Resistive components

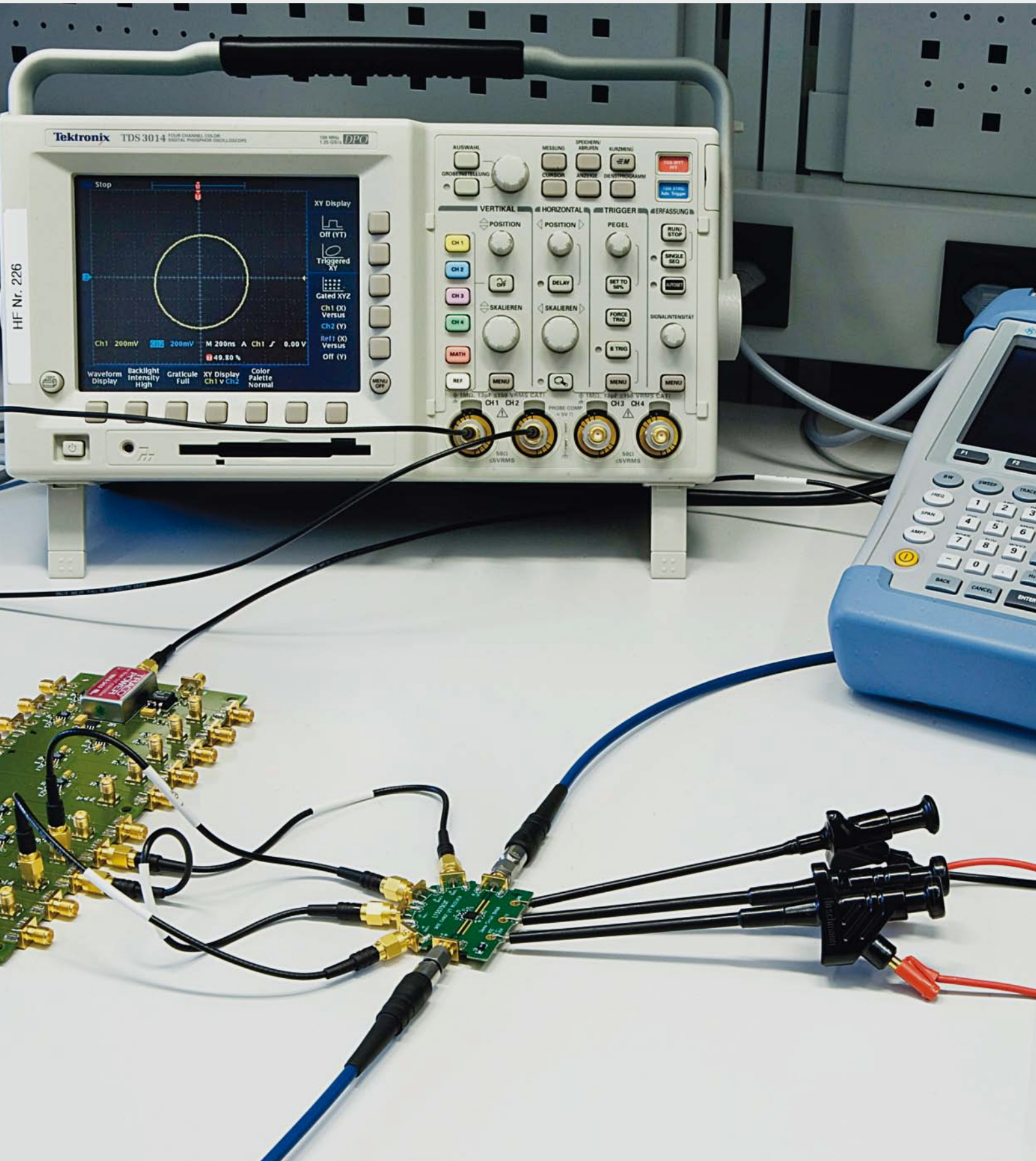
Attenuators and terminators catalogue

Edition 2016

HUBER+SUHNER

Excellence in Connectivity Solutions

Be precise



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Your partner for system solutions

The HUBER+SUHNER Group is a leading global supplier of components and systems for electrical and optical connectivity. Our customers in communications, industrial and transportation markets appreciate that we are specialists with detailed knowledge of practical applications. We offer technical expertise in radio frequency technology, fiber optics and low frequency under one roof, thus providing a unique basis for continual innovation focused on the needs of our customers all over the world.

