌉. The display shows Time format: 12hr.

13. Press the CHANGE display key to select **12hr** or 24 hr. The default is 12 hour format.

14. Press the ⌈Rls⌉ button to exit programming.

Add the following information to the Telco Features section of the *Modular ICS 4.0 Installer Guide*.

Outgoing Name and Number blocking

When activated, ⌞Feature⌟ ⌞8⌟ ⌞1⌟ ⌞9⌟ blocks the outgoing name and number on a per call basis. When this feature is used, the CO is alerted to block the calling party's name and number to the person being called.

The CO is alerted by two methods, the Vertical Service Code (VSC) or suppression bit method and each depends on the type of trunk involved in placing the outgoing call. Analog trunks use a dialing digit sequence called VSC. Most COs use the suppression bit method for ONN. You will need to use the VSC ONN if your CO does not support the suppression bit method. The VSC differs from region to region and must be programmed. Analog trunks with both tone and pulse dialing trunks can have separate VSCs. BRI trunks support one VSC. PRI trunks do not utilize the VSC.

To cancel ONN blocking press ⌞Feature⌟ ⌞#⌟ ⌞8⌟ ⌞1⌟ ⌞9⌟

Programming the Analog Vertical Service Code (VSC)

To program an ONN blocking Vertical Service Code, start with the display showing `Telco Features`.

1. Press ⌞Show⌟. The display shows `VMsg ctr tel#s`.

2. Press ⌞Next⌟ the display shows `ONN blocking`.

3. Press ⌞Show⌟. The display shows `Analog VSC`.

4. Press ⌞Show⌟. The display shows `Tone:None`.

5. Press `CHANGE` to enter a new tone dialing Name and Number blocking VSC. The VSC for tone trunks can include a maximum of 10 digits consisting of the CO Pause (F78), digits 0-9, *, and #.

6. Press ⌞Next⌟. The display shows `Pulse:None`.

7. Press `CHANGE` to enter a new pulse dialing Name and Number blocking VSC. The VSC for pulse trunks can include a maximum of 10 digits consisting of the digits 0-9. Pulse trunks do not support F78, * or #. The * is represented by 11 (two consecutive 1s).

8. Press the ⌞Rls⌟ button to exit programming.

Programming the BRI VSC

1. Press ⌞Show⌟. The display shows `VMsg ctr tel#s`.

2. Press ⌞Next⌟ the display shows `ONN blocking`.

3. Press ⌞Show⌟. The display shows `Analog VSC`.

4. Press ⌞Next⌟ until the display shows `BRI VSC ...`.

5. Press ⌞Show⌟. The display shows `Code:None`.

6. Press `CHANGE` to enter a new BRI Name and Number blocking VSC. The VSC for BRI trunks can include a maximum of 10 digits consisting of the CO Pause (F78), digits 0-9, *, and #.

7. Press the ⌞Rls⌟ button to exit programming.

The second method used to alert the CO is by a suppression bit packaged within the call's setup message. BRI trunks can use either method.

Note: PRI trunks only support the suppression bit method of signalling the CO to block the outgoing Name and Number to the calling party, therefore no additional programming is required.

You must indicate which method the BRI trunk will use in Loop programming. The setting supports two states, either SrvcCode or SuprsBit. If SrvcCode is programmed then the VSC programmed under Telco Features is used. If SuprsBit is programmed then the suppression bit will be packaged in the call's setup message. You must program the BRI loop state to match the method supported by the CO.

Programming the BRI Loop state setting

To program the ONN blocking BRI Loop state, start with the main heading Hardware.

1. Press Show. The display shows Enter module #.

2. Enter the module number of the BRI card. For example, if the first card on core is programmed as a BRI-ST then the display will show Cd1-KSU:BRI-ST.

3. Press Show. The display shows Card type:BRI-ST.

4. Press Next. The display shows Loops: 201-204.

5. Press Next. The display shows Loops: 201.

6. Press Show. The display shows Type:T....

7. Press Next until the display shows ONNblk:SuprsBit.

8. Press CHANGE to toggle the BRI loop state setting from SuprsBit to SrvcCode.

9. Repeat steps 5-8 to program ONN blocking BRI loop state for other loops (as required).

10. Press the Rls button to exit programming.

Note: If BRI Loop state is programmed to be SrvcCode a proper Vertical Service Code must be programmed. See the procedure, Programming the Vertical Service Code (VSC) on the previous page.

