MANUAL

Signal Distribution Unit

SDU/EFB/MP
SDU/EF/MP

11th December 2015

Meinberg Radio Clocks GmbH & Co. KG
Front view (Frontansicht) Signal Distribution Unit

ENGLISH
1. Power LED / operating mode (green)
2. Status LEDs: Signal, Alarm

DEUTSCH
1. Power LED / Betriebsanzeige (grün)
2. Status LEDs: Signal, Alarm
ENGLISH
1. Power supply connector
2. 2.048MBit/s outputs, RJ45 / BNC
3. 2.048MBit/s input, RJ45 / BNC
4. Error relay output, 3pin. DFK

DEUTSCH
1. Spannungsversorgung
2. 2,048MBit/s Ausgänge, RJ45 / BNC
3. 2,048MBit/s Eingang, RJ45 / BNC
4. Störmelderelaisausgang, 3pol. DFK
# Table of Contents

1 Imprint .......................... 1

2 Safety Instructions for Building-in Equipment .......................... 2
   2.1 Used Symbols ................................................................. 3

3 The Modular System SDU .......................................................... 4

4 Distribution SDU/EFB .................................................................. 5

5 Attachment: Technical Information ................................................. 6
   5.1 Technical Specifications SDU .................................................. 6
   5.2 Rear Panel Connectors ......................................................... 6
   5.3 Power connect ..................................................................... 7
   5.4 2.048Mbit/s E1-Mode RJ45 Output .............................................. 7
   5.5 2.048Mbit/s E1-Mode RJ45 Input ............................................. 7
   5.6 2.048 Mbit/s Output ............................................................. 8
   5.7 2.048 Mbit/s Input ............................................................... 8
   5.8 Error Relay ......................................................................... 9

6 Declaration of Conformity ............................................................. 10
1 Imprint

Meinberg Funkuhren GmbH & Co. KG
Lange Wand 9, 31812 Bad Pyrmont - Germany

Phone:  + 49 (0) 52 81 / 93 09 - 0
Fax:    + 49 (0) 52 81 / 93 09 - 30

Internet: http://www.meinberg.de
Mail:    info@meinberg.de

Date: 2015-12-11
2 Safety Instructions for Building-in Equipment

This building-in equipment has been designed and tested in accordance with the requirements of Standard IEC60950-1 "Safety of Information Technology Equipment, including Electrical Business Equipment".

During installation of the building-in equipment in an end application (i.e. rack) additional requirements in accordance with Standard IEC60950-1 have to be taken into account.

- The building-in equipment is a class 1 - equipment and must be connected to an earthed outlet (TN Power System).
- The building-in equipment has been evaluated for use in office environment (pollution degree 2) and may be only used in this environment. For use in rooms with a higher pollution degree more stringent requirements are applicable.
- The building-in equipment may not be opened.
- Protection against fire must be assured in the end application.
- The ventilation opening may not be covered.
- The equipment/building-in equipment was evaluated for use in a maximum ambient temperature of 40°C.
- For safe operation the building-in equipment must be protected by max 16 A fuse in the power installation system.
- Disconnection of the equipment from mains is done by pulling the mains plug.
# 2.1 Used Symbols

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Symbol</th>
<th>Beschreibung / Description</th>
</tr>
</thead>
</table>
| 1   | ![Direct current](image.png) | IEC 60417-5031
Gleichstrom / Direct current |
| 2   | ![Alternating current](image.png) | IEC 60417-5032
Wechselstrom / Alternating current |
| 3   | ![Earth (ground) Terminal](image.png) | IEC 60417-5017
Erdungsanschluss / Earth (ground) Terminal |
| 4   | ![Protective Conductor Terminal](image.png) | IEC 60417-5019
Schutzleiterklemme / Protective Conductor Terminal |
| 5   | ![Caution, possibility of electric shock](image.png) | Vorsicht, Risiko eines elektrischen Schlages / Caution, possibility of electric shock |
| 6   | ![Caution, Danger](image.png) | ISO 7000-0434
Vorsicht, Risiko einer Gefahr / Caution, Danger |
| 7   | ![B2B Category](image.png) | 2002/96/EC

*This product is handled as a B2B category product. In order to secure a WEEE compliant waste disposal it has to be returned to the manufacturer.*

---

**CE marking**

This device follows the provisions of the directives 93/68/EEC.
3 The Modular System SDU

The Signal Distribution Unit SDU is a set of equipment composed of one SDU module (E1/T1) and a power supply module, all installed in a metal desktop case and ready to operate. The input/output signals of the SDU are accessible via connectors in the back panel of the case. Details of the components are described below.
4 Distribution SDU/EFB

The Board SDU was designed for the distribution of the E1/T1 signals. The input signal (E1-mode 2.048MBit/s) is distributed to 24 outputs. The signal outputs are available via RJ-45 connectors.

**Specification:**

**SDU/EFB/MP - balanced 120Ω**

- **Inputs:** 1 x 2.048MBit/s (E1-mode) input, G.703, 120 Ohm balanced via RJ-45
- **Outputs:** 24 x 2.048MBit/s (E1-mode) output, G.703, 120 Ohm balanced via RJ-45

  - **Connectors:**
    - **Input**signal 1 x RJ-45 connector
    - **Output**signal 24 x RJ-45 connector

**SDU/EF/MP - unbalanced 75Ω**

- **Inputs:** 1 x 2.048MBit/s (E1-mode) input, G.703, 75 Ohm unbalanced via BNC
- **Outputs:** 24 x 2.048MBit/s (E1-mode) output, G.703, 75 Ohm unbalanced via BNC

  - **Connectors:**
    - **Input**signal 1 x BNC connector
    - **Output**signal 24 x BNC connector
5 Attachment: Technical Information

