

# Integration Validation and Troubleshooting

# 4

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## Overview

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### NOTE:

For Intuity AUDIX LX, some of the screens may have been updated to Web-based administration and may not have been updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

Validating an inband or serial switch integration with the Intuity AUDIX LX system requires use of the following procedures:

- [Validating the Port Connectivity](#)
- [Validating Busy Extensions](#)
- [Validating Forward All Calls and Call No Answer](#)
- [Validating Transfers](#)
- [Validating Call Disconnection](#)
- [Validating Message Waiting Indicator Updates](#)
- [Validating the Automated Attendant](#)
- [Viewing the System Monitor](#)
- [Viewing the Switch Integration Logs](#)

In addition, some switch-specific validation is required, as explained in the section, [Switch-Specific Integration Validation](#).

Troubleshooting an inband or serial integration involves determining the reasons why:

- [Calls Are Not Integrated \(Table 4-12\)](#)
- [Transfers Fail \(Table 4-13\)](#)
- [MWI Updates Do Not Occur Properly \(Table 4-14\)](#)
- [MWI Updates Occur Late \(Table 4-15\)](#)
- [Outcalling Fails \(Table 4-16\)](#)
- [Weak DTMF Detection \(Table 4-17\)](#)
- [Fax Transmission and Reception Failures \(Table 4-18\)](#)

## **Purpose**

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This chapter contains procedures for validating an inband or serial switch integration and guidelines for troubleshooting integration problems.

## **Before You Begin**

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This chapter assumes that:

- The switch is set for integration with the Intuity AUDIX LX system.
- The hardware and software necessary for integration is installed.
- The Intuity AUDIX LX system is set for switch integration and has been stopped and restarted to activate the changes.

## **Integration Validation for All Inband and Serial Switches**

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Procedures to validate the integration require the cooperation of the switch administrator.

### **Validating the Port Connectivity**

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To test whether the ports are physically connected properly:

1. Access the System Monitor - Voice Channels page.  
See [Viewing the System Monitor](#) for the procedure.
2. Ask the switch administrator to place calls to each individual Intuity AUDIX LX voice channel, one at a time.
3. Use the System Monitor page to verify that the correct channel is accessed from the switch.

## **Validating Busy Extensions**

To test call forwarding for busy extensions:

1. Busy out a system subscriber extension.
2. Call the busy extension.
3. Verify that the call follows the correct call forwarding coverage path and that the Intuity AUDIX LX system plays the busy greeting.
4. Repeat this procedure for the other extensions to be validated.

## **Validating Forward All Calls and Call No Answer**

When a system subscriber forwards all calls to the Intuity AUDIX LX SDGN number, a call placed to that subscriber should follow the call forwarding coverage path. The correct system prompt should be played for that subscriber.

To test the operation of forward all calls and call no answer for all system subscribers:

1. Call the system subscriber.
2. Verify that the correct prompt is played.

## **Validating Transfers**

To test transfers for all system subscribers:

1. From an Intuity AUDIX LX mailbox, use the “\*T” option to transfer to an extension or another Intuity AUDIX LX mailbox.
2. Monitor the transfer time.

The transfer time should be approximately 5 to 8 seconds.

## **Validating Call Disconnection**

To validate call disconnection for all system subscribers:

1. Leave a message in the system subscriber’s mailbox.
2. Retrieve the message, and listen for the sign of call progress tone recording.

If there is no call progress tone in the message, call disconnection occurred properly.

## **Validating Message Waiting Indicator Updates**

To validate the Message Waiting Indicator (MWI) updates for all system subscribers:

1. Leave a voice message for the system subscriber.
2. Check that the system subscriber's MWI (tone or indicator light) is turned on.

## Validating the Automated Attendant

To test the automated attendant for all system subscribers (if configured):

1. Call the system subscriber.
2. Verify that the automated attendant message plays.

## Viewing the System Monitor

The System Monitor - Voice Channels page is used to validate the Tip/Ring mapping. To view the System Monitor - Voice Channels page:

1. Start at the Administration main menu and select:

### **System Configuration and Status**

#### **System Monitor**

The System Monitor page is displayed. The page shows the service status of each channel on the system.

