NAMPS

Software Option   897 903

Operating Instructions

22_namps   Doc. Version: 9601-110-A

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Performance test 1 (basic test mask, 1st softkey level)

Entries

HOMESYSTEM	Homesystem number.
MIN-NO	Mobile identification number.
FOCC CHANNEL	Forward control channel number.
XXXXY FVC CHANNEL	Forward voice channel number. XXXX : channel number; Y : L = lower channel (M-10kHz), M = middle channel, U = upper channel (M + 10 kHz).
DSAT	DSAT-sequence (scrollvariables DSAT#0...DSAT#6).
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	Serial number of mobile (hexadecimal code).
SN	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).
No.	Dialed number.
EP	Extended Protocol. 0 = Mobile is not NAMPS capable 1 = Mobile is NAMPS capable
ERR	Frequency error of mobile transmitter.
DEV	Mobile frequency deviation.
PWR	Mobile output power.

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Basic test mask (1st softkey level)

```
┌──────── CELL. NAMPS ─────────┐
│ ┌───────────────┐            │
│ │00022  HOMESYSTEM│  RESULTS │
│ │8137709000 MIN-NO│          │
│ │0334 FOCC CHANNEL│  MIN:    │
│ └───────────────┘  SN :     │
│                              │
│  CALL FROM CELL              │
│  CALL FROM MOBILE   SCM:     │
│                     No.:     │
│                              │
│                     EP :     │
│ ┌───────────────┐            │
│ │0727U FVC CHANNEL│          │
│ │#0    DSAT       │  ERR:    │
│ │3     POWER LEVEL│  DEV:    │
│ └───────────────┘            │
│                     PWR:     │
│  RF-Level: - 60.0 dBm        │
└──────────────────────────────┘
```

Fig. 10.1: Basic test mask, 1st softkey level.

```
-ETC-   EXECUTE  RELEASE  MOBILE   CELL.    RETURN
```

Meaning of softkeys

(ETC)   Allocates 2nd softkey level to basic test mask.

(EXECUTE)   Performs change of traffic channel, DSAT or power level.

(RELEASE)   Releases call.

(MOBILE)   Starts mobile initiated call.

(CELL.)   Starts cell initiated call.

(RETURN)   Returns to OPTION CARD mask.

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.

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 DSAT sequence 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.

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
SN : (2nd line)	RESULt3
No.:(1st line)	RESULt4
SCM:	RESULt5
EP:	RESULt6
No.:(2nd line)	RESULt7

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Performance test 2 (basic test mask, 2nd softkey level)

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).
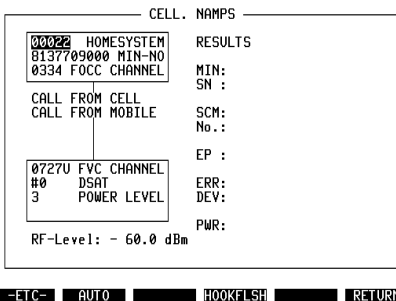
Basic test mask (2nd softkey level)

Fig. 10.2: Basic test mask, 2nd softkey level.

```
                ┌───── CELL. NAMPS ─────┐
                │ 00022  HOMESYSTEM   RESULTS
                │ 8137709000 MIN-NO
                │ 0334 FOCC CHANNEL   MIN:
                │                     SN :
                │ CALL FROM CELL
                │ CALL FROM MOBILE    SCM:
                │                     No.:
                │
                │                     EP :
                │ 0727U FVC CHANNEL
                │ #0    DSAT          ERR:
                │ 3     POWER LEVEL   DEV:
                │
                │                     PWR:
                │ RF-Level: - 60.0 dBm
                └───────────────────────┘
```

| -ETC- | AUTO | | HOOKFLSH | | 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 can only be performed if MS is in traffic channel. (HOOKFLSH) produces prompt "`Dial number, then "Send"`" in status line. Enter call number on test item and "Send" it by pressing "Send" key.
(RETURN)	Returns to OPTION CARD mask.

Result display

`Flash-No.`   Subscriber number from MS.

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 XXXXY   Entry of up to six traffic channels (channels on which the mobile radio is to be tested automatically). XXXX = Channel number. Y = scroll variable L, M or U (L = lower channel, M = middle channel, U = upper channel).

Auto Incr.   Input of first and last channel number along with the stepping increment (the mobile radio is automatically tested on the corresponding channels). All increment variations of upper middle and lower channel are possible.

