

R&S® ZN-Z15

RFFE Interface

Specifications

RFFE interface (order no. 1325.5905.02 and 1325.5905.03)	RFFE	controls up to two independent MIPI RFFE devices
	GPIO	ten output lanes with different power capability
LAN interface	RJ-45	10/100BASE-T
USB interface		USB type B plug, version 2.0
DIRECT CTRL IN interface		direct control bus input
DIRECT CTRL OUT interface		direct control bus output, power out: max. 180 mA
R&S® ZN-Z15 power input		12 V DC \pm 10 %, 1.2 A
External power supply (order no. 3586.3888.00)		R&S® TRG45A AC/DC adapter, 45 W

RFFE GPIO interface (order no. 1325.5905.02)	provides two independent MIPI RFFE busses, and ten individually configurable output lanes with different power handling capabilities		
Connector type	25-pin D-Sub female		
Ground (analog and digital)	pin 1, 3, 5, 11 and 22		

Output voltage	output configuration selected	voltage range	voltage step size	max. current
RFFE port 1 VIO	pin 2	0 to +2 V	1 mV	20 mA
RFFE port 1 DATA	pin 15	0 to +2 V	1 mV	20 mA
RFFE port 1 CLK	pin 14	0 to +2 V	1 mV	20 mA
			configurable clockrate	31.25 kHz to 52 MHz
RFFE port 2 VIO	pin 4	0 to +2 V	1 mV	20 mA
RFFE port 2 DATA	pin 17	0 to +2 V	1 mV	20 mA
RFFE port 2 CLK	pin 16	0 to +2 V	1 mV	20 mA
			configurable clockrate	31.25 kHz to 52 MHz
GPIO 1 to GPIO 8	pin 6 to pin 9, pin 18 to pin 21	-5 V to +10 V, typ. -6 V to +12 V	5 mV	20 mA
GPIO 9 and 10	pin 10 and 23	-5 V to +10 V, typ. -6 V to +12 V	5 mV	100 mA

RFFE GPIO interface (order no. 1325.5905.03)		including voltage/current measurement with switchable source resistance 32 internal ADC channels are available on the RFFE GPIO interface measuring voltage and current at each RFFE and GPIO pin simultaneously				
Voltage measurement		voltage range	resolution	accuracy ¹		
RFFE port 1 and 2, VIO, DATA and CLK	pin 2 and 4, pin 14 to pin 17	0 V to +3 V	100 µV	2 % ± 20 mV		
GPIO 1 to GPIO 10	pin 6 to pin 9, pin 18 to pin 21, pin 10, pin 23	-5 V to +10 V	100 µV	2 % ± 50 mV		
Current measurement Current values are valid for GPIO voltages -5 V to +8 V		source shunt resistor	current range	resolution	accuracy ¹	repeatability
RFFE port 1 and 2, VIO, DATA and CLK, GPIO 1 to GPIO 8	pin 6 to pin 9, pin 18 to pin 21	10 Ω	-20 mA to +20 mA	10 µA	2 % ± 200 µA	< 100 µA
		100 Ω	-2 mA to +2 mA	1 µA	2 % ± 20 µA	< 10 µA
		1 kΩ	-200 µA to +200 µA	100 nA	3 % ± 3 µA	< 1 µA
		10 kΩ	-20 µA to +20 µA	10 nA	5 % ± 500 nA	< 100 nA
		100 kΩ	-2 µA to +2 µA	1 nA	5 % ± 50 nA	< 10 nA
GPIO 9 and 10	pin 10 and 23		-100 mA to +100 mA	10 µA	3 % ± 3 mA	< 100 µA

Trigger	TRIG 1 / TRIG 2	BNC connector
	trigger level	TTL level, 3.3 V tolerant

General data		
Temperature range		
Operating temperature range		0 °C to +50 °C
	with R&S®TRG45A external power supply	0 °C to +40 °C
Permissible temperature range		-10 °C to +55 °C
Storage temperature range		-10 °C to +70 °C
Damp heat		+25 °C/+55 °C, cycl. 95 %
Short dew		-5 °C/+25 °C
Transport above sea level		4500 m
Operation above sea level		2000 m
Calibration interval		1 year
EMC	emission	in line with CISPR 11/EN 55011 group 1 class A (for a shielded test setup); instrument complies with the emission requirements stipulated by EN 55011 and EN 61326-1 class A; this means that the instrument is suitable for use in industrial environments
	immunity	in line with EMC Directive 2004/108/EC including: IEC/EN 61326-1 (immunity test requirement for industrial environment, EN 61326 table 2), IEC/EN 61326-2-1, IEC/EN 61000-3-2, IEC/EN 61000-3-3
Safety		in line with IEC 61010-1 and EN 61010-1, C22.2 No. 61010-1 and UL 61010-1
Power supply		100 V to 240 V AC, 1.05 A to 0.55 A, 47 Hz to 63 Hz, safety class I in line with VDE 411
Power consumption		< 25 VA
Certification mark		VDE, CSA (US), CE conformity mark
Dimensions	W x H x D	170 mm x 55 mm x 230 mm (6.7 in x 2.2 in x 9.1 in)
Weight	with accessories	2.0 kg (4.4 lb)
	without accessories	1.1 kg (2.4 lb)

¹ x % ± y is to be understood as x % of reading ± y.

Ordering information

Designation	Type	Order No.
RFFE Interface	R&S®ZN-Z15	1325.5905.02
RFFE Interface, including voltage/current measurements with switchable source resistance	R&S®ZN-Z15	1325.5905.03
Accessory		
Direct Control Cable	R&S®ZN-B121	1323.9290.00
RFFE Cable with Adaptors	R&S®ZN-Z25	1334.3424.02

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