ISDN S-loop call origination using OLI digits (Profiles 1 and 4)

Some ISDN devices (for example, video conference units) may require the network Called Number digits in order to accept a call. The OLI as calld # parameter permits the OLI digits to replace the ISDN device's internal DN digits during call setup. To enable this capability, set the OLI as calld # parameter to Y for all DNs used by the device.

1. At Terminals&Sets. Press SHOW and enter the ISDN set number. The display shows 221:221.

2. Press SHOW the display shows Line access.

3. Press SHOW the display shows Line Assignment.

4. Press NEXT until the display shows OLI as calld #: N. Press CHANGE to select Y to allow for OLI substitution.

5. Press the Rls button to exit programming.

New features for North America Modular ICS 4.1

The new features for North America Modular ICS 4.1 include:

- support for the Norstar Synchronous Data Interface (SDI), which allows existing digital terminal equipment (DTE) access to the T1 network connection of an ICS.

- support for switched access with dial-up digital network access using ISDN (both BRI and PRI) for future data modules (including BayStack). Additional details of this and other new product releases are available from your Norstar distributor.

For information about the pre-existing data capabilities of Norstar Modular ICS, see the *Modular ICS 4.0 Installer Guide* and the *Norstar Integrated Data Module 200 Installer Guide*.

For SDI installation instructions, see the *Norstar Synchronous Data Interface Installer Guide.*

Programming settings

The ICS programming settings used to configure data modules, IDM 200, SDI or BayStack, are under the Hardware heading. The default options show in **bold** type.

For complete ICS programming information, see the *Norstar Modular ICS 4.0 Installer Guide*.

To see the data module settings:

1. On a Norstar telephone with a two-line display, press `Feature` `✳` `✳` `2` `6` `6` `3` `4` `4` , which is the same as `Feature` `✳` `✳` `C` `O` `N` `F` `I` `G` . The display shows `Password:`.

2. Enter the Installer password. The default password is CONFIG (266344).The display shows `Terminals&Sets▶`. Three triangular indicators appear on the vertical display between the rows of buttons.

3. Place the programming overlay over the buttons indicated by the triangles. You can get a programming overlay from the *Norstar Modular ICS Installer Guide* or *Norstar Modular ICS System Coordinator Guide.*

4. Press `Next` until the display shows `Hardware▶`.

5. Press `Show` .

6. Enter the expansion module number of the data module and press `Show` .

   You can press `Next` to scroll through the available modules.

7. Press `Show` . The module number and type of data module appears.

When there is no expansion module attached to the expansion port, you can change the type of data module.

1. Press `CHANGE` to select the type of data module: IDM 200, SDI or BayStack. `Clear line data?` prompt appears.

2. Press `YES` to continue with the change. The system changes the Type setting and clears all the line assignment settings for the data module on the expansion port.

Press **NO** to cancel the change.

BayStack Programming settings

Add this information under the heading DataMod in the Hardware section of the Norstar Modular ICS 4.0 Installer Guide (page 365).

If the Type setting is BayStack data module, the following settings appear:

IP address

The display shows the IP Address of the BayStack data module attached to the expansion module.

Fixed access

To assign one or more Fixed lines to the BayStack data module:

1. At `Show intrface:`, enter the number of the interface to which you need to assign lines. Press `Show`.

2. At `Show line:`, enter the number of the Fixed line you need to assign to the interface.

3. Press **CHNGE** to select the option for the line: **Unassigned** or Assigned.
   (`Linexxx: **DM` displays if the line is assigned to another data module).

4. At `Linexxx:Assigned`, press `Show`. The display shows `Linexxx: Channel yy` (xxx is the line number and yy is the channel number).

5. Record each channel and line combination in the interface in the *Programming Record*. Each channel used by the BayStack data module maps to a line.