RF and microwave components

HUBER+SUHNER's extensive range of high-quality components are matched to the various needs in the field of test and measurement. All these products are distinguished by their high performance and stable characteristics – the result of years of experience in the development and production of radio frequency components.

This HUBER+SUHNER short form catalogue presents you an extract of the wide range of components. If you have a specific need and do not see it in this catalogue, please contact your HUBER+SUHNER representative for assistance.

HUBER+SUHNER
Excellence in Connectivity Solutions

NAVIGATION
DISPLAY
CHANNEL SETUP
COMMAND
TRACE SETUP
ENTRY
UTILITY
Probe Power
USB
PORT 1
1.85 mm
PORT 2
1.85 mm
TRANS FWD
REFL FWD
TRANS REV
REFL REV

Fixed attenuators

Low, medium and high power

Product description 6

Low power attenuators, up to 2 Watts
- BNC 7
- N 8
- PC2.4 9
- PC7 9
- QMA 9
- SK (PC2.92) 10
- SMA 10
- TNC 11

Medium power attenuators, up to 50 Watts
- N 12
- SMA 13
- 7/16 13

High power attenuators, up to 300 Watts
- N 14
- SMA 14
- 7/16 15

Fixed attenuators

Product description

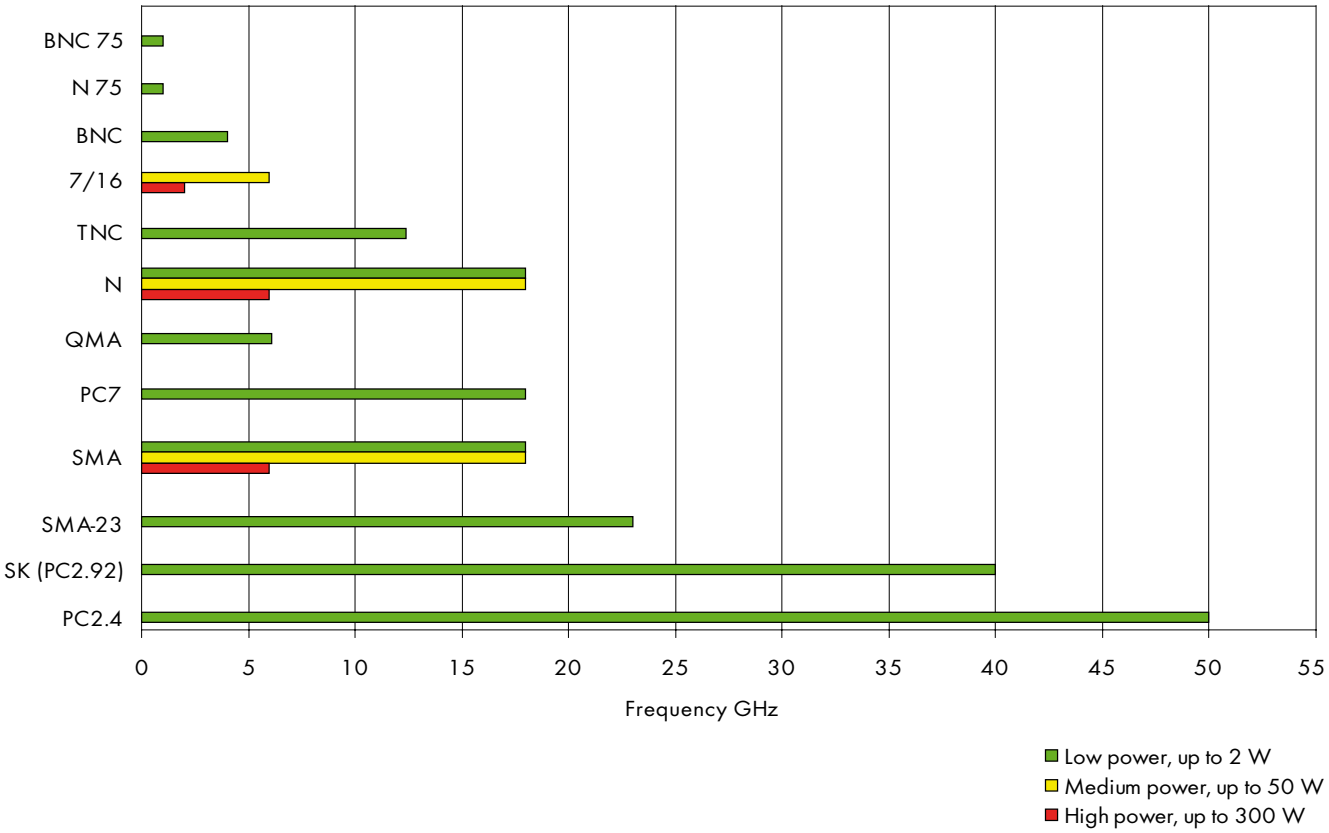
RF attenuators are used to reduce the power of a signal without causing distortion of its waveform.
They are used in many test & measurement and communication applications

