MANUAL

SDU/SIN/NET/RPS
Sinus-Signal Distribution Unit

4th December 2017
Meinberg Radio Clocks GmbH & Co. KG
ENGLISH
1. Power LEDs / operating mode (green)
2. Switch Unit - Status LEDs, Switches for Auto or Manual Mode / Input Signal 1 or 2
3. ACO Button
4. Network Connector

DEUTSCH
1. Power LEDs / Betriebsanzeige (grün)
2. Umschalteinheit - Status LEDs, Schalter für Auto- oder Manual-Modus / Eingangssignal 1 oder 2
3. ACO Taster
4. Netzwerk-Anschluss
1. Power supply connectors
2. 1 – 25 MHz sine wave outputs
3. 1 – 25 MHz sine wave inputs
4. DMC connector X1
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1 Imprint

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Date: 2017-10-27
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 50°C (40 °C by using Rubidium).
- 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>
<tbody>
<tr>
<td>1</td>
<td><img src="image1" alt="Symbol" /></td>
<td>IEC 60417-5031 Gleichstrom / Direct current</td>
</tr>
<tr>
<td>2</td>
<td><img src="image2" alt="Symbol" /></td>
<td>IEC 60417-5032 Wechselstrom / Alternating current</td>
</tr>
<tr>
<td>3</td>
<td><img src="image3" alt="Symbol" /></td>
<td>IEC 60417-5017 Erdungsanschluss / Earth (ground) Terminal</td>
</tr>
<tr>
<td>4</td>
<td><img src="image4" alt="Symbol" /></td>
<td>IEC 60417-5019 Schutzleiterklemme / Protective Conductor Terminal</td>
</tr>
<tr>
<td>5</td>
<td><img src="image5" alt="Symbol" /></td>
<td>Vorsicht, Risiko eines elektrischen Schlages / Caution, possibility of electric shock</td>
</tr>
<tr>
<td>6</td>
<td><img src="image6" alt="Symbol" /></td>
<td>ISO 7000-0434 Vorsicht, Risiko einer Gefahr / Caution, Danger</td>
</tr>
<tr>
<td>7</td>
<td><img src="image7" alt="Symbol" /></td>
<td>2002/96/EC Dieses Produkt fällt unter die B2B Kategorie. Zur Entsorgung muss es an den Hersteller übergeben werden. 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.</td>
</tr>
</tbody>
</table>

CE label
This device follows the provisions of the directives 93/68/EEC.
3 The Rackmount System SDU/SIN/NET/RPS

The SDU/SIN/NET/RPS is a distribution unit, designed to provide 16 buffered 1 – 25 MHz sine wave signals with low additive phase noise.

The SDU/SIN/NET/RPS distributes the input signals, which is provided to one or both inputs. If the unit is used in redundant mode, the internal decision logic, monitors both signals and chooses one input for distribution automatically. The input signal can also be selected manually with the switch on the front panel.

The monitor program Meinberg “Device Manager” shows the level of all inputs and outputs, status of the power supplies and the internal system temperature.
4 Attachment: Technical Information

4.1 Technical Specifications SDU/SIN/NET/RPS

**Mechanical:**
- Height: 43.7 mm
- Width: 483 mm
- Depth: 285 mm
- Rack mounts: 19-inch rack mount option
- Weight: 4.1 kg

**Environmental:**
- Operating temperature: 0 °C to 50 °C
- Storage temperature: - 20 °C to + 75 °C
- Relative humidity: max. 85% non-condensing
- Protection rating: IP30
- Operating altitude: up to 2000 m

**EMC Directives:**
- IEC/EN 61000-6-3 Generic standard emission
- IEC/EN 55032 Emission requirements
- IEC/EN 61000-6-2 Generic standard immunity
- IEC/EN 55024 Immunity characteristics

4.2 Front Panel and Rear Panel Connectors

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Signal</th>
<th>Cable / connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Front Panel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network</td>
<td>RJ45</td>
<td>Ethernet</td>
<td>CATS network cable</td>
</tr>
<tr>
<td><strong>Rear Panel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>5pin. DFK male</td>
<td>100 – 240 V AC</td>
<td>5pin. MSTB clamp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 – 240 V DC</td>
<td></td>
</tr>
<tr>
<td>X1</td>
<td>16pin DMC Connector</td>
<td>Relay / Error In</td>
<td>16pin. MSTB clamp</td>
</tr>
<tr>
<td>1 - 25 MHz Sinus In</td>
<td>BNC female</td>
<td>1 – 25 MHz sine wave, 1 – 25 MHz sine wave,</td>
<td>shielded coaxial line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– 8 to + 8 dBm</td>
<td></td>
</tr>
<tr>
<td>1 - 25 MHz Sinus Out</td>
<td>BNC female</td>
<td>1 – 25 MHz sine wave,</td>
<td>shielded coaxial line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>into 50 Ω</td>
<td></td>
</tr>
</tbody>
</table>
4.3 Power Connector