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. NAMPS ───────────

Conditions for AUTO-HANDOFF

X Channels  0100L 0995U 0500M 1020L 0700U 0050M

  Auto Incr.     0020 First Channel
                 0798 Last  Channel
                 0101 Incr.   all     Channels

  PRINT
  Cont.



Act. Channel 0100L Err :    +0.27 kHz
                   Pwr :      167 mW
```

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

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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.

Error messages

```
┌──────────── CELL. NAMPS ────────────┐
│ ┌─────────────────┐  RESULTS         │
│ │00022  HOMESYSTEM│                  │
│ │8137709000 MIN-NO│  MIN: 8137709000 │
│ │0334 FOCC CHANNEL│  SN : C39FE4B9   │
│ │                 │       195/39/255161│
│ │ CALL FROM CELL  │  SCM: 3 D E      │
│ │ CALL FROM MOBILE│  No.: 1234567890123456│
│ │                 │       7890       │
│ │                 │  EP : 1          │
│ │ 0100L FVC CHANNEL│                 │
│ │ #0    DSAT      │  ERR:  +0.33 kHz │
│ │ 4     POWER LEVEL│  DEV:  +0.95 kHz │
│ │                 │       -0.79 kHz  │
│ │                 │  PWR:    71 mW   │
│ │ RF-Level: - 60.0 dBm               │
│ └─────────────────┘                  │
└──────────────────────────────────────┘
ERROR: ACK Timeout
 -ETC-   EXECUTE  RELEASE  MOBILE  CELL.   RETURN
```

ACK Timeout   No ACK telegram could be decoded.
                  When changing the traffic channel, the DSAT sequence or
                  the power level, a telegram is sent to the tested mobile. It
                  should respond with an ACK telegram. If STABILOCK does
                  not receive the ACK telegram within 750 ms, then the test
                  is halted.
                  If the traffic channel is to be changed, and the mobile
                  performs the change, then STABILOCK switches to the
                  new channel as well. Otherwise it prompts the error mess-
                  age Error: 0200M->... in the line above the softkeys.

DSAT Timeout   Selected DSAT telegram could not be decoded.
                  When changing the traffic channel or the DSAT sequence,
                  after a successful attempt to perform the change,
                  STABILOCK checks whether the mobile transmits the cor-
                  rect DSAT sequence. If STABILOCK cannot identify the
                  DSAT within 2 s, then the test is halted.

0200M->1020L   Channel change not performed.
Timeout   When changing the traffic channel a telegram is trans-
                  mitted to the tested mobile. It should respond with an ACK
                  telegram. If STABILOCK does not receive the ACK tele-
                  gram within 750 ms, then the test is halted.

☞ If these timeout errors occur frequently, try activating the MUTE function of the
tested mobile (ie deactivate the mobiles microphone).

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System specifications

Number of channels	2496

Control channels
System A	313 to 333
System B	334 to 354

Traffic channels
Channels 1L to 799L
Channels 1Mto 799M
Channels 1U to 799U

Channels 991L to 1023L
Channels 991M to 1023M
Channels 991U to 1023U

Transmit frequencies
of base stations:
Channels 1L to 799L	870.020 MHz to 893.960 MHz
Channels 1M to 799M	870.030 MHz to 893.970 MHz
Channels 1U to 799U	870.040 MHz to 893.980 MHz
Channels 991L to 1023L	869.030 MHz to 869.990 MHz
Channels 991M to 1023M	869.040 MHz to 870.000 MHz
Channels 991U to 1023U	869.050 MHz to 870.010 MHz

Transmit frequencies
of mobile stations:
Channels 1L to 799L	825.020 MHz to 848.960 MHz
Channels 1M to 799M	825.030 MHz to 848.970 MHz
Channels 1U to 799U	825.040 MHz to 848.980 MHz
Channels 991L to 1023L	824.030 MHz to 824.990 MHz
Channels 991M to 1023M	824.040 MHz to 825.000 MHz
Channels 991U to 1023U	824.050 MHz to 825.010 MHz

Channel spacing	10 kHz
Duplex offset	45 MHz
Signaling rate	10 000 $\pm$1 bit/s (CC)
	200 bit/s (VC)
	100 bit/s (VC)
Signaling deviation	$\pm$8 kHz (CC)
	700 Hz (VC)

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
1.00	9212-100-A	all		First edition of manual.
1.00	9401-100-A	all	NF	Layout changed to small pages.
1.10	9601-110-A	all	NF	Adapted to version 1.10, which supports NAMPS protocol only.

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