- Power adjuster between different channels or inline subsystems
- As a protecion for the input of the test equipment to reduce threatening RF power
- To improve the imedance matching between subsystems or to the test instrumentation

Features

- 50 Ω or 75 Ω impedance
- Fixed attenuation level from 0 dB up to 40 dB
- Various bandwidth to improve the impedance matching between subsystems of its waveform
- Wide range of interfaces
- Made to female connetorisation

Attenuators quick selection chart



Product details

Specific data sheets and outline drawings are available on request or on our website hubersuhner.com.

Power handling capability

The referenced **average input power rating** is mainly applicable at 25 °C ambient temperature. For higher ambient temperature a certain power derating may be required. Please see detailed product specification. Medium and high power products shall be mounted in such a way that free air convection around heat sink is given to assure performance.

For detailed product information see how to search online on page 35.

Low power attenuators, up to 2 Watts

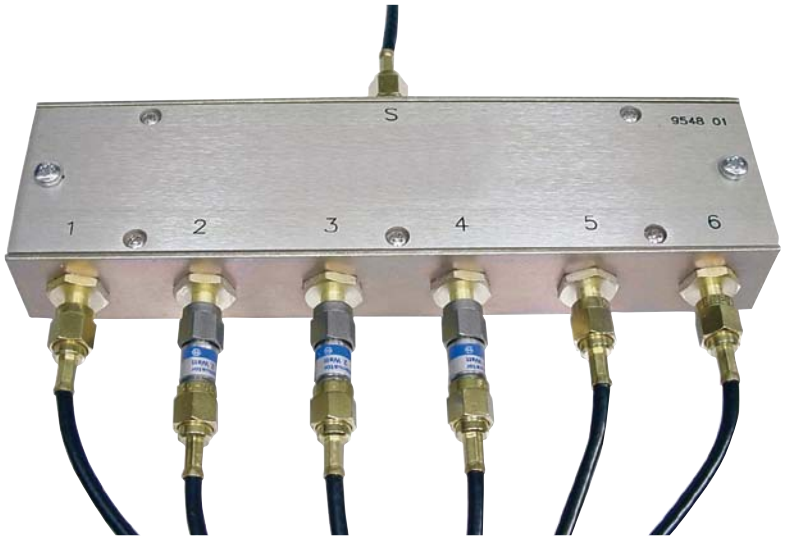
BNC, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
4	1.2	20.8	2	1	6801.01.A	22641542
				2	6802.01.A	22641543
				3	6803.01.A	22550177
				6	6806.01.A	22550178
				10	6810.01.A*	22550179
				20	6820.01.A*	22550180
				30	6830.01.A*	22550181

* 1 Watt power rating

BNC, 75 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
1	1.15	23.1	1	3	6903.02.A	22550074
				6	6906.02.A	22550088
			0.4	10	6910.02.A	22550124
	1.2	20.8	0.4	20	6920.02.A	22550138



