AVAYA

EC500
Extension to Cellular
Release 2
Troubleshooting Guide

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"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

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- Theft (such as, of intellectual property, financial assets, or toll-facility access)
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- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

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- Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
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- Reorient the receiving television or radio antenna where this may be done safely.
- To the extent possible, relocate the receiver with respect to the telephone equipment.
- Where the telephone equipment requires ac power, plug the telephone into a different ac outlet so that the telephone equipment and receiver are on different branch circuits.

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Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Industry Canada (IC) Interference Information
This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of Industry Canada.

Le Présent Appareil Nomérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A préscrites dans le reglement sur le brouillage radioélectrique édicté par le Industrie Canada.

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EMC Directive   89/336/EEC
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Acknowledgment
This document was prepared by Avaya Inc., Denver, CO.

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About This Document

Purpose

This guide describes suggested troubleshooting actions to resolve problems that may occur during EC500 operation.

Intended Audience

The audience for this guide includes System Administrators, Software Specialists, and Avaya technical personnel.

Reason for Reissue

This guide has been reissued to provide troubleshooting information for Release 2 of EC500.

How to Use This Document

This document is organized as follows:

Chapter 1, Basic Troubleshooting - Provides a chart that covers the most common problems users may experience due to interaction between EC500 and their cellular service provider. The chart also provides suggested actions/resolutions to correct each problem.

Chapter 2, What To Do When Users Cannot Receive EC500 Calls - Provides procedures for correcting situations which result in users not being able to receive EC500 calls on their cell phones.

Related Documentation

Related documentation:

Avaya EC500 Release 2 Extension to Cellular Installation and Administration Guide, Issue 2, July 2001 (210-100-500)

Avaya EC500 Extension to Cellular Installation/Administration Guide, Issue 1, February 8, 2001 (210-100-500)

Avaya EC500 Extension to Cellular Release 2 User Guide, Issue 1, July, 2001 (210-100-700)

Online documentation for EC500 is provided at the following URLs:

> http://www1.avaya.com/enterprise/who/docs/ec500
> http://support.avaya.com/wireless

Chapter 1: Basic Troubleshooting

1

Introduction

This chapter provides a basic troubleshooting chart that covers possible problems that might be encountered with EC500 operation. Error conditions displayed on your administrative terminal are also covered.

If users report that EC500 calls are not being received on their cell phones, first see Chapter 2, Chapter 2: What To Do When Users Cannot Receive EC500 Calls, then refer to the troubleshooting chart in this chapter.

For test procedures used to verify the connection to the cell phone, see Chapter 4, "Installation and Administration Test" in the *EC500 Release 2 Installation and Administration Guide*.

If performing the procedures described in both this chapter and Chapter 2 do not resolve the problem, contact your Avaya technician for assistance.

Figure 1-1.   Error Conditions in the Operation of EC500

Situation	Possible Cause(s)	Suggested Action or Resolution
Users cannot receive EC500 calls on their cell phones.	See the procedures in Chapter 2, <u>Chapter 2: What To Do When Users Cannot Receive EC500 Calls</u> for detailed information on possible sources of the problem.	See the procedures in Chapter 2, <u>Chapter 2: What To Do When Users Cannot Receive EC500 Calls</u> for detailed instructions on troubleshooting this problem.
The user reports that all calls go directly to the cellular voice mail, but the cell phone is on and working fine.	Both XMOBILE extensions may be bridged to the same line appearance on the principal phone.	Make sure that both XMOBILE extensions are not bridged to the same line appearance on the principal phone.
The user reports that voice mail messages are not going to the mailbox of choice.	Incoming calls to an office number are usually routed to the resident AUDIX voice mail after a pre-determined number of rings. For cell phone calls, the same functionality exists from the Service Provider. At this time there is no way to coordinate the two different voice mail systems using EC500.	It is possible to set up the number of rings before coverage answers so that one or the other voice mail systems always answers first. Users may need to contact their Cellular Service Provider to change the number of rings at the cell phone. However, there are coverage options in both the Avaya Communications Server (busy, active, send-all-calls) and the network (cell phone unavailable, network congested) that cause a call to immediately go to the respective voice mail. Users should realize that an unanswered call could result in a voice mail message in either mailbox.

