

Frequency Combiner Unit 2

20-0041-01

Manual



Preface

The Frequency Combiner Unit 2 is used to connect RF generators and RF measuring instruments to various antennas. There are three different variants of antenna combiners, which are described later in the manual.

Revision Index

Version	Date	edited	change
1.0	21.06.2011	H. Elten	First edition

Abbreviations

Abbreviation	Description
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Table of Contents

1	Safety Instructions	4
1.1	For the delivery	4
1.2	For the commissioning and decommissioning	4
1.3	For the use	4
1.4	For the maintenance	4
1.5	For the disposal	4
1.6	For occurring damage	4
2	Overview	5
2.1	General view	5
2.2	Scope of delivery	5
2.3	Functionality	5
2.4	Interfaces	6
2.5	Technical Data	7
3	Commissioning and decommissioning	8
3.1	Assembly	8
3.2	Installation and Commissioning	8
3.3	Modifications	8
3.4	Decommissioning, Packaging, Transport, Storage	8
4	Use	9
5	Maintenance	9
6	Disposal	9
7	Appendix	10
7.1	Interface configurations	10

1 Safety Instructions

1.1 For the delivery

- Immediately check the packaging and device for transport damage.
- Do not commission a damaged device, contact the supplier.
- Properly dispose of the packaging material.

1.2 For the commissioning and decommissioning

- Carry out the assembly in accordance with the installation and assembly instructions.
- When installing the device, it must be disconnected from the mains.
- Ensure that the protective conductor of the domestic installation is properly installed.
- When assembling the device in a rack system, it must be fixed properly.
- Make sure that the possibly existing vents are not covered.

1.3 For the use

- Only operate the device within the ambient and operating conditions specified by the technical data.

1.4 For the maintenance

- Disconnect the device from the mains while carrying out service, maintenance or cleaning work.
- Only use the maintenance and cleaning products provided by the maintenance instructions.

1.5 For the disposal

- Remove the mains cable to prevent subsequent accidents.
- Properly dispose of the device.

1.6 For occurring damage

- Repairs and corrective measures must only be carried out by specialised personnel trained for this purpose. In order to do so, the device must be disconnected from the mains.

2 Overview

2.1 General view



Figure 1 Frequency Combiner Unit 2 20-0041-01, front view



Figure 2 Frequency Combiner Unit 2 20-0041-01, rear view

2.2 Scope of delivery

The scope of delivery of the device Frequency Combiner Unit 2 20-0041-01 consists of:

- Frequency Combiner Unit 2 20-0041-01

2.3 Functionality

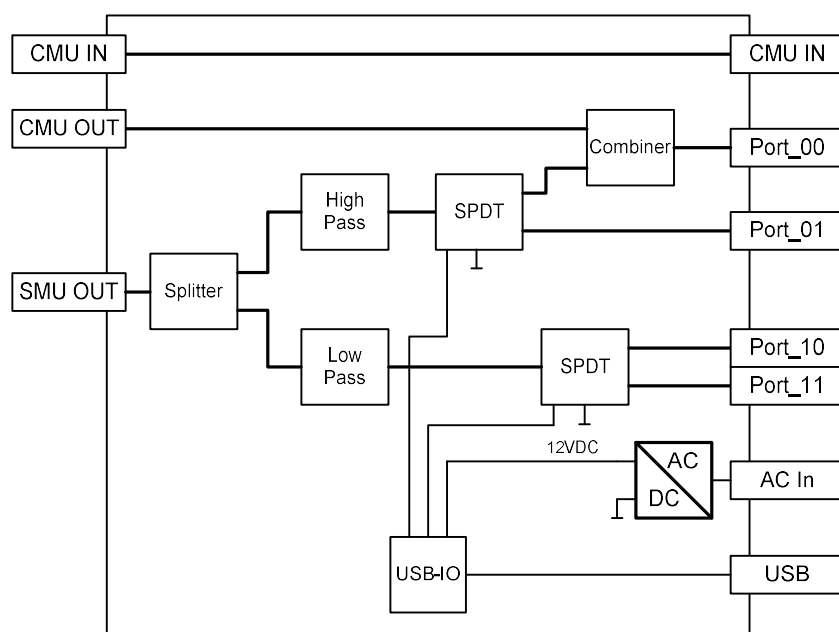


Figure 3 Block diagram of the Frequency Combiner Unit 2 20-0041-01

The Frequency Combiner Unit 2 connects the Rohde and Schwarz devices SMU200 or SMBV100 and CMU200 with a GSM rear antenna, one or two Hyperlog antennas and one or two AM / FM antennas.

