Assembly Instructions

GSS

Grundig SAT Systems

Head-end Receiver Modulator

HRM 326/4

Contents

1   Safety regulations

- Assembly, installation and servicing should be carried out by authorised electricians.
- Switch off the operating voltage of the system before beginning with assembly or service work or pull out the mains plug.
- Do not perform installation and service work during thunderstorms.
- Install the system so it will not be able to vibrate…
  - in a dust-free, dry environment
  - in such a manner that it is protected from moisture, fumes, splashing water and dampness
  - somewhere protected from direct sunlight
  - not within the immediate vicinity of heat sources
  - in an ambient temperature of -20 °C to +50 °C.
- Ensure that the head-end station is adequately ventilated. Do not cover the ventilation slots.
- Beware of short circuits
- No liability is accepted for any damage caused by faulty connections or inappropriate handling.
- Observe the relevant standards, regulations and guidelines on the installation and operation of antenna systems.
- Earth the SAT receiver in accordance with DIN EN 50083-1 / 60728-11 and VDE 0855 (earthed, equipotential bonding rail).
- **For further information please read the assembly instructions for the head-end station used.**

Take action to prevent static discharge when working on the device.
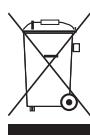
Electronic devices should never be disposed of in the household rubbish. In accordance with directive 2002/96/EC of the European Parliament and the European Council from January 27, 2003 which addresses old electronic and electrical devices, such devices must be disposed of at a designated collection facility. At the end of its service life, please take your device to one of these public collection facilities for proper disposal.

2 General information

2.1 Scope of delivery

1 HRM 326/4 cassette
1 CD (assembly instructions)

2.2 Meaning of the symbols used

⚠ Important note
—> General note
• Performing works

2.3 Technical specifications

The requirements of the following EU directives are met:
73/23/EEC, 89/336/EEC
The product fulfils the guidelines and standards for CE labelling.

HF input:

Input frequency range:	87.5 … 108.0 MHz
Input level:	50 … 80 dBµV
Channel spacing:	25 kHz
Input impedance	75 Ω

HF-Output:

Output frequency range:	87.5 … 108.0 MHz
Output level:	typ. 98 dBµV
Channel spacing:	50 kHz
Output impedance:	75 Ω

Connections:

HF input:	IEC socket
HF output:	IEC socket
10-pin connector	for all supply voltages and for the I^2C bus.

2.4 Description

The cassette contains four FM-FM converters. The FM signals received are mixed to IF level and then transformed to a free tunable output frequency in the range of 87.5...108 MHz. The technical data of the four converters are equal. The four converted signals are combined by a combiner and then passed to the cable network via the HF output of the cassette and the HF output collector of the head-end station.

The four converters of the cassette are indicated as A, B, C and D in the display. At the factory, the output levels of the four converters are preset to the same value. The common output level (A/B/C/D) of the quadruple cassette can be adjusted at the HF output collector of the head-end station.

The software version of the control unit appears on the two-line LC display after switching on the head-end station.

The cassette is intended for operation in the following head-end stations:
– STC 1200
– STC 316
– STR 19-8
– PST 19-1

2.4.1 Software query

If necessary, you can activate the indication of the software version of the control unit manually:
• Press any two keys on the control unit of the head-end station simultaneously until the display goes dark and the software version, e.g. "**V 40**", is displayed.

3 Installation

3.1 Installing the cassette in the head-end station

⚠ – Ensure the head-end station is mounted so it will not be able to vibrate. Avoid, for example, mounting the head-end station onto a lift shaft or any other wall or floor construction that vibrates in a similar way.
  – Before installing or changing a cassette unplug the power cable from the mains power socket.

- Remove the fastening screws ① of an unoccupied slot from the bracket of the head-end station.
- Insert the cassette in this slot and push it into the housing.
- Align the cassette and apply slight pressure to connect it to the connections of the board and the HF bus bar.
- Fasten the cassette with the ① screws.
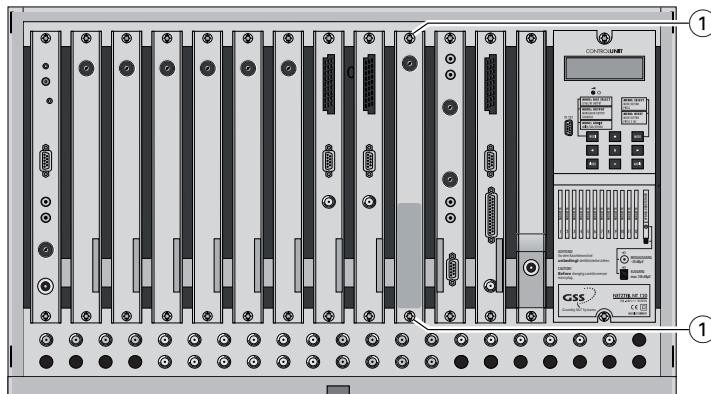
3.2 EMC regulations