**Operational Voltage:**
- \( U_N = 100 - 240 \, \text{V} \)~
- \( I_N = 0.5 \, \text{A} \)~
- \( f_N = 50 - 60 \, \text{Hz} \)
- \( U_{\text{max}} = 90 - 254 \, \text{V} \)~
- \( f_{\text{max}} = 47 - 63 \, \text{Hz} \)

**Input Fuse:**
IEC 127, T, 2.5 A, H, 250 V AC

**Connectors:**
input IEC 320 AC inlet

**Output Current:**
- max. 10.0 A
- min. 0.15 A

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

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 PSU 2
100-200 V~, 50-60 Hz
1 2 3 4 5

 PSU 1
100-200 V~, 50-60 Hz
N~ L+/
4.4 Frequency Sine Input

Frequency: 1-25 MHz sine wave
Level: -8dBm - +8dBm
Connector: BNC, female
Cable: shielded coax line

4.5 Frequency Sine Output

Frequency: 1-25 MHz sine into 50 Ω
Connector Type: BNC female
Gain: 0 dB
Cable: coaxial, shielded data line

4.6 DMC X1 Connector

Connector Type: 10pin DMC male connector

Pin Assignment X1:
- Pin 01: REL-COM
- Pin 02: N.C.
- Pin 03: N.C.
- Pin 04: N.C.
- Pin 05: N.C.
- Pin 06: ERROR-IN-1_+
- Pin 07: GND
- Pin 08: ERROR-IN-2_+
- Pin 09: REL-NC
- Pin 10: REL-NO
- Pin 11: GND
- Pin 12: N.C.
- Pin 13: GND
- Pin 14: ERROR-IN-1
- Pin 15: GND
- Pin 16: ERROR-IN-2
5 Quick Start Guide for Initial Operation

After the SDU/SIN/NET/RPS was connected to the power supply and the network, it can be configured and monitored by using Meinberg’s Device Manager program.

The Meinberg Device Manager program can be downloaded here:

Windows:  https://www.meinbergglobal.com/download/utils/windows/mbgdevman_setup.exe
Linux:     https://www.meinbergglobal.com/download/utils/linux/mbgdevman.tar.gz

Configuration via the Network with the MEINBERG DEVICE MANAGER

After starting the ‘mbgdevman’ all devices found in the network will be shown in the main window. By selecting the icon on the left side of the entry, all network addresses can be displayed. The LED icon indicates the status of the device. After selecting the checkbox, the edit / delete buttons are activated in the top left of the window.

The upper part (center) of the window also contains the buttons ‘Edit Device’ and ‘Status’. The Edit button opens the ‘Device configuration’ window. All important settings can be made for all of the listed devices, or for the selected system:
SYSTEM SETTINGS
Switch Method  Remote Controlled / Front Panel Switch
Master Clock   Clock 1 / Clock 2
Outputs        Enabled / Disabled

SYSTEM STATUS
Switch Method  Remote / Front Panel Switch
Master Clock   Clock 1 / Clock 2
Power Supply   PSU 1 / PSU 2

SENSOR STATUS
Temperature
Voltage
With double-clicking on the device entry you can adjust the connection type (in case of an RDU unit, only the "Network" connection type is possible). Here you can also set a new password (default: mbg). By default, the DHCP service is enabled so that an IP address is assigned automatically.

If no DHCP server could be found or no IP address has been assigned via DHCP by any other reason, a fallback IP address 169.254.xxx.yyy will be set automatically (Zeroconf \(^1\)).

\(^1\)Zeroconf: If a computer configures a link local IP address, it selects an IP address between 169.254.1.0 and 169.254.254.255 by using a random number generator.
6 Declaration of Conformity

Konformitätserklärung
Doc ID: SDU/SIN/NET/RPS-2017-10-27

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

erklärt in alleiniger Verantwortung, dass das Produkt,
declares under its sole responsibility, that the product

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt
to which this declaration relates is in conformity with the following standards

EN55032:2012, 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)
Limits for 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, 2017-10-27

Günter Meinberg
Managing Director