Low power attenuators, up to 2 Watts

N, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
6	1.25	19.1	2	1	6801_N-50-1	84066765
				2	6802_N-50-1	84066769
				3	6803_N-50-1	84066770
				4	6804_N-50-1	84066772
				5	6805_N-50-1	84066786
				6	6806_N-50-1	84066798
				7	6807_N-50-1	84066801
				8	6808_N-50-1	84066802
				9	6809_N-50-1	84066808
				10	6810_N-50-1	84066809
				15	6815_N-50-1	84066814
				20	6820_N-50-1	84066815
				30	6830_N-50-1	84066817
12.4	1.35	16.5	2	1	6801.17.A	22641535
	1.25	19.1	2	2	6802.17.A	22641536
				3	6803.17.A	22550182
				4	6804.17.A	22641537
				5	6805.17.A	22641538
				6	6806.17.A	22550183
				7	6807.17.A	22641539
				8	6808.17.A	22641540
				9	6809.17.A	22641541
				10	6810.17.A*	22550185
				20	6820.17.A*	22550186
				30	6830.17.A*	22550187
18	1.25	19.1	2	3	6803.17.B	22550188
				6	6806.17.B	22550189
				10	6810.17.B*	22550190
				20	6820.17.B*	22550191
				30	6830.17.B*	22550192

* 1 Watt power rating

N, 75 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
1	1.15	23.1	1	3	6903.18.A	22550218
				6	6906.18.A	22550219
			0.8	10	6910.18.A	22550220
			0.4	20	6920.18.A	22550221

For detailed product information see how to search online on page 35.

Low power attenuators, up to 2 Watts

PC2.4, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
50	1.75	11.3	0.5	3	6603_PC24-50-1	84058353
				6	6606_PC24-50-1	84058358
				10	6610_PC24-50-1	84058360
				20	6620_PC24-50-1	84058363
				30	6630_PC24-50-1	84058370

QMA, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
6	1.2	20.8	2	3	6803_QMA-50-2	84058454
				6	6806_QMA-50-2	84058457
				10	6810_QMA-50-2	84058461
				20	6820_QMA-50-2	84058212

SK (PC2.92), 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
40	1.4	15.6	0.5	3	6603_SK-50-1	84076856
				6	6606_SK-50-1	84076855
				10	6610_SK-50-1	84076854
				20	6620_SK-50-1	84076850

For detailed product information see how to search online on page 35.

Low power attenuators, up to 2 Watts

SMA, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
6	1.2	20.8	2	1	6601_SMA-50-2	84037361
				2	6602_SMA-50-2	84034481
				3	6603_SMA-50-2	84036311
				4	6604_SMA-50-2	84034272
				5	6605_SMA-50-2	84037414
				6	6606_SMA-50-2	84037343
				7	6607_SMA-50-2	84037410
				8	6608_SMA-50-2	84037388
				9	6609_SMA-50-2	84037381
				10	6610_SMA-50-2	84036452
				15	6615_SMA-50-2	84037424
				20	6620_SMA-50-2	84037362
				30	6630_SMA-50-2	84037372
18	1.35	16.5	2	1	6801.19.A[1)]	22641550
				2	6802.19.A[1)]	22641555
				3	6803.19.A[1)]	22550028
				4	6804.19.A[1)]	22641554
				5	6805.19.A[1)]	22641553
			1	6	6806.19.A[1)]	22550030
				7	6807.19.A[1)]	22641552
				8	6808.19.A[1)]	22641551
				9	6809.19.A[1)]	22641566
				10	6810.19.A[1)]	22550031
				20	6820.19.A[1)]	22550042
				30	6830.19.A[1)]	22550052

1)

[1)] body made of copper beryllium alloy with gold plating and without epoxy captivation for better EMC shielding

For detailed product information see how to search online on page 35.

Low power attenuators, up to 2 Watts

SMA, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
18	1.35	16.5	2	1	6601_SMA-50-1	84037360
				2	6602_SMA-50-1	84030799
				3	6603_SMA-50-1	84036313
				4	6604_SMA-50-1	84034265
				5	6605_SMA-50-1	84037413
				6	6606_SMA-50-1	84037341
				7	6607_SMA-50-1	84037409
				8	6608_SMA-50-1	84037387
				9	6609_SMA-50-1	84037379
				10	6610_SMA-50-1	84036459
				15	6615_SMA-50-1	84037421
				20	6620_SMA-50-1	84037363
				30	6630_SMA-50-1	84037371
23	1.4	15.6	2	1	6601_SMA-50-3	84066837
				2	6602_SMA-50-3	84066840
				3	6603_SMA-50-3	84066841
				4	6604_SMA-50-3	84066842
				5	6605_SMA-50-3	84066844
				6	6606_SMA-50-3	84066845
				7	6607_SMA-50-3	84066847
				8	6608_SMA-50-3	84066850
				9	6609_SMA-50-3	84066851
				10	6610_SMA-50-3	84066853
				15	6615_SMA-50-3	84066855
				20	6620_SMA-50-3	84066879
				30	6630_SMA-50-3	84066884