6. Repeat these steps for each interface.

> **Tip -** *To use BayStack with T1 lines you must enter the Bandwidth Allocation License software keys to change the Trunk type option for T1 lines to Fixed.*
>
> *See the* Norstar Modular ICS 4.0 Installer Guide *and the* Bandwidth Allocation License for instructions.

For more information about BayStack data module programming, channel mapping and restrictions, see the appropriate data module *Installer Guide,* and the data module *Programming Record*.

Switched access

You can assign ISDN lines to the BayStack data module to provide:

• normal data network access for the data module

• dial-up backup and overflow bandwidth (additional channels or trunks) as needed

At `Switched access▶`, press `Show` to see the line assignment and line pool access settings.

Line assignment

To assign one or more lines to the BayStack data module for incoming data transmission:

1. At `Line assignment`, press `Show`.

2. Enter the number of the BRI trunk or a target line you need to assign to the BayStack data module. The status of the line appears as assigned to the current data module, unassigned, or assigned to another data module.

   You can assign a BRI trunk directly to the BayStack data module. For BRI and autoanswer BRI trunks you can assign a target line.

3. Press `CHNGE` to select an option: **Unassigned** or Assigned.

   If the line is assigned to another data module, you can re-assign it to the current data module.

4. Assign additional lines to the BayStack data module as required.

Line pool access

To give the BayStack data module access to a line pool for outgoing data transmission:

1. At `LinePool access`, press `Show`. The setting for access to Line Pool PRI-A appears.

2. Press `CHANGE` to select the access to the line pool: Yes (Y) or No (**N**).

3. Press `Next` to see the next line pool in the list. The sequence of the list is PRI-A, PRI-B, then line pools A through O.

4. Repeat steps 1 to 3 until the data module has the required access to line pools.

You must program line pool access when you select the switched access settings for the BayStack data module. To use a pool made up of BRI trunks, program the BayStack data module to use a line pool access code or a destination code. To use PRI line pools, program the BayStack data module to use a destination code.

For more information about programming switched access, see the data module *Installer Guide*.

For more information about destination codes, see the *Norstar Modular ICS 4.0 Installer Guide*.

SDI Programming settings

For a complete description of the SDI capabilities, programming, testing and troubleshooting refer to the *SDI Installation Guide*.

Add this new information under the DataMod heading in the Hardware section of the Norstar Modular ICS 4.0 Installer Guide (page 365).

If the Type setting for the data module is SDI, the following Config settings appear.

Ptl

You can configure the SDI to use different cables to support a range of interface standards through its data interface port. The SDI supports the interfaces by using adaptive cables.

Press CHANGE to select the option: **V.35**, RS232, RS449, EIA530, EIA530A.

Note: RS232 is not recommended for data rates above 64 kbits/s.

DS0 rate

Select the transmission rate of the channels (Fixed lines) assigned to the SDI.

Press CHANGE to select an option: **64k** or 56k.

TxClk src

Data that travels through the SDI synchronizes using timing (clocking) from either the SDI or the DTE.

Press CHANGE to select an option: **Auto**, DTE or DCE.

- DTE: The TXClk clock provided by the DTE is used by the SDI to clock data.
- DCE: The internal TxSync clock is used to clock data.

- Auto: The SDI checks if the clock provided by the DTE is valid. If the clock is valid, the SDI uses DTE clocking. If the DTE clocking is not valid, the SDI uses its own internal clock (DCE).

For all options the DTE must synchronize to the SDI.

TxClk invrsn

You can invert the signal used by the SDI internal clock (DCE) to synchronize data from the DTE. The inversion adjusts for round trip delays between the SDI and DTE.

Press CHANGE to select an option: **Off** or On.

Data invrsn

When Data Inversion is on, the SDI inverts data before routing it to the T1 connection and DTE. Inversion allows the SDI to use the properties of protocols such as HDLC/SDLC (a transmission standard for data).

Press CHANGE to select an option: **Off** or On.

This feature must be available and activated at the far end.

Fixed access

To assign Fixed lines to the SDI:

1. At Fixed access▶, press Show .

2. Enter the line number for a Fixed line. The status of the line appears as assigned to the current data module, unassigned, or assigned to another data module.