The CMU_IN input on the front side is directly connected to the CMU_IN input on the rear side. The CMU_OUT input on the front side is connected with the Port_00 output on the rear side via an RF combiner. Via an RF splitter, the SMU_OUT input on the front side is placed frequency-selective on the outputs PORT_00 (via an RF combiner) or Port_10. Via an optional selector switch, both frequency-selective SMU_OUT inputs can be switched to the output PORT_01 or Port_11. Controlling the selector switches is implemented via a VXTS USB IO module.

A feedback of the selector switch positions is possible with software via the VXTS USB IO module and control lamps at the antenna combiner's front side.

To control the USB IO module via software, see "281736x-USB-IO-Module-Manual".

Allocation of inputs and outputs of the USB IO module to the ports to be switched				
	Port_00	Port_01	Port_10	Port_11
SMU_OUT	Output 0 = "0" Input 2 = "1"	Output 0 = "1" Input 3 = "1"	Output 1 = "0" Input 0 = "1"	Output 1 = "1" Input 1 = "1"

2.4 Interfaces



Figure 4 Interfaces at the front side of the Frequency Combiner Unit 2 20-0041-01



Figure 5 Interfaces at the rear side of the Frequency Combiner Unit 2 20-0041-01

The displays for the AC input voltage, the DC voltage for supplying the RF relays and switching statuses of the paths are located on the front side on the one hand, and the connections for the generators or measuring instruments on the other hand.

The connections for the power supply, the earthing bolt, the USB connection and the connections for the various antennas are located on the rear side.

2.5 Technical Data

Function	Switching of RF generators or RF measuring instruments to various antennas Switching via USB Reading back the selector switches via software Displaying the selector switches and the supply voltage via LED
Supply	100-240VAC, max. 0.8A
USB supply	USB according to USB 2.0 max. 500mA
Dimensions, weight	19-inch rack with 1U, depth 260 mm Weight: 2.7 kg
Operating conditions	Temperature: +0°C to +50°C, Humidity: 80% to 31°C, linearly decreasing to 50% at 40°C Air pressure: 1013..795hPa (0..2000m above sea level) Protection class: IP20, indoor operation only
Transport conditions	Temperature: -40°C to +70°C, Humidity 95% at max. not condensing in the original packaging
Storage conditions	Temperature: -40°C to +70°C, Humidity 95% at max. not condensing in the original packaging
CE conformity	Directive 2006/95/EC (Low Voltage) Directive 2004/108/EC (EMC) Directive 2002/96/EC (RoHS)

3 Commissioning and decommissioning

3.1 Assembly

The device is delivered in a fully assembled condition.

3.2 Installation and Commissioning

Disconnect the feeder to the system or the Frequency Combiner Unit 2 from the mains.

Firstly, assemble the Frequency Combiner Unit 2 in the 19-inch rack using the supplied fitting aids. Afterwards, connect the output and input interfaces. Please ensure that the plug connections are firmly fitted.

Now connect the feeder of the system or the Frequency Combiner Unit 2 to the mains.

3.3 Modifications

A modification of the device is not intended.

3.4 Decommissioning, Packaging, Transport, Storage

In general, disconnect the system in which the device is installed from the mains first when decommissioning. Then disconnect the device's plug connections. Afterwards, remove the device from the rack.

For packaging, either use the original packaging, or in the event of replacing the device, the packaging of the replacement device for transport or storage.

4 Use

The regular use of the Frequency Combiner Unit 2 requires no operation by the user.