⚠️ **To comply with the current EMC regulations, it is necessary to connect the lines leading in and out of the head-end station using cable terminals. When mounting the cassette in an STR 19-8 head-end station which is installed in a 19" cabinet, make sure the connections leading in and out for the 19" cabinet are made using cable terminals.**
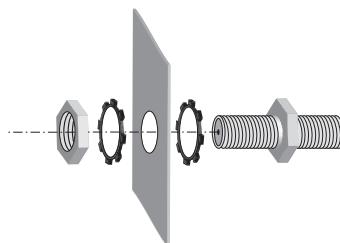
• Insert the required number of cable terminals in the openings provided in the head-end station or in the 19" cabinet.

—> Cable terminals are not included in the scope of delivery.

⚠️ Tighten the nut on the cable terminals until the teeth on the lock washer have penetrated the exterior coating and a good connection is made between the housing and cable terminal.

3.3 Connecting the cassette
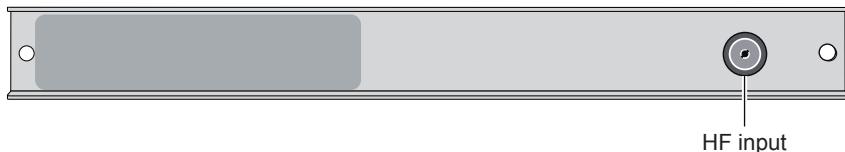
HF input

• Connect the HF input cable to the "**HF input**" socket of the cassette.

4   The control panel at a glance

4.1   Menu items

Program the cassette using the buttons on the control unit of the head-end station. The two-line display of the control unit then shows the menus.

Use the **MODE** key to select the following main menu items:

– Cassette / Channel strip
– Output frequency
– Input frequency


```
BE–Remote              V 40

please  wait . . .
```

MODE: BOX SELECT
LEVEL/RF OUTPUT

MODE: OUTPUT
MODULATOR OUTPUT
CHANNELS

MODE: AUDIO
MAIN/SUB/STEREO

MENU: SELECT
MODE BUTTON
PRESS

MENU: RESET
MODE BUTTON
PRESS 2 SEC

RS 232

MULTI   +   MODE
◄   M   ►
VIDEO   –   AUDIO
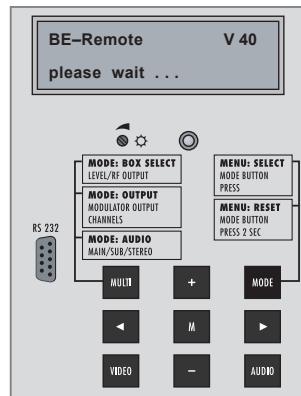
4.2   Control panel

– The key pad on the head-end station is used to scroll through the menus step-by-step:

MODE   scrolls forward through the menu.

◄/**►**   select parameters in the menus.

+/**−**   set values, initiate actions.

MULTI   selects sub-menus.

M   saves all entries.

MULTI   +   MODE
◄   M   ►
VIDEO   –   AUDIO

– The parameters to be set are underlined (cursor).