3. Press CHNGE to select an option: **Unassigned** or Assigned.

   If the line is assigned to another data module, you can press CHNGE re-assign it to the current data module.

4. Repeat steps 2 and 3 to assign a number of lines to the SDI. You can assign up to 24 lines.

> **Tip -** *To use the SDI with T1 lines you must enter the Bandwidth Allocation License software keys to change the Trunk type option for T1 lines to Fixed.*
>
> *See the* Norstar Modular ICS 4.0 Installer Guide *and the* Bandwidth Allocation License for instructions.

Lp state

The display shows the loopback state of the SDI.

- None: No loopback from the SDI is active.

- man DTE: The SDI takes the data received from the DTE and loops it back towards the DTE.

- man DS30: The SDI takes the data received from the fiber optic connection to the ICS and loops it back towards the ICS.

- auto DTE: The SDI enters the DTE loopback state when requested by the DTE. Auto DTE should only be set when supported by the DTE.

To change the loopback configuration of the SDI:

1. Press Show .

2. Press CHANGE to select an option: **OFF**, man DTE, man DS30, auto DTE.

Hardware

In the Internal CSU section on page 348 of the *Norstar Modular ICS 4.0 Installer Guide*, **remove** the following sentence in the Tips.

If you set the internal CSU off, there must be an external CSU connected to your T1 lines.

Add the new information:

If you use an external CSU with your T1 lines, then set the internal CSU to off.

In the Internal CSU section on page 348, **remove** the following sentence in the Tips.

The internal CSU must be set to off if a Norstar Integrated Data Module is active.

Maintenance

Event Messages

In the Event Messages section of the Maintenance chapter, on page 400 of the *Modular ICS 4.0 Installer Guide*, note the following change.

Evt:697   S2   An asynchronous data report generated by the SDI.

Tests

In the Tests section of the Maintenance chapter, on page 414 of the *Modular ICS 4.0 Installer Guide*, replace the text under the following headings.

Tests from the Norstar ICS

You can start and stop Loopback tests in Maintenance programming under the heading `Loop back tests`. You can also push a button on the DTI faceplate to start and stop the continuity test.

You can run DTE and DS30 Loopback tests to verify the SDI data transfer capabilities. Under the Hardware heading ensure that the Type setting for data module is SDI before choosing the Loopback test you will run.

Starting a line, payload or card edge loopback test

In the Tests section of the Maintenance chapter, on page 414 of the *Modular ICS 4.0 Installer Guide*, change the Starting a line, payload or card edge loopback test procedure step number six.

6. Press `Next` until the display shows the test you must run. Options are Continuity loopback, Line loopback, Payload loopback or Card Edge loopbk.