5.1 Technical Specifications SDU

HOUSING: 19 Inch Metal desktop case
          Front panel: 1U/84HP (43.6 mm high / 426.4 mm wide)

PROTECTION RATING: IP20

POWER CONSUMPTION: 28W

INPUT VOLTAGE: 100...240VAC

INPUT FUSE: Electronic

TEMPERATURE: 0...50°C

PHYSICAL DIMENSIONS: 483 mm wide x 43.7 mm high x 285 mm deep

5.2 Rear Panel Connectors

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Signal</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>5pin. DFK male</td>
<td>100-240VAC</td>
<td>5pin. MSTB clamp</td>
</tr>
<tr>
<td>Error</td>
<td>3pin. DFK male</td>
<td>relay</td>
<td>3pin. MSTB clamp</td>
</tr>
<tr>
<td><strong>SDU/EFB/MP</strong></td>
<td><strong>2.048MBit/s Out</strong></td>
<td><strong>RJ45</strong></td>
<td><strong>balanced 120 Ω</strong></td>
</tr>
<tr>
<td></td>
<td><strong>2.048MBit/s In</strong></td>
<td><strong>RJ45</strong></td>
<td><strong>balanced 120 Ω</strong></td>
</tr>
<tr>
<td><strong>SDU/EF/MP</strong></td>
<td><strong>2.048MBit/s Out</strong></td>
<td><strong>BNC female</strong></td>
<td><strong>unbalanced 75 Ω</strong></td>
</tr>
<tr>
<td></td>
<td><strong>2.048MBit/s In</strong></td>
<td><strong>BNC female</strong></td>
<td><strong>unbalanced 75 Ω</strong></td>
</tr>
</tbody>
</table>
5.3 Power connect

Input Voltage Range: 100-240 V AC / 50 - 60Hz
100-240 V DC

Input Current: 1 Amax

Input Fuse: UL/IEC127, 250 V AC S 3.15 A

Connectors: input IEC320 AC inlet

Pin Assignment:
1: VCC - (N *)
2: not connected
3: GND (Ground)
4: not connected
5: VCC + (L *)

5.4 2.048Mbit/s E1-Mode RJ45 Output

Mode: E1-Mode
120 Ohm, balanced

Connector Type: 8P8C (RJ45)

Cable: CAT 5.0

Assignment:
Pin 1: TX Ring
Pin 2: TX Tip

5.5 2.048Mbit/s E1-Mode RJ45 Input

Mode: E1-Mode
120 Ohm, balanced

Connector Type: 8P8C (RJ45)

Cable: CAT 5.0

Assignment:
Pin 1: TX Ring
Pin 2: TX Tip
5.6 2.048 Mbit/s Output

Level: 75 Ohm
Type: 2.048 Mbit/s (E1-mode)
Connector: BNC, female
Cable: shielded coax line

5.7 2.048 Mbit/s Input

Level: 75 Ohm
Type: 2.048 Mbit/s (E1-mode)
Connector: BNC, female
Cable: shielded coax line
5.8 Error Relay

There is a relay output that is labeled "Error" on the back of the unit. This is a potential free contact, which is directly controlled. Normally, when an input signal is applied, the relay and the relay contact "NO" is active. If the input is faulty or switched off the device, the relay contact "NC" is active.

Technical Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWITCHING VOLTAGE max.:</td>
<td>125 V DC, 150 V AC</td>
</tr>
<tr>
<td>SWITCHING CURRENT max.:</td>
<td>1A</td>
</tr>
<tr>
<td>SWITCHING LOAD max.:</td>
<td>DC 30 W, AC 60 VA</td>
</tr>
<tr>
<td>SWITCHING-CURRENT UL/CSA:</td>
<td>0.46A 150 V AC, 0.46A 65 V DC, 1A 30 V DC</td>
</tr>
<tr>
<td>RESPONSE TIME:</td>
<td>ca.2ms</td>
</tr>
</tbody>
</table>

Normal Operation: CO - NO connected
Error: CO - NC connected

Signal Distribution Unit
Date: 11th December 2015
6 Declaration of Conformity

Konformitätserklärung
Doc ID: SDU/EFB/MP-2015-12-11

Hersteller
Manufacturer
Meinberg Funkuhren GmbH & Co. KG
Lange Wand 9, D-31812 Bad Pyrmont

erklärt in alleiniger Verantwortung, dass das Produkt,
declares under its sole responsibility, that the product
Problembeschreibung
Product Designation
SDU/EFB/MP

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt
to which this declaration relates is in conformity with the following standards
EN55022:2010, Class B
Limits and methods of measurement of radio interference characteristics
of information technology equipment
EN55024:2010
Limits and methods of measurement of Immunity characteristics of
information technology equipment
EN 61000-3-2:2006
Electromagnetic Compatibility (EMC)
Limitation of harmonic current emissions
EN 61000-3-3:2008
Electromagnetic Compatibility (EMC)
Limitation of voltage fluctuation and flicker in low-voltage supply systems
EN 60950-1:2006
Safety of information technology equipment
EN 50581:2012
Technical documentation for the assessment of electrical and electronic
products with respect to the restriction of hazardous substances
gemäß den Richtlinien 2014/30/EU (Elektromagnetische Verträglichkeit), 2014/35/EU (Niederspannungsrichtlinie), 2011/65/EU (Beschränkung der Verwendung bestimmter gefährlicher Stoffe) und 93/68/EWG (CE Kennzeichnung) sowie deren Ergänzungen.
following the provisions of the directives 2014/30/EU (electromagnetic compatibility), 2014/35/EU (low voltage directive), 2011/65/EU (restriction of the use of certain hazardous substances) and 93/68/EEC (CE marking) and its amendments.

Bad Pyrmont, 2015-12-11

Günter Meinberg
Managing Director