EAMPS

Software Option   897 950

Operating Instructions

23_eamps   Doc. Version: 9504-250-A

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Performance test 1

Entries

HOMESYSTEM	Homesystem number.
MIN-NO	Mobile identification number. If the subscriber number entered into the input field does not coincide with the actual subscriber number in the field MIN-NO the tests cannot be performed correctly.
FOCC CHANNEL	Forward control channel number.
FVC CHANNEL	Forward voice channel number.
SAT-FREQ	SAT-frequency(scrollvariables 5970 Hz/6000 Hz /6030 Hz/ NO SAT).
POWER LEVEL	Mobile output power level: 0 thru 7
RF-Level	RF output level. Set Level/50 Ω or Level/EMF on RX or Duplex mask.

Result display

MIN	Received mobile identification number.
SN (1st line)	Serial number of mobile (hexadecimal code).
SN (2nd line)	Serial number of mobile (decimal code).
SCM	Station class mark. ○ First character: power class (1 = high, 2 = middle, 3 = low). ○ Second character: transmit mode (blank = continuous, D = discontinuous). ○ Third character: bandwidth (blank = normal, E = extended). ○ Fourth character: analog or dual mode mobile (0 = analog mobile, 1 = dual mode mobile).
No.	Dialed number.
ERR	Frequency error of mobile transmitter.
DEV	Mobile frequency deviation.
PWR	Mobile output power.

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```
┌──────────── CELL. EAMPS ────────────┐
│ ┌──────────────────┐                │   Fig. 10.1: Basic test mask, 1st softkey level.
│ │00022  HOMESYSTEM │ RESULTS        │
│ │2135551212 MIN-NO │                │
│ │0333 FOCC CHANNEL │ MIN:  2135551212
│ └──────────────────┘ SN :  8200F9C9 │
│   CALL FROM CELL           130/00/063945
│   CALL FROM MOBILE   SCM:  1     0   │
│                      No.:  0894456328
│ ┌──────────────────┐                │
│ │0289  FVC CHANNEL │ ERR:   +0.52 kHz│
│ │5970 Hz  SAT-FREQ │ DEV:   +2.27 kHz│
│ │3     POWER LEVEL │       -2.49 kHz │
│ └──────────────────┘ PWR:    138 mW │
│                                     │
│   RF-Level: - 60.0 dBm              │
└─────────────────────────────────────┘
```

-ETC-   EXECUTE   RELEASE   MOBILE   CELL.   RETURN

Meaning of softkeys

ETC	Allocates 2nd softkey level to basic test mask.
EXECUTE	Performs change of traffic channel, SAT or power level.
RELEASE	Releases call.
MOBILE	Starts mobile initiated call.
CELL.	Starts cell initiated call.
RETURN	Returns to OPTION CARD mask.

Test procedure step by step

Mobile initiated call

Requirement: mobile is not in traffic channel.
1. (Mobile)
2. Dial a number and press "Send". The mobile "Send"s out the dialed number and then the mobile is handed off to the traffic channel: Measuring results are displayed at righthand side of screen.

Cell initiated call

Requirement: mobile is not in traffic channel.
1. Press softkey (CELL.) and wait until mobile is "in service".
2. Lift handset when mobile rings or "Call Received" indicator lamp lights up. Thereafter the measured results are displayed at the righthand side of the screen.

Handoff procedure

Requirement: mobile is on traffic channel.
1. Enter new forward voice channel number, new SAT frequency, or new power level, and then press softkey (EXECUTE). Then the mobile changes to the newly entered parameters for instance forward voice channel etc. Updated measured results are displayed at righthand side of screen.

    Note: EAMPS does not provide simultaneous control of forward voice channel handoff and power change. However all other combinations are allowed.

Dropping the call

Requirement: mobile is on traffic channel.
1. (RELEASE)

Polling results via IEEE controller

Result	Poll with IEEE command
MIN:	RESULt1
SN : (1st line)	RESULt2
No.: (1 to 20)	RESULt3
SCM:	RESULt4
SN : (2nd line)	RESULt5
No.: (21 to 32)	RESULt6

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Performance test 2

After (ETC) the basic test mask is assigned new softkey functions (second softkey level). The basic test mask itself remains unaltered, it continues to show the results last determined for performance test 1. Now another performance test can be performed (hookflash; simulation of special functions like conference circuit with several mobile subscribers).