2. Click **Return to Main** to return to the Administration main menu.

## Viewing the Switch Integration Logs

To view the log entries generated by the various switch integration processes, select the entries by date and time or by process or, by selecting an event sequence number. You can also view only those entries associated with a specified event. Usually, selecting an event by sequence number presumes that you have viewed the log to obtain the number of the event. The log records only the most recent 2000 events.

If calls are made to the system and the logs:

- Contain the normally expected data, the calls are integrated.
- Contain no data, calls are not integrated
- Contain only part of the normally expected data, most likely the switch is set incorrectly. Contact your remote support center for assistance.

To view the switch integration logs:

1. Start at the Administration main menu and select:

### **Logs**

#### **Switch Integration Log**

The Switch Integration Log page is displayed with the current date and time displayed.

2. Do you want to view the log entries by sequence number?
  - If yes, enter the sequence number in the `Sequence Number:` field (see [Table 4-1](#)) and go to Step 6.
  - If no, go to Step [3](#).
3. Enter the date for the first log entry you want to view in the `Start Date:` field (see [Table 4-1](#)).
4. Enter the time for the first log entry you want to view in the `Time:` field (see [Table 4-1](#)).

The time entered must be earlier than the time displayed in the `System Time:` field.

5. Do you want to select entries by process type?
  - If yes, enter the name of process for which you want to view entries in the `Source:` field (see [Table 4-1](#)).
  - If no, enter **all** in the `Source:` field.
6. Click **Display**.

The system displays the log data you selected. A maximum of 2000 entries can be displayed (see the examples following [Table 4-1](#)).

7. Click **Return to Main** to return to the Administration main menu.

**Table 4-1. Switch Integration Log Page — Field Descriptions**

Field	Description	Values
<switch> Integration	Displays the switch selected on the Switch Selection page.	Display only
Start Date:	Selects events logged in the specified interval up to a maximum of 2000 events. If you use the <code>Sequence Number:</code> field, the system ignores data in these fields and the <code>Source:</code> field.	Format <i>MM DD YYYY</i> , where: <ul style="list-style-type: none"> <li>■ <i>MM</i> is the month (range 1–12)</li> <li>■ <i>DD</i> is the day (range 1–31)</li> <li>■ <i>YYYY</i> is the year</li> </ul>
Time:		Format <i>HH MM SS</i> , where: <ul style="list-style-type: none"> <li>■ <i>HH</i> is the hour in the 24-hour system (range 0–23)</li> <li>■ <i>MM</i> is the minute (range 0–59)</li> <li>■ <i>SS</i> is the second (range 0–59)</li> </ul>
Source:	Selects the name of a switch integration process for display. The display includes all events logged by this process from the 2000 events currently contained in the log. Choices are integration dependent. If you use the <code>Sequence Number:</code> field, the system ignores data in this field and the <code>Start Date:</code> and <code>Time:</code> field.	<ul style="list-style-type: none"> <li>■ Inband integrations                             <ul style="list-style-type: none"> <li>— CHDIP</li> <li>— SWINDIP</li> <li>— MWIDIP</li> </ul> </li> <li>■ Serial integrations                             <ul style="list-style-type: none"> <li>— RDR</li> <li>— SWINDIP</li> <li>— WTR and CHDIP</li> </ul> </li> <li>■ ALL — all logs for the integration type.</li> </ul>
Sequence Number:	Specifies a sequence number that corresponds to a logged event. If you use this field, the system ignores the other fields in the page. The display includes all data logged with the specified sequence number from the 2000 events currently contained in the log.	A 5-digit number
System Time:	Displays the system time as a convenience.	Display only. The format is the same as in the <code>Time:</code> field.

## Inband Switch Integration Log Entries

Log entries for inband integrations are generated by the CHDIP, SWINDIP, and MWIDIP processes.

- Each CHDIP entry contains the raw data sent from the switch for one call.
- SWINDIP entries associated with the CHDIP entry contain the corresponding parsed and translated data.
- Each MWIDIP entry contains data about one MWI update.
- Data fields are separated by a forward slash (/).