New features for Compact ICS 4.1

The Fax switch feature (available on Compact systems only) monitors incoming Auto Attendant lines and automatically transfers calls to a fax machine when it hears fax tones. The Fax switch contains all of the required Fax tone detection and transfer abilities within the Norstar system. The figure below represents a Norstar system with both a Fax machine and a computing device.
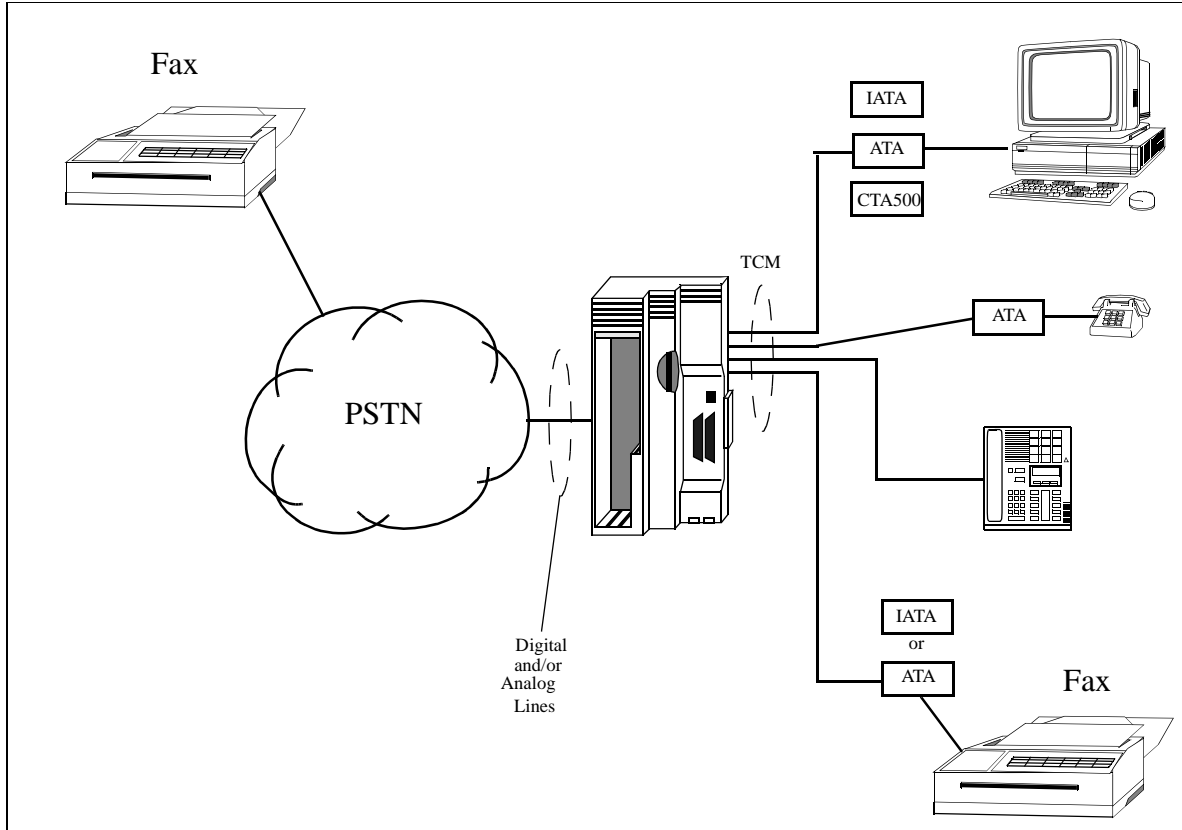
Example of a Norstar system with both a Fax machine and a computing device.

External devices between the PSTN and the Norstar system are not necessary to monitor analog and digital lines for Fax tones. If the Fax switch is configured, the Auto-attendant answers a call, the Fax switch feature turns on and monitors for fax calling tones.

The Fax switch feature allows for:

• easy connection of a fax device to the Norstar system, through the IATA port or through an ATA connected to any TCM port.

  Note: To prevent a Fax device from answering a line before the Auto-attendant answers, do not define the Appear and Ring or Ring settings for the ATA.

• configuration of a system with just one incoming line, answered by an Auto-attendant, used for voice, data, and Fax services.

• Norstar systems with a mix of analog and digital incoming lines. All of these line types, if answered by an Auto-attendant, can handle voice, data, and Fax services.

- configuration of a Hunt group that contains a collection of Fax devices. All Fax devices collected under one directory number (DN).

   Note: Hunt group mode must be to either Cyclical or Sequential. The use of Broadcast mode is not recommended.

Fax detection

The Fax switch feature requires a Fax tone detector to listen to incoming lines. The Fax switch feature automatically transfers a call to a Fax machine when it hears Fax tones.

The Fax tone detector listens for the standard fax calling tone*. Fax machines emit fax calling tones to connect with another Fax machine or a device capable of handling Fax calls. The Fax tone detector listens for 0.5 seconds of the Fax frequency tone. Three seconds of silence (the absence of tone), followed by the detection of the Fax frequency tone again. The Fax detector requires up to seven seconds to determine if a call is a Fax call or not.

If the Fax tone detector detects a Fax call, the call is transferred to a Fax directory number (DN) in the Norstar system.

The Fax tone detector ceases to monitor for fax tones during a call when:

- there is no Fax call detection within the first seven seconds of a call, or
- a caller enters a Direct Inward Access (DIA) number

The Fax tone detector can have one Fax DN programmed. If there is no Fax DN in the system, the Fax tone detector does not activate.

   Note: Do not use a Fax tone detector when a fast modem is in use.

