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Mobile Communications

EDACS™ Jessica
PBX Gateway

Operator's Manual

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1. SCOPE

This manual explains how to use the Enhanced Digital Access Communications System (EDACS) Jessica Telephone Interconnect System. The Jessica system allows telephones on the Public Switched Telephone Network (PSTN) to reach radio users. Conversely, the system allows radio users to make telephone calls. This manual provides a brief explanation of how to access Jessica services, followed by a more detailed discussion for advanced users.

Several terms used throughout this manual may be unfamiliar to the user. These terms are explained in this section and in the Glossary to help avoid confusion. Private Branch Exchange (PBX) is a telephone switch commonly used in business applications. For example, dialing the last four digits of a telephone number to call someone else in your office makes use of a PBX to reach that person. Public Switched Telephone Network (PSTN) is a telephone switch for public use, as opposed to private use. For example, dialing your home telephone number from your office uses a PSTN to reach the home number. An inbound call is a phone-originated call to a radio and an outbound call is a radio-originated call to a phone. Hang time is a specified time (hang time default is 30 seconds at the PBX Interface) during which the Push-to-Talk (PTT) button on a radio must be pressed to continue the call. If the PTT button is not pushed within the hang time limit, then EDACS disconnects the call. Conversation time limit is the maximum amount of time (default is 5 minutes at the PBX Interface) allowed for all interconnect calls. If a call exceeds the conversation limit, then EDACS drops the call.

NOTE

Access to EDACS Systems features depends on how the EDACS System Administrator has configured the system. Check with your EDACS System Administrator for information on proper usage before accessing the system.

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2. QUICK USAGE GUIDE

This section presents a brief summary on how to place phone calls through the EDACS Jessica system. For more information about the access methods, refer to the detailed usage section.

2.1. MAKING PHONE CALLS FROM AN EDACS RADIO

These "generic" instructions for all EDACS radios assume a typical Jessica configuration. To determine the exact sequences to access Jessica features from a specific radio, refer to the operator's manual for that radio.

The steps for making phone calls from an EDACS radio are presented below.

- **Placing a Call**
  Initiate the call by one of the following actions:
  1. Press the "*" key, enter the destination telephone number, and then depress the PTT button.
  2. Enter the destination telephone number, press the "*" key, and then depress the PTT button.
  3. Press the special call button (typically SCN or SCAN). Select the telephone number from the list and depress the PTT button.

- **Answering a Call**
  Simply press the PTT button and hold while talking. Full duplex radio users need only press PTT initially.

- **Sustaining a Call**
  Press the PTT button whenever you hear the hang time warning tone to ensure that your call is not disconnected. EDACS has a "hang time" that will drop a call if the user fails to press the PTT button within a specified time (default is 30 seconds at the PBX Interface). Full duplex radio users need only press PTT initially.

- **Ending a Call**
  Press the clear button on your radio. Please consult your operator's manual for details.

- **Common Speed Dialing**
  Consult your System Administrator for the common speed dial numbers. Follow the steps for "Placing a Call" and use the common speed dial number.

2.2. CALLING EDACS RADIOS FROM A PHONE

For all types of calls to an EDACS radio, phone users hear normal phone tones i.e., ringing until the called party answers or the call times out, or alternatively, a busy tone until hanging up or the call times out.

- **Placing a Call**
  When calling a radio that has a direct inward dial (DID) number, call the PSTN number for that group or individual.

  For all other radios, follow one of the sequences below. With some systems, the phone user may need to enter an EDACS selector number (not shown here).   Valid logical identification (LID) numbers range from 00001 to 16382, and valid group identification (GID) numbers range from 0000 to 2047. A leading "3" designates a digital call and a "2" before a GID number designates a group call. The term "digital" refers to voice transmission in a digital format.

  First, call the EDACS telephone number.

  At the tone, enter the EDACS selector, if necessary.

To Call:

- An individual radio, enter the 5-digit radio ID.

- A digital individual radio, press "3" + 5-digit radio ID.

- A group of radios, press "2" + 4-digit group ID.

- A digital group of radios, press "3" + "2" + 4-digit group ID.

Example 1: To call radio 6107

- Dial the EDACS telephone number.

- At the dial tone, enter the EDACS selector (optional).

- Enter "0" + "6" + "1" + "0" + "7" (Remember the LID must be 5 digits, i.e. 06107).

Example 2: To call group 372

- Dial the EDACS telephone number.

- At the dial tone, enter the EDACS selector (optional).

- Enter "2" + "0" + "3" +"7" + "2" (Remember the GID must be 4 digits , i.e. 0372).

Some systems will be set up using feature and authorization codes that are a variable number of digits. (Contact your System Administrator for more information.) The authorization code must be entered after the EDACS selector and before the digits specifying call type and radio ID.

Example 3: This is the same call to group 372 as described in Example 2 except that the authorization code "*6*123#" is required and the EDACS selector is "8".