Each type of inband log entry contains two lines. The first line for all types identifies the entry as in [Table 4-2](#).

**Table 4-2. Inband Switch Integration Log — All Entries — Event ID**

Field	Description
<sequence number>	Identifies the event. A CHDIP entry and its corresponding SWINDIP entries share a sequence number. Pairs of MWIDIP entries share a sequence number.
<process name>	CHDIP, SWINDIP, or MWIDIP
<date and time>	The time and date stamp of the event.

## **Inband CHDIP Log Entries**

Inband CHDIP entries for call data contain the following information ([Table 4-3](#)).

**Table 4-3. Inband CHDIP (Raw) — Field Description**

Field	Description
Raw	Indicates the unparsed, untranslated data stream from the switch.
CHANNEL	The Intuity AUDIX LX channel number for the call. (Channel-to-extension mapping is done on the Voice Equipment page or as part of voice system administration.)
<data string>	The touch tones sent by the switch

## Inband SWINDIP Log Entries

Inband SWINDIP entries for parsed and translated data contain the following information ([Table 4-4](#)).

**Table 4-4. Inband SWINDIP (Parsed/Translated) — Field Descriptions**

Field	Description
Parsed and Translated	Indicates the data stream sent from the switch after parsing or translation, respectively.
<call type>	Identifies the call as: <ul style="list-style-type: none"> <li>■ DIR_INT (direct internal)</li> <li>■ DIR_EXT (direct external)</li> </ul> <p><b>⇒ NOTE:</b>                      NA_INT (no answer internal)                      This category includes Call Forward All Calls.</p> <ul style="list-style-type: none"> <li>■ NA_EXT (no answer external)</li> <li>■ BUSY_INT (busy internal)</li> <li>■ BUSY_EXT (busy external)</li> <li>■ REF_MWL (refresh MWL)</li> </ul>
<call type> (continued)	Identifies the call as: <ul style="list-style-type: none"> <li>■ PRT_INS (port-in service)</li> <li>■ PRT_OOS (port-out-of-service)</li> <li>■ DAY_SVC (day service)</li> <li>■ NGT_SVC (night service)</li> <li>■ LWC (leave word calling)</li> </ul> <p>For DIR_INT, NA_INT, BUSY_INT calls and LWC both the CLI and CP are shown. For DIR_EXT, NA_EXT, and BUSY_EXT calls, only the CP is shown.</p> <p>For REF_MWL, PRT_INS, PRT_OOS, DAY_SVC, NGT_SVC and LWC, neither the CLI nor the CP is shown.</p>
CHANNEL <number>	The Intuity channel number for the call. <p><b>⇒ NOTE:</b>                      Either one of these fields may be displayed, depending on the switch. (Channel-to-extension mapping is done on the Voice Equipment page as part of voice system administration.)</p>

**Table 4-4. Inband SWINDIP (Parsed/Translated) — Field Descriptions**

Field	Description
CHANEXT	The INTUITY extension number for the call.   <b>NOTE:</b> Either one of these fields may be displayed, depending on the switch. (Channel-to-extension mapping is done on the Voice Equipment page as part of voice system administration.)
CLI	The extension of the calling party, if available (see <i>&lt;call type&gt;</i> above). The number of digits in the parsed and translated CLI may differ depending on how the dial plan is set on the Dial Plan Translation page in the call data interface.  CLI is only an informational message sent by the switch.
CP	CPS is only an informational message sent by the switch.

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## Inband MWIDIP Log Entries

There are two types of Inband MWDIP entries. One type provides information on requests for MWI updates that the Intuity AUDIX LX system sends to the switch. The other provides information on the status of the updates.

Inband MWIDIP MWI request entries contain the following information ([Table 4-5](#)).

**Table 4-5. MWIDIP (MWI Requests) — Field Descriptions**

Field	Description
MWI_ON or MWI_OFF	Indicates whether MWI is to be turned on or off.
SWID <number>	Uniquely identifies the switch in the INTUITY system.
CHGRP	Identifies the INTUITY channel group for the update. (Extension-to-group mapping is done on the Voice Equipment page as part of voice system administration.)
AUDIX_EXTN	The pilot INTUITY AUDIX extension number.
XLAT_EXTN	For inband switches this should be the same as the AUDIX extension.