5   Programming

5.1   Programming procedure

```
Ein/On ──→  ┌─────────────────────────┐
            │ BE–Remote        V 40   │
            │                         │
            │ Please wait ...         │
            └─────────────────────────┘
                        │
                   ┌─────────┐
                   │ t > 10 s│
                   └─────────┘
                        │
            ┌─────────────────────────┐        ┌─────────────────────────┐
            │ Box 1A        FM – FM   │  + ...> │ Box 2        .............│
            │                         │         │                         │
            │ 87 – 108 MHz      UKW   │  - <... │ ......              .....│
            └─────────────────────────┘        └─────────────────────────┘
                        │                                              A
                     ┌──────┐
                     │ MODE │
                     └──────┘
                        │
◄ / ►  + / −  ┌─────────────────────────┐          ┌─────────────────────────┐
Frequenzeinstellung │ Bx 1A        OUTPUT │  MULTI   │ 100.00    Bx    102.00  │
Frequency setting   │                     │ <──────> │                         │
             │ 100.00 MHz          │          │ 104.00    1     106.00  │
             └─────────────────────────┘          └─────────────────────────┘
                        │
                     ┌──────┐
                     │ MODE │
                     └──────┘
                        │
◄ / ►  + / −  ┌─────────────────────────┐   < –|   unterhalb / below
Frequenzeinstellung │ Bx 1A         INPUT │     |    optimal
Frequency setting   │                     │   |+ >   oberhalb / above
             │ 97.700 MHz   <– I +>│
             └─────────────────────────┘
                   M   ┌──────┐                                        A
                       │ MODE │
                       └──────┘
```
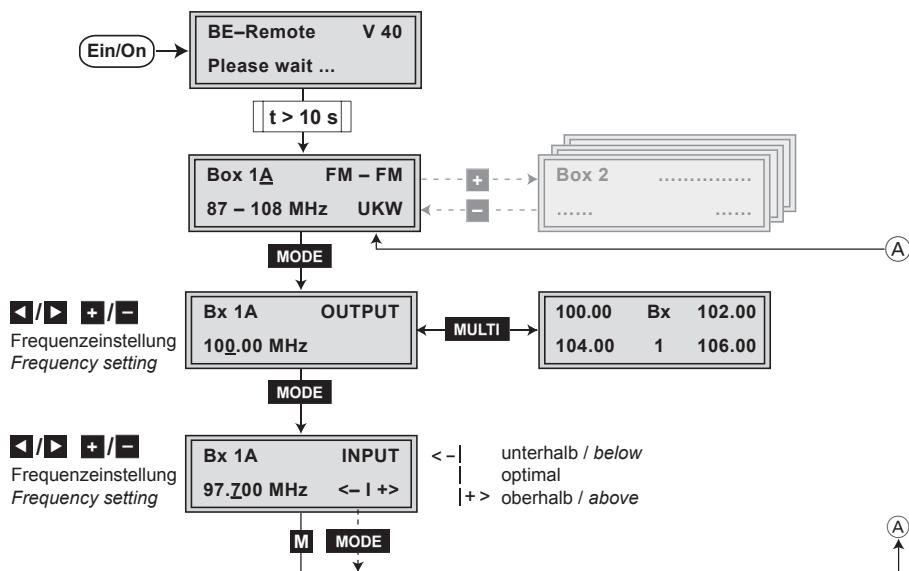
5.2 Programming the cassette

—> Pressing the **MODE** button for longer than 2 seconds cancels the pro-
gramming procedure. This takes you back to the program item "Selecting
the cassette / channel strip" from any menu. If another cassette is selected
by pressing the buttons **+** /**−** any entries that have not been saved are
reset to the previous settings.

—> Entries in the menus can be saved by pressing the **M** key. You are taken
back to the "Selecting the cassette / channel strip" menu item.

• Switch on the head-end station
—> The display shows the software version (e.g. **V 40**)
—> The processor reads the cassettes' data
(approx. 10 seconds).

Ein/On	→	BE–Remote V 40
		Please wait ...

t > 10 s

Selecting the cassette / channel strip

Box 1**A** FM – FM		+		Box 2 ....
87 – 108 MHz UKW		−		....

MODE   (A)
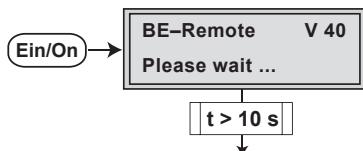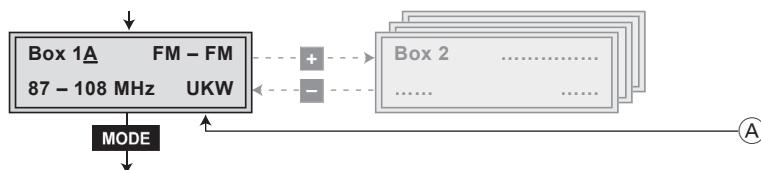
• If necessary select the cassette you want to program (e.g.
Box 1) or the channel strip to be programmed (**Box 1 A**,
1 B, **1 C**, **1 D**) by repeatedly pressing the **+** /**−** buttons.
—> The display shows e.g. the menu "**Box 1A   FM – FM**":
"**Box 1**"   stands for slot 1
"**FM – FM**"   Type of cassette
"**87 – 108**"   adjustable frequency range

• Press the **MODE** button.
—> The "Setting the output frequency" – "**OUTPUT**" menu
is activated.