TNC, 50 Ω, connector configuration male to female

Frequency DC to GHz	VSWR max.	Return loss min. dB	Power rating W	Nom. attenuation dB	HUBER+SUHNER type	Item no.
12.4	1.4	15.6	2	3	6803.26.A	22543746
				6	6806.26.A	22550194
			1	10	6810.26.A	22550195
				20	6820.26.A	22550196
				30	6830.26.A	22550197

For detailed product information see how to search online on page 35.

Medium power attenuators, up to 50 Watts

N, 50 Ω, connector configuration male to female

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Nom. attenuation dB	HUBER+SUHNER type	Item no.
5	6	1.2	20.8	1	5901_N-50-6	84060474
				2	5902_N-50-6	84060477
				3	5903_N-50-6	84060582
				4	5904_N-50-6	84060583
				5	5905_N-50-6	84060584
				6	5906_N-50-6	84060587
				7	5907_N-50-6	84060588
				8	5908_N-50-6	84060589
				9	5909_N-50-6	84060590
				10	5910_N-50-6	84060597
				15	5915_N-50-6	84060647
				20	5920_N-50-6	84060649
				30	5930_N-50-6	84060653
				40	5940_N-50-6	84060654
10	6	1.25	19.1	3	5903.17.0003	22648036
		1.35	16.5	6	5906.17.0003	22648039
	18	1.4	15.6	3	5903_N-50-010	84060166
				6	5906_N-50-010	84060181
				10	5910_N-50-010	84060182
				20	5920_N-50-010	84060186
				30	5930_N-50-010	84060452
				40	5940_N-50-010	84060453
25	6	1.25	19.1	3	5903.17.0004	22648037
				6	5906.17.0004	22648040
		1.2	20.8	10	5910_N-50-025	84067096
				20	5920_N-50-025	84067101
				30	5930_N-50-025	84067102
50	6	1.25	19.1	3	5903.17.0005	22648038
		1.35	16.5	6	5906.17.0005	22648041
		1.25	19.1	10	5910_N-50-050*	84067128
				20	5920_N-50-050*	84067127
				30	5930_N-50-050*	84064545

* unidirectional unit, input port is the male connector

For detailed product information see how to search online on page 35.

Medium power attenuators, up to 50 Watts

SMA, 50 Ω, connector configuration male to female

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Nom. attenuation dB	HUBER+SUHNER type	Item no.
5	18	1.35	16.5	3	5903_SMA-50-005	84066683
				6	5906_SMA-50-005	84066745
				10	5910_SMA-50-005	84066751
				20	5920_SMA-50-005	84066757
				30	5930_SMA-50-005	84066762
				40	5940_SMA-50-005	84066764
10	6	1.2	20.8	3	5903.19.0001	22659280
				6	5906.19.0002	22651220
	18	1.35	16.5	3	5903_SMA-50-010	84066939
				6	5906_SMA-50-010	84066946
				10	5910_SMA-50-010	84066948
				20	5920_SMA-50-010	84066949
				30	5930_SMA-50-010	84066962
25	6	1.25	19.1	3	5903.19.0002	22659518
		1.35	16.5	6	5906.19.0003	22659520
		1.2	20.8	10	5910_SMA-50-025	84066923
				20	5920_SMA-50-025	84066927
				30	5930_SMA-50-025	84066931
50	6	1.35	16.5	6	5906.19.0004	22659521
		1.25	19.1	10	5910_SMA-50-050*	84066933
				20	5920_SMA-50-050*	84066935
				30	5930_SMA-50-050*	84066936