## Serial Switch Integration Log Entries

Log entries for serial integrations are generated by the RDR, SWINDIP, and WTR processes.

Each serial RDR entry contains the raw data sent from the switch for one call.

- Serial SWINDIP entries associated with the serial RDR entry contain the corresponding parsed and translated call data.
- Each serial WTR entry logs data about one MWI update.
- Data fields are separated by a forward slash (/).

Each type of serial log entry contains two lines. The first line of the serial log identifies the entry as follows ([Table 4-6](#)).

**Table 4-6. Serial Switch Integration Log — All Entries — Event ID**

Field	Description
<sequence number>	Identifies the event. A RDR entry and its corresponding SWINDIP entries share a sequence number. Pairs of WTR entries share a sequence number.
<process name>	RDR, SWINDIP, or WTR
<date and time>	The time and date stamp of the event

## Serial RDR Log Entries

Serial RDR entries contain the following information ([Table 4-7](#)).

**Table 4-7. Serial RDR (Raw) — Field Descriptions**

Field	Description
Raw	Indicates the unparsed, untranslated data sent from the switch.
tty<number>	The name of the serial device used for the call
<data string>	The data stream sent by the switch, consisting of ASCII and hexadecimal characters.

## Serial SWINDIP Log Entries

Serial SWINDIP entries contain the following information ([Table 4-8](#)).

**Table 4-8. Serial SWINDIP (Parsed/Translated) — Field Descriptions**

Field	Description
Parsed and Translated	Indicates the data stream sent from the switch after parsing or translation.
<call type>	Identifies the call as: <ul style="list-style-type: none"> <li>■ DIR_INT (direct internal)</li> <li>■ DIR_EXT (direct external)</li> </ul> <p><b>⇒ NOTE:</b>                      NA_INT (no answer internal)                      This category includes call forward, all calls.</p> <ul style="list-style-type: none"> <li>■ NA_EXT (no answer external)</li> <li>■ BUSY_INT (busy internal)</li> <li>■ BUSY_EXT (busy external)</li> </ul> For DIR_INT, NA_INT, and BUSY_INT calls, both the CLI and CP are shown. For DIR_EXT, NA_EXT, and BUSY_EXT calls, only the CP is shown.
CHANNEL <number>	The INTUITY channel number for the call. <p><b>⇒ NOTE:</b>                      Either one of these fields may be displayed, depending on the switch. If the CHANNEL&lt;number&gt; is not displayed, its default value is -1. (Channel-to-extension mapping is done on the Voice Equipment page as part of voice system administration.)</p>

**Table 4-8. Serial SWINDIP (Parsed/Translated) — Field Descriptions**

Field	Description
CHANEXT	The INTUITY extension number for the call.   <b>NOTE:</b> Either one of these fields may be displayed, depending on the switch. If the CHANNEL<number> is not displayed, its default value is -1. (Channel-to-extension mapping is done on the Voice Equipment page as part of voice system administration.)
CLI	The extension of the calling party, if available (see <call type> above). The number of digits in the parsed and translated CLI may differ depending on how the dial plan is set on the Dial Plan Translation page in the call data interface.
CP	The extension of the called party, if available (see <call type> above).

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## Serial WTR Log Entries

There are two types of Serial WTR entries. One type provides information on requests for MWI updates that the INTUITY system sends to the switch. The other provides information on the status of the updates.

Serial WTR MWI request entries contain the following information ([Table 4-9](#)).

**Table 4-9. Serial WTR (MWI Requests) — Field Descriptions**

Field	Description
MWI_ON or MWI_OFF	Indicates whether the MWI is to be turned on or off.
SWID <number>	Uniquely identifies the switch in the INTUITY system.
TTY	The name of the serial device used for the call.
AUDIX_EXTN	The INTUITY AUDIX® extension number.
XLAT_EXTN	The translated extension number. The number of digits may differ from that in the AUDIX_EXTN fields depending on how the dial plan is set on the Dial Plan Translation page in the call data interface.