```
┌──────── CELL. EAMPS ────────┐
│ ┌───────────┐                │
│ │00022  HOMESYSTEM│ RESULTS  │
│ │2135551212 MIN-NO│          │
│ │0333 FOCC CHANNEL│ MIN:  2135551212│
│ └───────────┘     SN :  8200F9C9│
│  CALL FROM CELL         130/00/063945│
│  CALL FROM MOBILE  SCM:  1     0│
│            Flash-No.:  0895632│
│ ┌───────────┐                │
│ │0289  FVC CHANNEL│ ERR:   +0.49 kHz│
│ │5970 Hz  SAT-FREQ│ DEV:   +2.58 kHz│
│ │3     POWER LEVEL│        -2.56 kHz│
│ └───────────┘     PWR:    138 mW│
│                              │
│  RF-Level: - 60.0 dBm        │
└──────────────────────────────┘
```
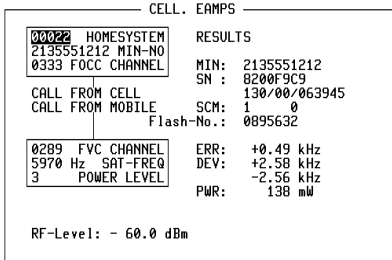
Fig. 10.2: Basic test mask, 2nd softkey level.

-ETC-   AUTO   HOOKFLSH REGISTER RETURN

Meaning of softkeys

(ETC)	Allocates 1st softkey level again to basic test mask.
(AUTO)	Calls up AUTO-HANDOFF mask (performance test 3).
(HOOKFLSH)	"Hookflash" test.
(REGISTER)	Starts registration call.
(RETURN)	Returns to OPTION CARD mask.

Test procedure step by step

"Hookflash" test.

The "Hookflash" test can only be performed if MS is in traffic channel.

1. Press (HOOKFLSH).
   It produces prompt `Dial number, then "Send"` in status line.

2. Enter call number on test item (ETACS-UK mobile phone) and "Send" it by pressing "Send" key.

   Subscriber number from MS will be shown in result field `Flash-No`.

Registration Call

1. Press (REGISTER).

   The communication monitor sends a registration call to the mobile. As an answer, the mobile sends confirmation with the mobile identification number (`MIN` result field), electronic serial number (`SN` result field) and station class mark (`SCM` result field).

   If the mobile fails to respond to the registration call, halt the test with (STOP), enter a new, valid home system number and start the test again.

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Performance test 3 (AUTO-HANDOFF mask)

Entries

The menu AUTO-HANDOFF provides automatic testing of a mobile radio on different predefined traffic channels. Only the function marked by the scroll variable X is selected (for example X Channels).

Channels	Entry of up to six traffic channels (channels on which the mobile radio is to be tested automatically).
Auto Incr.	Input of first and last channel number along with the stepping increment (the mobile radio is automatically tested on the corresponding channels).
PRINT	If selected by the scroll variable X the actual measured results are output to the printer.
Cont	For continuously repeated test select this function using the scroll variable X.

Result display

Act. Channel	Number of presently actual traffic channel.
Err	Frequency offset of mobile radio's transmitter on actual traffic channel.
Pwr	Mobile radio output power on actual traffic channel.

Fig. 10.3: AUTO-HANDOFF mask.

```
┌──────────── CELL. EAMPS ────────────┐
│ Conditions for AUTO-HANDOFF          │
│ X Channels      0256 0054 0014 0040 0050 0060 │
│                                      │
│   Auto Incr.    0100 First Channel   │
│                 0600 Last  Channel   │
│                 0100 Incr.           │
│                                      │
│   PRINT                              │
│ X Cont.                              │
│                                      │
│                                      │
│ Act. Channel 0289  Err :             │
│                    Pwr :             │
│                                      │
└──────────────────────────────────────┘

  ■ SINGLE STEP ■   ■ AUTO-HANDOFF ■   ■ RETURN ■
```

Meaning of Softkeys

(SINGLE STEP)	The measurement is stopped when the result of the actual channel is available. Depressing the softkeys will advance to next predefined channel and display the measuring result.
(AUTO-HANDOFF)	Test routine runs to completion without interruption.
(RETURN)	Leads back to basic mask.

During a test cycle the routine can be halted by the softkey (STOP) (interruption of the measurement). If the offset measurement exceeds the limits on any channel the test routine is stopped automatically.

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System specifications

Number of channels	898
Control channels	
System A	333 to 313
System B	334 to 354
Traffic channels	
System A	312 to 1 (AMPS)
System B	355 to 666 (AMPS)
System A/B	667 to 866 and 991 to 1023 (EAMPS)
Transmit frequencies of base stations:	
Channels 1 to 866	870.0300 MHz to 895.9800 MHz
Channels 991 to 1023	869.0400 MHz to 870.0000 MHz
Transmit frequencies of mobile stations:	
Channels 1 to 866	825.0300 MHz to 850.9800 MHz
Channels 991 to 1023	824.0400 MHz to 825.0000 MHz
Channel spacing	30 kHz
Duplex offset	45 MHz
Signaling rate	10 000 $\pm$1 bit/s
Signaling deviation	$\pm$8 kHz

Remaining specs according to:

AMPS (Advanced Mobile Phone Service):

EIA INTERIM STANDARD IS-3-B

Specs can be ordered from:
EIA Engineering Department
2001 Eye Street, NW
Washington DC 20006
USA

Lifeline

The chronological lifeline tells you what modifications have been made to the software (SW) and the operating instructions. After a software update the lifeline helps you to find out quickly about all major changes (see code) in the updated operating instructions that are supplied.

Code: C = Correction, IN = Important Note, NF = New Feature

SW	Doc. Version	Δ pages	Code	Changes
2.30	9211-230-A	10-3	NF	Now with SCM.
	9401-230-A	all	NF	Manual layout changed to small format.
2.40	9407-240-A	10-7	NF	Now with registration call.
		10-3	NF	SCM information extended (analog/dual mode).
2.41	9409-241-A	no	C	Bug fixes.
2.50	9504-250-A	10-5	NF	Result field No displays up to 32 digits (formerly 16).
		no	C	Release procedure now for all SAT frequencys ok.

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