Setting the output frequency
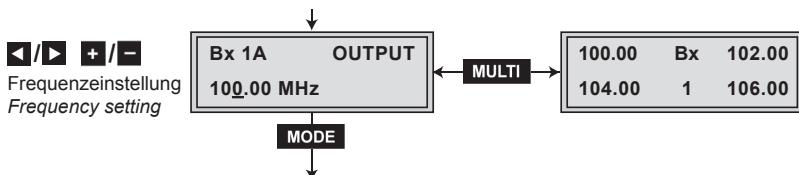
◀/▶ ➕/➖

Frequenzeinstellung
Frequency setting

```
┌─────────────────────────┐          ┌─────────────────────────┐
│  Bx 1A        OUTPUT     │  ◀ MULTI ▶ │  100.00    Bx   102.00   │
│  100.00 MHz              │          │  104.00     1   106.00   │
└─────────────────────────┘          └─────────────────────────┘
```

MODE

- Use ◀/▶ to position the cursor under the digit of the frequency displayed to be set.
- Press ➕/➖ to set the respective digit of the output frequency wished.
- Repeat the procedure by the quantity of the digits to be set.
    —> To get a better overview, it is possible to display the 4 output channels of the cassette simultaneously. For this press the MULTI button in the "**OUTPUT**" menu.

```
        A              B
┌─────────────────────────┐
│  100.00    Bx   102.00   │
│  104.00     1   106.00   │
└─────────────────────────┘
        C              D
```

⚠ It is necessary to keep a minimum distance of 300 kHz between the FM output frequencies used.

- Press the MODE button.
    —> The "Setting the input frequency" – "**INPUT**" menu is activated.

Setting the input frequency
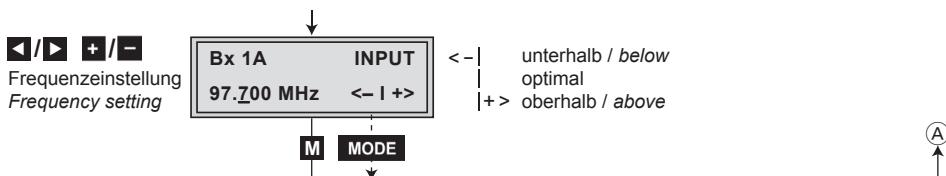
◄ / ► ┼ / ─
Frequenzeinstellung
Frequency setting

```
Bx 1A        INPUT       < – |    unterhalb / below
                                  |         optimal
97.700 MHz   <– | +>      | + >    oberhalb / above
```

M   MODE   (A)

- Use ◄ / ► to position the cursor under the digit of the frequency displayed to be set.
- Press ┼ / ─ to set the respective digit of the input frequency wished.
- Repeat the procedure by the quantity of the digits to be set.

    —> Indications in the display:
       " < – | "   the input frequency is set too low.
       " | "   the input frequency is set correctly.
       " | + > "   the input frequency is set too high.

- If necessary repeat the setting until " | " is shown in the display.

Saving settings

- Press the M button.
    —> The settings are saved.
    —> Back to the "Selecting the cassette / channel strip" menu via connection (A) (page 10).
    —> By pressing the MODE button, you will be returned to the menu item "Selecting the cassette / channel strip" via connection (A) **without** saving the programmed data (page 10).

6   Final procedures

⚠️ **After installing the head-end station, upgrading accessories or installing cassettes it is necessary to tighten all cable connections, cable terminals and cover screws in order to maintain compliance with current EMC regulations securely.**

- Securely tighten the cable connections using an appropriate open-ended spanner.
- Measure the output levels of the other cassettes and tune them to a uniform output level using the appropriate level controls or software dependent on the head-end station used. Please regard the assembly instructions of the respective head-end station.
    - —> In order to prevent interference within the head-end station and the cable system, the output levels of the digital cassettes must be set lower by 8 dB compared to analogue cassettes.
- Mount the front cover (s. assembly instructions of the head-end station).

Service:

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