Situation	Possible Cause(s)	Suggested Action or Resolution
The user reports that he or she is missing calls at the office number because the cell phone voice mail is picking up the call instead.	The user has turned off the cell phone or the phone is in an out of coverage area. When this is the case, Service Providers usually have the calls routed to their own voice mail automatically. There is no way to control this with EC500.	It is recommended that EC500 be disabled prior to leaving a coverage area or turning off the cell phone. This allows the user to pick up the call on the office number or let the Corporate voice mail answer the calls.
	Both XMOBILEs are bridged to the same line appearance on the principal phone.	Check that the first XMOBILE is bridged to the first line appearance and the second XMOBILE is bridged to the second line appearance.
The user reports that the cell phone is not receiving caller identification numbers for calls from the Avaya Communications Server, while the office number that the cell phone is bridged to does.	The Avaya Communications Server has not been administered properly for sending 10-digit caller identification numbers. Most Service Providers require a 10-digit number.	1) Re-check the outbound trunk screen to make sure `send calling` is set to yes. 2) Re-check the inbound trunk screen and make sure the `numbering format` field on the inbound loop back trunk is set to `natl-pub`.
	External trunks serving the cell phone are using a non-ISDN trunk.	Change the routing administration to route over an ISDN trunk.
	There is an incorrect entry on the ISDN Number Public/Unknown Format screen.	Verify that the entries on the ISDN Number Public/Unknown Format screen are correct.

Situation	Possible Cause(s)	Suggested Action or Resolution
The user reports that the cell phone is receiving a switch default caller identification number for calls from the Avaya Communications Server.	The ISDN Service Provider (SP) is replacing the caller identification with a fixed Caller ID.	Escalate the issue to your Telecom Manager who may contact your ISDN SP to request that this be fixed or find an alternate ISDN SP that allows the caller identification to pass.
	The switch is blocking the outgoing caller identification and is passing a default Caller ID.	Change your switch administration to allow caller identification to go outside the switch.
The user hears a beep while on a call originating from the Avaya Communications Server, but is not able to use the call waiting feature on the cell phone to switch to the other call.	Most likely the user is hearing the tone provided by the Avaya Communications Server when call waiting is enabled at the switch.	You have two possibilities: 1) communicate to the user that when a call waiting indication is heard, but the user can't switch the call, he or she needs to hang up on the first call in order to receive the call, OR 2) disable call waiting at the switch level and the regular call waiting capability provided by the Cellular Service Provider then handles the call waiting feature.

Terminal Error Codes

When the service state of an XMOBILE station changes from In-Service to Out-of-Service, error type 18 is logged in the error log against the XMOBILE station and a warning alarm is raised and logged in the alarm log.

When the service state of an XMOBILE station changes from Out-of-Service to In-Service, error type 18 is removed from the error log and the warning alarm is removed from the alarm log.

See Chapter 5, "Maintenance," in the *EC500 Release 2 Installation and Administration Guide* for more information on busy out and release maintenance commands.

Chapter 2: What To Do When Users Cannot Receive EC500 Calls

2

Introduction

Most problems reported by EC500 users are not likely to be problems with EC500 itself. In most cases, reported problems are caused by user confusion due to unexpected interaction between the Cellular Service Provider and EC500 features.

This chapter provides troubleshooting procedures to follow when users cannot receive EC500 calls on their cell phones.

A basic EC500 troubleshooting chart covering other possible problems that might be encountered with EC500 operation can be found in <u>Chapter 1</u> of this guide, as can information on error codes you may see on your administrative terminal.

For test procedures used to verify the connection to the cell phone, see Chapter 4, "Installation and Administration Test" in the *EC500 Release 2 Installation and Administration Guide*.