(* Fax calling tones (CNG) as described in ITU-T T.30. The system will detect these Fax calling tones down to a level of -32 dBM.)

Auto-attendant interactions with the Fax switch

To enable the Fax switch feature and the Auto-attendant to manually answer lines after a predefined number of rings, define a Fax DN and turn the Fax switch On for either Auto-attendant feature (System Answer (SA) or Custom Call Routing (CCR)).

When the Fax switch is enabled in a Compact system:

- the first Auto-attendant answered call provides a playback channel, DTMF and Fax tone monitoring capabilities
- a second Auto-attendant answered call (while the first one continues) provides only a playback channel and DTMF monitoring capabilities.

When the Auto-attendant answers two calls, the system does not provide Fax tone detection to the second call. The Auto-attendant cannot answer a third call while the Auto-attendant is supporting the first two answered calls. When the first call no longer requires Auto-attendant support, the Auto-attendant provides Fax tone detection to the second call. The Auto-attendant can answer a third call providing playback channel and DTMF monitoring capabilities.

When the Fax switch is enabled, the tone detector limit of three prevents the Auto-attendant from servicing three calls at once. The Auto-attendant can answer three lines when the Fax switch is Off.

The Auto-attendant has the necessary transfer capabilities required by the Fax switch. With an incoming Fax call, the call is transferred to the appropriate DN for the Fax machine.

The Fax switch monitors any line type answered by an Auto-attendant. The functionalities a caller hears when the Auto-attendant answers, remain the same when the Fax switch is on. If a call is not a Fax call, the system provides call handling (Auto-attendant) to the caller.

The length of time before a user enters the first digit must be at least seven seconds in length. The length of time includes the period of the Auto-attendant greeting and the time waiting, after the greeting finishes. Seven seconds is the maximum amount of time required by the Fax switch to determine if a Fax machine is calling. If a user starts to enter digits (for example, DIA) the Fax tone detector ceases and the call is transferred.

Programming the Fax switch

To enable the Fax switch feature, define a Fax DN and turn the Fax switch On for either Auto-attendant feature (System Answer (SA) or Custom Call Routing (CCR)).

Programming the Fax DN

The Fax switch allows one defined Fax DN on the system. The user defines the Fax DN in the System Programming section.

1. Begin with `System Prgrming`.

2. Press `Show`. The display reads `Hunt groups`.

3. Press `Next` until the displays reads `Fax DN:None`.

4. Press the `CHANGE` display key. Enter the DN you need the Fax switch feature to identify. The default is **None**.

The Fax switch identifies one DN and does not support the unique definition of a number of Fax devices. Through the use of the defined DN, a programmable option exists to create a collection of Fax devices. To support a collection of Fax devices

- use the Forward on Busy setting on a set.

- use the Hunt group functionality to collect all Fax devices under one DN.

Programming the Fax switch in Auto-attendant

The Fax switch default for both the CCR and SA features is Off.

System Answer

1. Begin with `System Prgrming`.
2. Press `Show`. The display reads `Hunt groups`.
3. Press `Next` until the display reads `Auto Attendant`.
4. Press `Show`. The display reads `Auto Attendant:Off`.
5. Press `Next` until the display reads `System Answer`.
6. Press `Show`. The display reads `After: 3 rings`.
7. Press `Next`. The display reads `Fax Switch:Off`.
8. Press the CHANGE display key. Select On or Off. The default is **Off**.

CCR

1. Begin with `System Prgrming`.
2. Press `Show`. The display reads `Hunt groups`.
3. Press `Next` until the display reads `Auto Attendant`.
4. Press `Show`. The display reads `Auto Attendant:Off`.
5. Press `Next` until the display reads `CCR`.
6. Press `Show`. The display reads `After: 3 rings`.
7. Press `Next` until the display reads `Fax Switch:Off`.
8. Press the CHANGE display key. Select On or Off. The default is **Off**.

Because Custom Call Routing allows for more flexibility in automatically answering and transferring calls, CCR is best for the Fax detection setting. Custom Call Routing, different from System Answer, helps businesses that have no dedicated attendant answering calls.

New features for International Modular and Compact ICS 4.1

Add the following section before "Performing Startup" in the *Norstar Modular ICS 4.0 Installer Guide*.