* unidirectional unit, input port is the male connector

7/16, 50 Ω, connector configuration male to female

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Nom. attenuation dB	HUBER+SUHNER type	Item no.
10	6	1.25	19.1	3	5903.41.0001	22652689
		1.35	16.5	6	5906.41.0001	22652690
		1.45	14.7	10	5910_716-50-010	84067139
				20	5920_716-50-010	84067141
				30	5930_716-50-010	84067142
25	6	1.35	16.5	6	5906.41.0002	22651235
		1.2	20.8	10	5910_716-50-025	84067156
				20	5920_716-50-025	84067171
				30	5930_716-50-025	84067172
50	6	1.25	19.1	3	5903.41.0003	22651243
		1.35	16.5	6	5906.41.0003	22650373
		1.45	14.7	10	5910_716-50-050*	84067275
				20	5920_716-50-050*	84067278
				30	5930_716-50-050*	84067279

* unidirectional unit, input port is the male connector

High power attenuators, up to 300 Watts

N, 50 Ω, connector configuration male to female

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Nom. attenuation dB	HUBER+SUHNER type	Item no.
100	6	1.45	14.7	3	5903_N-50-1	84060038
				6	5906_N-50-1	84060058
				10	5910_N-50-1	84060059
				20	5920_N-50-1	84060060
				30	5930_N-50-1	84048317
				40	5940_N-50-1	84060078
200	4	1.35	16.5	3	5903_N-50-200	84067251
				6	5906_N-50-200	84067260
				10	5910_N-50-200	84067268
				20	5920_N-50-200	84067269
		1.5	14.0	30	5930_N-50-200	84067272
300	4	1.35	16.5	3	5903_N-50-300	84065030
				6	5906_N-50-300	84065095
				10	5910_N-50-300	84065098
				20	5920_N-50-300	84065099
		1.5	14.0	30	5930_N-50-300	84065102
				40	5940_N-50-300	84065104

all units are unidirectional, input port is the male connector

SMA, 50 Ω, connector configuration male to female

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Nom. attenuation dB	HUBER+SUHNER type	Item no.
100	6	1.45	14.7	3	5903_SMA-50-1	84066892
				6	5906_SMA-50-1	84066893
				10	5910_SMA-50-1	84066902
				20	5920_SMA-50-1	84066903
				30	5930_SMA-50-1	84066904