Serial WTR MWI status entries contain the following information ([Table 4-10](#)).

**Table 4-10. Serial WTR (MWI Status) — Field Descriptions**

Field	Description
MWI_SUCCESS or MWI_FAIL	Indicates whether the requested MWI update occurred.
<MWI string>	A string that contains the INTUITY AUDIX extension number for which the MWI is updated plus any prefix or suffix needed to turn the MWI on or off. (MWI prefixes and suffixes are set on the MWI Parameters page. See <a href="#">Setting MWI Parameters</a> in <a href="#">Chapter 3, Intuity AUDIX LX Administration for Inband and Serial Switch Integration.</a> ) "Padding" characters, such as periods ( . . ) may also be included in the string.

## Switch-Specific Integration Validation

**Table 4-11. Serial WTR (MWI Status) — Field Descriptions**

Field	Description
MWI_SUCCESS or MWI_FAIL	Indicates whether the requested MWI update occurred.
<MWI string>	A string that contains the INTUITY AUDIX extension number for which the MWI is updated plus any prefix or suffix needed to turn the MWI on or off. (MWI prefixes and suffixes are set on the MWI Parameters page. See <a href="#">Setting MWI Parameters</a> in <a href="#">Chapter 3, Intuity AUDIX LX Administration for Inband and Serial Switch Integration.</a> ) "Padding" characters, such as periods ( . . ) may also be included in the string.

The following section provides procedures for validation of switch features or functionality.

## Integration Troubleshooting for Serial and Inband Switches

The troubleshooting procedure for serial and inband switches is categorized according to the problems.

### Calls Are Not Integrated

Calls may not be integrated due to any of the following reasons in [Table 4-12](#).

**Table 4-12. Calls are not Integrated**

Possible Problems	Possible Solutions
Incorrect switch settings for translations, class of service, or system subscriber setup.	Work with the switch administrator to correct the switch settings.
<b>For Serial Switches only</b>	
Bad Serial connection	<ol style="list-style-type: none"> <li>1. Check the connection using an RS-232 mini-tester or a serial breakout box.</li> <li>2. Ensure that the transmit data and receive data leads are crossed properly.</li> <li>3. Try the connection both with and without a null modem.</li> </ol>
Serial port setting mismatch between the switch and the Intuity system	<ol style="list-style-type: none"> <li>1. Check the setting settings on the Serial Interface page in the Intuity system. For information on the page, see <a href="#">Setting the Serial Interface Settings</a> in <a href="#">Chapter 3, Intuity AUDIX LX Administration for Inband and Serial Switch Integration</a>.</li> <li>2. Work with the switch administrator to check the settings on the switch.</li> </ol>

## Transfers Fail

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Call transfers could fail due to the following reasons in [Table 4-13](#).

**Table 4-13. Transfers Fail**

Possible Problems	Possible Solutions
Incorrect transfer administration on the Intuity AUDIX LX system.	Verify the transfer restrictions set for the Intuity AUDIX LX application.
Inappropriate transfer restrictions set on the switch.	Ask the switch administrator to check any transfer restrictions set on the switch.
Dial tone is not detected and the Intuity AUDIX LX transfer function times out due to a mismatch in the tone settings between the switch and the Intuity AUDIX LX system.	Work with the switch administrator to check the tone settings on the switch, or use the Capture page to check the switch tones.  Verify that matching settings are set on the Intuity AUDIX LX system.  See information on the Dial Tone page and the Tones Administration page in Appendix C, "Troubleshooting Procedures", in the system installation book for your platform.
The caller is dropped because the flash duration on the switch does not have the same value as the one on the Intuity AUDIX LX system.	Verify that the flash duration on the switch is the same as the one set for the Intuity AUDIX LX system.

## MWI Updates Do Not Occur Properly

MWI updates could not be occurring due to the following reasons in [Table 4-14](#).