Market Profiles

There are three Market Profiles that you can select when you install a Modular or Compact ICS 4.1 system outside of North America. Each Market Profile has set system parameters that go with different country protocols. You must select a Market Profile (**Profile) before you do **Startup, in the first 15 minutes after the Norstar system is powered up. The Market Profile default (Profile 1) is for Modular or Compact ICS 4.1 systems installed in North America.

Selecting a Market Profile

To change the Market Profile:

> **Tips -** *To choose Market Profiles 2, 3 and 4 you must perform **Profile within 15 minutes of powering up the Norstar system and before **Startup. Your Startup setting will be lost if you perform **Profile after **Startup.*

1. Press ⌈Feature⌋ ⌈*⌋ ⌈*⌋ ⌈P⌋ ⌈R⌋ ⌈O⌋ ⌈F⌋ ⌈I⌋ ⌈L⌋ ⌈E⌋ (**7763453) from a Norstar M7310 or M7324 telephone.

2. Press **CHANGE** to select the market profile: **PROF 1**, PROF 2, PROF 3, PROF 4.

3. Press the ⌈Rls⌋ key to exit.

> **Note:** This procedure is only for Modular or Compact ICS 4.1 systems installed outside of North America. Do not change the Market Profile if you are installing a Modular or Compact ICS 4.1 system in North America. If you do **Profile after **Startup you will lose your **Startup setting.

Dial Pad layout

In all of the four profiles you can choose to have a CCITT or non-CCITT dial pad layout. In a CCITT dial pad layout you press key ⌈7⌋ for the letter Q and key ⌈9⌋ for the letter Z. In a non-CCITT dial pad layout you press key ⌈0⌋ for the letters Q and Z. The default dial pad layout for all Market Profiles is non-CCITT.

To choose the dial pad layout:

1. Press ⌈Feature⌋ ⌈*⌋ ⌈*⌋ ⌈D⌋ ⌈I⌋ ⌈A⌋ ⌈L⌋ ⌈P⌋ ⌈A⌋ ⌈D⌋ (**3425723)

2. Press **CHANGE** to select: **Q,Z:0** or Q, Z:7, 9

3. Press the ⌈Rls⌋ key to exit.

Market Profile parameters

Each Market Profile supports a different selection of Trunk cards on and off core. Depending on the country, you may require NI or ETSI ISDN. Analog to digital expansion and compression rates (also called companding law) can be either a-law or mu-law. Refer to the detailed descriptions below for more information about what each Market Profile supports.

Profile 1

Market Profile 1 is the common profile for North America systems. This default profile supports cards and protocols for Canada and the United States. Market Profile 1 has English, French and Spanish language options.

Profile 2

Market Profile 2 is one of the international profiles that you can choose. This profile supports English, French, Spanish and Turkish language options.

Trunk Cards supported on-core

- Analog
- T1
- 4-port BRI-ST
- 2-port BRI-ST

Trunk Cards supported off-core

- Analog
- E&M
- 4-port BRI-ST
- 2-port BRI-ST

Supported

- ETSI ISDN protocol
- aLaw companding law
- Loops are provisioned

Not Supported

- PRI
- DID
- UTAM

Profile 3

Market Profile 3 supports English, French and Spanish language choices.

Trunk Cards supported on-core

- Analog
- T1
- 4-port BRI-ST
- 2-port BRI-ST

Trunk Cards supported off-core

- Analog
- E&M
- DID
- 4-port BRI-ST
- 2-port BRI-ST

Supported

- ETSI ISDN protocol
- muLaw companding law
- Loops are provisioned

Not Supported

- PRI
- UTAM

Profile 4

Market profile 4 supports English, French and Spanish language choices.

Trunk Cards supported on-core

- Analog
- T1
- PRI
- 4-port BRI-ST
- 2-port U
- 4-port U

Trunk Cards supported off-core

- Analog
- E&M
- DID
- 4-port BRI-ST
- 2-port U
- 4-port U

Supported

- NI ISDN protocol
- muLaw companding law
- PRI

Not Supported

- UTAM
- Loops are not provisioned