- Dial the EDACS telephone number.

- At the dial tone, enter the EDACS selector ("8").

- Enter the authorization code "*" + "6" + "*" + "1" + "2" + "3" + "#".

- Enter "2" + "0" + "3" + "7" + "2".

- **Ending a call**
  Simply hang up the phone.

3. DETAILED USAGE GUIDE

The Jessica system contains a small business telephone switch that allows flexible use of radios and telephones. The sections below present instructions on how to use a radio or a telephone to complete several types of tasks with Jessica.

3.1. RADIO USERS

The chart below shows how to use a radio to accomplish several tasks with Jessica.

Task	Accomplishing Task with Jessica
Placing a PSTN destination call	See your radio operator's manual for specific usage on interconnect calls. Number requires a Least-Cost Routing (LCR) code as the leading digit of the destination phone number. The LCR is customer-defined, but typically is "9." Once the number is passed through Jessica and into the PSTN, the radio user will hear ringing.
Placing a PBX destination call	Once the number is passed through Jessica, the radio user will hear ringing.
Receiving a call	To an EDACS radio user, reception of a PSTN- or PBX-originated call involves pressing the PTT button to answer it.

Task	Accomplishing Task with Jessica
DTMF overdial	Consult your radio operator's manual for specific usage. DTMF is allowed in clear voice only. Note: Currently, EDACS radios generate the North American DTMF tones. Therefore, to use overdial outside North America, EDACS radios would be required to generate the appropriate tone set.
Terminating a call	A radio-originated or PSTN- or PBX-originated call may be terminated for a radio with a keypad by pressing the SPC or Clear button. Radios without a keypad may terminate the call by not keying the radio within the hang time period.

3.2. PHONE USERS

The following chart shows how to access Jessica features from a telephone.

Task	Accomplishing Task with Jessica
Placing a phone-originated call	1. The PSTN user must dial into the MD110 via a customer-defined public number. Once the MD110 answers, it generates a second dial tone. **Note:** Normally, a user will skip to step 4, but steps 2 and 3 may be used to obtain more phone privileges where allowed.

Task	Accomplishing Task with Jessica
	2. At the second dial tone, the PSTN user enters the following command sequence: "*" + FC + "*" + AC + "#" FC is the MD110 feature code indicating that an authorization code (AC) follows. This feature code is market-dependent and is typically a single digit. For example, a "6" is used as the FC in the U.S. AC is the authorization code defined for the caller. The AC is customer-defined and may be from 1 to 7 digits, but cannot begin with "0." 3. Once the phone user has entered the command sequence, a dial prompt is generated. 4. Before the radio ID is entered, the phone user may need to enter the EDACS LCR code. Similar to the LCR code for radio-originated PSTN calls, the EDACS LCR is customer-defined, but typically is "7." The PSTN user then enters the EDACS radio ID.

Task	Accomplishing Task with Jessica
	The radio ID is always a 5-digit number. For an individual call, the PSTN user enters a 5-digit radio LID. For a group call, the 4-digit GID must be preceded by a "2," thus forming a 5-digit number. 5. If the PSTN user wishes to place a digital voice call, a "3" precedes the 5-digit radio ID.
Receiving a radio-originated call	The PSTN user receives a radio-originated call as a normal telephone call.
Terminating a call	A radio-originated or PSTN-originated call is terminated when the PSTN user hangs up the phone. A radio user may also terminate the call by pressing the SPC or Clear key, or by allowing the hang time to expire. Depending on the phone system, EDACS may drop a call after a delay. If PSTN does not provide line clearing, then the call is not terminated when the phone hangs up. The radio user must terminate the call.

4. GLOSSARY

AC   Authorization Code -- the MD110 authorization code defined for EDACS interconnect calls. The AC is customer-defined and may be from 1 to 7 digits, but cannot begin with "0."

DID   Direct Inward Dial -- allows callers from the public network to place an individual call to a radio by dialing a single telephone number, instead of one telephone number to call Jessica and a second series of numbers to indicate the Logical ID (LID). To accomplish this, the LID is mapped to a number. In some cases, the DID number will be the LID.

DTMF   Dual Tone Multi-Frequency -- standard telephone dialing tones.

FC   Feature Code -- the MD110 feature code indicating that an authorization code (AC) is to be entered. This feature code is market-dependent and typically is a single digit. For example, a "6" is used as the FC in the U.S.

LCR   Least-Cost Routing -- a function that allows the system to automatically select the most economical route for an outgoing call. The selected route is based on trunk availability, class of service, time of day, and week. LCR is available for outbound calls only.

LID   Logical Identification -- individual radio or console ID.

MD110   Ericsson PBX that provides connectivity to the PSTN.

PBX   Private Branch Exchange -- a telephone switch commonly used in business applications.

PSTN   Public Switched Telephone Network.

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