FEX

RF Frequency Range Extension 2.3 GHz

Hardware Option   248 295

Operating Instructions

Doc. Version: 9703-100-A

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Supplement to operating instructions; file under Chapter 9

Content

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Hardware/Software Requirements

Modification of a STABILOCK 4031 or STABILOCK 4032 must be made at the plant together with all necessary hardware and software updates.

Fig. 9.1:
The HW-REVISIONS mask shows the version numbers of the FEX hardware option.

```
───────── HW-REVISIONS ─────────
Module                            Hardware-Revision

10 HOST-MCU              :           – 1 –
10 MEMCARD-IFC           :           – 2 –
 9 CRT-MCU               :           – 3 –

 7 RF/AF-MCU             :           – 1 –
 6 IFC-MCU               :           – 0 –
 6 DIG-MCU      DECT     :           – 2 –
 5  DEMOD-DSP            :           – 0 –
 5  MOD-DSP              :           – 0 –
 6  RS-232               :           – 1 –


   FEX Duplex            :           – 9 –
   FEX RX unit           :           – 1 –
   FEX TX unit           :           – 0 –


               RETURN
```

An entry of -8- means, that the Communication Test Set is equipped with an updated older hardware. An entry of -9- shows, that the Communication Test Set is equipped with a new hardware. Both the updated and the new hardware have the same functions.

☞ **Note:** The FEX hardware option will not work together with the 2nd RF generator hardware option (ordering code: 248 292/248 293).

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Testing FEX Hardware Option

The FEX hardware option is tested automatically in the SELF-CHECK.

Call up the SELF-CHECK mask from one of the basic masks (RX, TX or DUPLEX) by

$\boxed{\text{AUX}}$ + $\boxed{\text{DEF.PAR.}}$ + $\boxed{\text{STATUS}}$ + $\boxed{\text{HW-REVISIONS}}$ + $\boxed{\text{SELF-CHECK}}$.

```
┌──────── SELF-CHECK ────────┐
│   Power Supply        :    │
│ 1 AF Detector         :    │
│ 3 IF-UNIT             :    │
│ 4 Mod Generator A     :    │
│ 5 Mod Generator B     :    │
│ 7 Slave Computer      :    │
│ 9 Monitor Control     :    │
│   Output-Unit         :    │
│   UHF-Synthese        :    │
│   Dekaden Synthese    :    │
│   FM Modulator        :    │
│   RF Attenuator       :    │
│   RF Count Unit       :    │
│   RF Detector         :    │
│   Duplex + FEX        :    │
└────────────────────────────┘

 START SELF-CHECK   START LED-TEST        RETURN
```

Fig. 9.2:
In the `Duplex + FEX` entry of the SELF-CHECK mask you can check whether the FEX hardware option works correctly.

`ok`	Stage has responded correctly to all tests.
`failed`	Stage has responded negatively to at least one test.
`not installed`	No FEX installed in this Communication Test Set.
`related test failed`	FEX cannot be tested because another stage is defective.

Differences from Standard Set

The FEX hardware option expands the range of the Communication Test Set for RX and TX measurements by the frequency range 1 through 2.3 GHz. This means that systems like DCS 1800/1900, DECT, etc can be tested (if the Communication Test Set is equipped with the corresponding hardware).

All functions of the Communication Test Set remain unaltered. The specifications of the FEX hardware option apply in the frequency range between 1 and 2.3 GHz, otherwise those of the Communication Test Set continue to apply.

Technical Data

Receiver test

Carrier frequency

RF frequency range	1.0 to 2.3 GHz
Resolution	1 kHz
Accuracy	like reference oscillator

Output level

RF socket	−20 to −115 dBm
RF DIRECT socket	0 to −122 dBm
Resolution	0.1 dBm
Level error into 50 Ω (1.0 to 2.0 GHz)	1.5 dB
VSWR (50 Ω) RF socket	< 1.1

Transmitter test

RF frequency range	1.0 to 2.0 GHz
Resolution	10 Hz
Input level RF socket	0.1 mW to 125 W
Measurement error	like reference oscillator $\pm$10 Hz
Frequency measurement min. level −5 dBm	1.0 to 2.0 GHz

RF power measurement (broadband)

RF frequency range	1.0 to 2.0 GHz
Input level	1 mW to 125 W
Resolution	
P < 1 W	1 mW
P < 10 W	10 mW
P $\geq$ 10 W	100 mW
Measurement error P > 200 mW	< 14 % + 1 digit
Selective power	< 3 dB

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Synthesizer

Spectral purity
Phase noise (25 kHz offset)

f < 2 GHz	< –105 dBc/Hz
f ≥ 2 GHz	< –100 dBc/Hz

Residual FM

f < 2.0 GHz	16 Hz (rms, CCITT weighted)
f ≥ 2.0 GHz	20 Hz (rms, CCITT weighted)

Spurious

f < 2.0 GHz	–49 dBc
f ≥ 2.0 GHz	–43 dBc

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

Doc. Version	Δ pages	Code	Changes
9703-100-A	no		First edition

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