all units are unidirectional, input port is the male connector

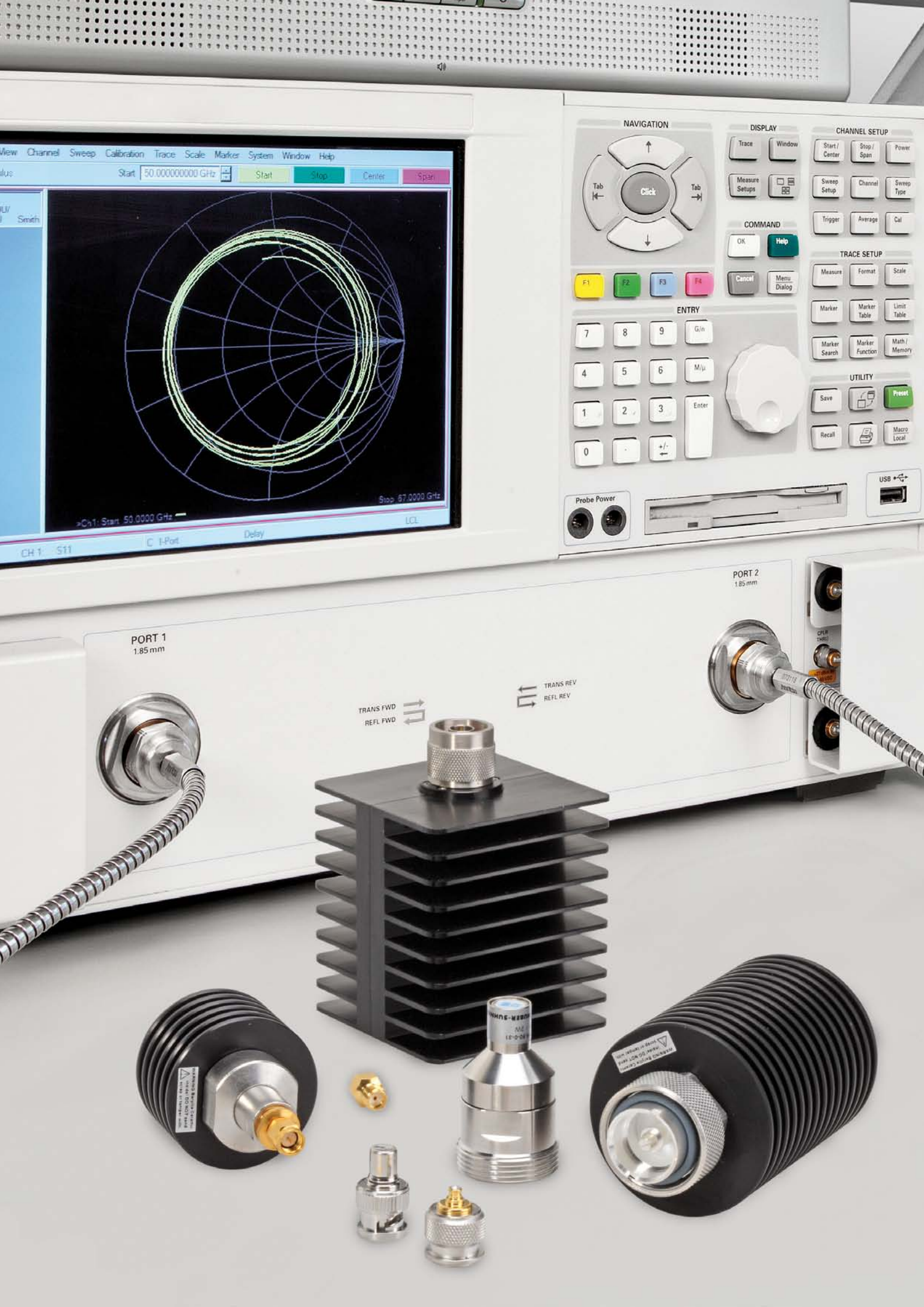
For detailed product information see how to search online on page 35.

High power attenuators, up to 300 Watts

7/16, 50 Ω, connector configuration male to female

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Nom. attenuation dB	HUBER+SUHNER type	Item no.
100	2.7	1.35	16.5	3	5903_716-50-1	84060159
				6	5906_716-50-1	84060655
				10	5910_716-50-1	84060657
				20	5920_716-50-1	84060658
				30	5930_716-50-1	84060692
				40	5940_716-50-1	84060693

all units are unidirectional, input port is the male connector


View Channel Sweep Calibration Trace Scale Marker System Window Help
Start 50.000000000 GHz
Start
Stop
Center
Span
Smith
Stop 67.0000 GHz
>Ch1: Start 50.0000 GHz
CH 1 S11
C 1-Port
Delay
LCL
NAVIGATION
Tab
Click
Tab
DISPLAY
Trace
Window
Measure Setups
COMMAND
OK
Help
Cancel
Menu Dialog
F1
F2
F3
F4
ENTRY
7
8
9
G/n
4
5
6
M/µ
1
2
3
Enter
0
+/-
CHANNEL SETUP
Start / Center
Stop / Span
Power
Sweep Setup
Channel
Sweep Type
Trigger
Average
Cal
TRACE SETUP
Measure
Format
Scale
Marker
Marker Table
Limit Table
Marker Search
Marker Function
Math / Memory
UTILITY
Save
Preset
Recall
Macro Local
Probe Power
USB
PORT 1
1.85 mm
PORT 2
1.85 mm
TRANS FWD
REFL FWD
TRANS REV
REFL REV

Coaxial terminators

Low, medium and high power

Product description 18

Low power terminations, up to 2 Watts
- BNC 19
- BMA 19
- C 19
- MCX 19
- MMCX 20
- N 20
- PC2.4 20
- PC7 20
- QLA 20
- QMA 21
- QN 21
- SK (PC 2.92) 21
- SMA 21
- SMB 21
- SMC 22
- TNC 22
- 7/16 22

Medium power terminations, up to 60 Watts
- BNC 23
- N 23
- SMA 24
- TNC 24
- 7/16 24