Procedures for Users Who Cannot Receive EC500 Calls on Their Cell Phones

If an EC500 user is not able to receive EC500 calls on the cell phone, follow these procedures in the suggested order to isolate and fix the problem. After each step, you may want to verify that the problem has been fixed by making an EC500 call to the mapped cell phone.

1. Verify that you can call the cell phone from the switch. This also verifies that the user's service contract with the Cellular Service Provider (CSP) is active, and that the user gets good coverage in that area.

Check this by making a direct call to the cell phone's published number. When making this test call, wait until the call rings the cell phone (which verifies that there is coverage), or until the call goes to the CSP's voice mail (which verifies that the service is provided but there may not be good coverage).

2. Use the **status station** command for the principal number that the XMOBILE is bridged to and verify that SAC or Call Forwarding has not been activated on the principal extension.

3. Use the **status station <*XMOBILE extension*>** command to check the following:

   - The service state is "in service/idle." If not, use the **release <*XMOBILE extension*>** command to put it back in the active state.

   - The EC500 state is enabled, by verifying that the **CF Destination Ext:** field is blank. If EC500 is disabled, you will see the designated CF destination or, if the XMOBILE extension is bridged, two asterisks (**) in this field. (An exception is a newly added XMOBILE station that comes up initially in a disabled state, without the asterisks appearing on the Status Station screen.) If EC500 is disabled, ask the user to enable EC500 for the principal office number.

4. On the XMOBILE Station screen verify that the entries in the **Mobility Trunk Group, Dial Prefix**, and **Cell Phone Number** fields are correct as specified in the *EC500 Release 2 Installation and Administration Guide's* Chapter 3, "Administration."

5. Enter the **status trunk <*trunk group number*>** command for both the inbound and outbound trunks in the loop back arrangement and verify that the trunk ports are in service, and that there are enough ports for the projected EC500 traffic needs; that is, not all ports are in an active state.

   If all (or most) ports are active you may need to administer more trunk ports.

   If the trunk ports are in an out-of-service state:

   - Verify that the trunk administration is correct, as specified in the *EC500 Release 2 Installation and Administration Guide's* Chapter 3, "Administration."

   - Check the yellow LED on the circuit packs used in the loop back arrangement.

     — If the yellow LED is ON but the trunk is down, do a **test board long clear <*ppcss*>** for both the trunks in the loop back arrangement. If this does not fix the problem, continue with the procedures in the next step, Perform Hardware Checks.

     — If the yellow LED is OFF, continue with the procedures in the next step, Perform Hardware Checks.

- Perform Hardware Checks:

    If using DS1 loop back:

    - If amphenol connector is being used:

        — Verify that the loop back cable is properly cross-connected as specified in Chapter 2, "Installation and Planning" of the *EC500 Release 2 Installation and Administration Guide*.

        — If the connection is correct, the problem could be a bad cable. Replace the cable.

    - If a D8W connector is being used:

        — Verify that it is connected to Slot 8 of the Type 356A connector.

        — If the above check is OK, the cause of the problem could be a bad cable. Replace the cable.

        — The cause of the problem could also be that the 356A connector is bad. Replace the connector.

    If using H.323 IP trunks for the loop back arrangement:

    - Verify that the administration is as specified in the *EC500 Release 2 Installation and Administration Guide's* Chapter 3, "Administration."

    - Busy out and release the two signalling groups associated with EC500 loopback.

    - See maintenance documentation that can be obtained from the web site:

        http://prodpubs.avaya.com/final/definity/r9.5/233758_3.pdf

6. Check the COR of the inbound trunk in the loop back arrangement and verify that the trunk does not have calling restrictions, that it is not outward restricted, and that its Facility Restriction Level (FRL) is sufficient to access an external ISDN trunk facility. If any such problems are found, administer the right COR for that trunk.

7. Check the ARS Analysis table and make sure that there is an entry to route the cell phone number over an ISDN trunk on the switch.

If the problem cannot be corrected by following the above procedure(s) or those listed in <u>Chapter 1</u>, escalate the issue to an Avaya technician. In addition to the checks listed above, verify with the technician that the EC500 XMOBILE station is not restricted from receiving incoming calls.