5 Maintenance

The device is structured maintenance-free and requires no special maintenance. For cleaning the front panel, please use a damp, non-dripping cloth. Water, water with a drop of washing-up liquid, spirit or isopropanol can be used as cleaning agents.

6 Disposal

Please dispose of the old device in an environmentally sound way and bring it to the recycling for electrical appliances.

Please also dispose of the device's packaging in an environmentally sound way.

When replacing devices, please use the new device's packaging to return the old device.

7 Appendix

7.1 Interface configurations



Figure 3 Interfaces at the front side of the Frequency Combiner Unit 2 20-0041-01



Figure 4 Interfaces at the rear side of the Frequency Combiner Unit 2 20-0041-01

CMU IN (on the front side)		
Pin	Signal name	Function
1	CMU IN	Inner conductor of the CMU IN plug
Shield	CMU IN shield	Shield of the CMU IN plug
built-in plug connection: Huber+Suhner 34_SMA-50-0-1/111_NE		

CMU OUT		
Pin	Signal name	Function
1	CMU OUT	Inner conductor of the CMU OUT plug
Shield	CMU OUT shield	Shield of the CMU OUT plug
built-in plug connection: Huber+Suhner 34_SMA-50-0-1/111_NE		

SMU OUT		
Pin	Signal name	Function
1	SMU OUT	Inner conductor of the SMU OUT plug
Shield	SMU OUT shield	Shield of the SMU OUT plug
built-in plug connection: Huber+Suhner 34_SMA-50-0-1/111_NE		

300-2500MHz Port_00		
Pin	Signal name	Function
1	Port 00	Inner conductor of the Port 00 plug
Shield	Port 00 shield	Shield of the Port 00 plug
built-in plug connection: Huber+Suhner 37_N-SMA-50-1/1--_UE		

300-2500MHz Port_01		
Pin	Signal name	Function
1	Port 01	Inner conductor of the Port 01 plug
Shield	Port 01 shield	Shield of the Port 01 plug
built-in plug connection: Huber+Suhner 37_N-SMA-50-1/1--_UE		
This plug does not apply to antenna combiner 128 18791 and antenna combiner 128 18801.		

1-300MHz Port_10		
Pin	Signal name	Function
1	Port 10	Inner conductor of the Port 10 plug
Shield	Port 10 shield	Shield of the Port 10 plug
built-in plug connection: Huber+Suhner 37_N-SMA-50-1/1--_UE		

1-300MHz Port_11		
Pin	Signal name	Function
1	Port 11	Inner conductor of the Port 11 plug
Shield	Port 11 shield	Shield of the Port 11 plug
built-in plug connection: Huber+Suhner 37_N-SMA-50-1/1--_UE		

CMU IN (on the rear side)		
Pin	Signal name	Function
1	CMU IN	Inner conductor of the CMU IN plug
Shield	CMU IN shield	Shield of the CMU IN plug
built-in plug connection: Huber+Suhner 37_N-SMA-50-1/1--_UE		

USB		
Pin	Signal name	Function
1	VCC	+5VDC according to USB specification
2	D-	Data - according to USB specification
3	D+	Data + according to USB specification
4	GND	Ground according to USB specification
built-in plug connection: USB port type B		

Power input		
Pin	Signal name	Function
X12.1-3	L, N, PE	Power input, configuration according to IEC-60320
built-in plug connection: IEC panel plug according to IEC-60320-C14		

USB		
Pin	Signalname	Funktion
1	VCC	+5VDC gemäß USB-Spezifikation
2	D-	Data - gemäß USB-Spezifikation
3	D+	Data + gemäß USB-Spezifikation
4	GND	Masse gemäß USB-Spezifikation
eingebaute Steckverbindung: USB-Buchse Typ B		

Netzeingang		
Pin	Signalname	Funktion
X12.1-3	L, N, PE	Netzeingang, Belegung gemäß IEC-60320
eingebaute Steckverbindung: Kaltgeräteeinbaustecker nach IEC-60320-C14		