**Table 4-14. MWI Updates Do Not Occur**

Possible Problems	Possible Solutions
See the reasons above for calls not integrated.	See the solutions above for calls not integrated.
Incorrect settings or setting mismatch between the switch and the Avaya INTUITY system.	Work with the switch administrator to verify sets for MWI on the switch.
Incorrect settings or setting mismatch between the switch and the Avaya INTUITY system. (continued)	<ul style="list-style-type: none"> <li>■ Verify that the MWI update flag is set to y (yes) on the MWI Parameters page. If it is not, set the flag correctly.</li> <li>■ Verify that the on/off prefix is set correctly on the MWI Parameters page. If it is not, set the prefix correctly.</li> </ul> <p><b>Inband switches only:</b></p> <p>Verify the channels are assigned to the correct groups. See the installation book for your platform for information on channel assignments and group assignments.</p>
Incorrect switch settings for translations, class or service, or system subscriber setup.	Work with the switch administrator to correct the switch settings.
<b>Only for Inband switches</b>	
Dial tone is not detected.	<p>Work with the switch administrator to check the tone settings on the switch, or use the Tones Administration page.</p> <p>Verify that matching settings are set on the Avaya INTUITY system.</p> <p>See information on the Dial Tone page and the Tones Administration page Appendix C, "Troubleshooting Procedures", in the installation book for your platform.</p> <p><b>Nortel Norstar Switches only:</b></p> <p>The flash duration may not be set properly.</p>

## MWI Updates Occur Late

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MWI updates could occur late due to the reasons given in [Table 4-15](#).

**Table 4-15. MWI updates occur late**

Possible Problems	Possible Solutions
All the ports are busy due to the amount of updates requested.	Reserve one or two channels from the voice hunt group. Assign them only for MWI updates in separate channel groups.

## Outcalling Fails

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Outcalling could fail due to the reasons given in [Table 4-16](#).

**Table 4-16. Outcalling Fails**

Possible Problems	Possible Solutions
The switch dial tone is not detected.	<p>Work with the switch administrator to check the tone settings on the switch, or use the Tones Administration page.</p> <p>Verify that matching settings are set on the Avaya INTUITY system.</p> <p>See information on the Dial Tone page and the Tones Administration page in Appendix C, "Troubleshooting Procedures", in the system installation book for your platform.</p>
The switch dial tone is not detected.	<p>Verify that outcalling is enabled in each of the following:</p> <ul style="list-style-type: none"><li>■ INTUITY AUDIX LX administration</li><li>■ Class of service for all</li><li>■ On subscribers mailboxes</li></ul>
Disconnect not recognized.	<p>For local system subscriber calls, the wink may not be detected.</p> <p>Check for the correct matching wink interval.</p> <p>Make sure that the switch is set correctly for wink detection.</p> <p>For external calls, the far-end disconnect tone may not be recognized.</p> <p>Work with the switch administrator to check the tone settings on the switch, or use the Tones Administration page for tone analysis.</p> <p>Verify that settings match those set for the Avaya INTUITY system.</p> <p>See information on the Dial Tone page and the Tones Administration page in Appendix C, "Troubleshooting Procedures", in the installation book for your platform.</p>

## Weak DTMF Detection from Certain Stations or Outside Calls

Weak DTMF detection from certain stations or outside calls could be due to the reasons given in [Table 4-17](#).

**Table 4-17. Weak DTMF Detection**

Possible Problems	Possible Solutions
Some wireless signals produce very weak DTMF signals.	Tier IV can change DTMF detection levels in the INTUITY system.

## FAX Transmission and Reception Failures

FAX transmission and reception failures could be due to the reasons given in [Table 4-18](#).

**Table 4-18. Fax Transmission and Reception Failures**

Possible Problems	Possible Solutions
Fax transmission failures due to low signal level at the remote end	Increase the transmit level of all modes. The five transmit level modes supported on the INTUITY AUDIX LX application are: <ul style="list-style-type: none"> <li>■ V21</li> <li>■ V27-24</li> <li>■ V27-48</li> <li>■ V29-72</li> <li>■ V29-96</li> </ul>
Fax reception failures due to loss of incoming Fax signal	<ul style="list-style-type: none"> <li>■ Set the Fax receive gain for Fax modem receive operations.</li> <li>■ The valid range for fax reception is -48 to 12 dB.</li> </ul> This setting can be increased to avoid loss of incoming signal.