Coaxial terminators

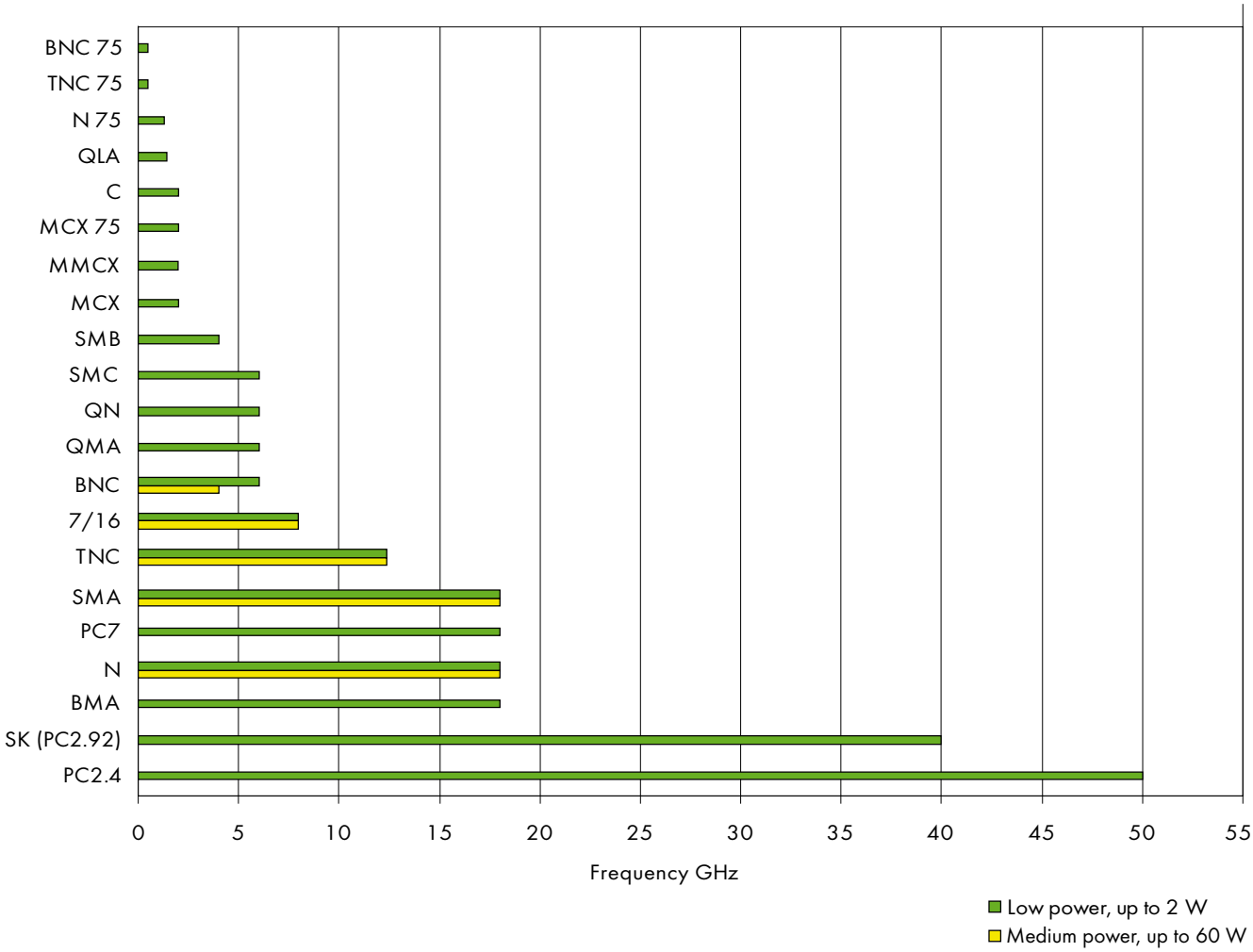
Product description

Terminators (also called RF loads or dummy loads) are applied to an open end of a transmission line, e.g. an RF port, to prevent the back-reflection of an RF signal. They are used in a large variety of test & measurement, defence and communication applications.

Features

- Impedance matched
- Standard or precision types
- Various bandwidth
- Low and medium power

Termination quick selection chart



Product details

Specific data sheets and outline drawings are available on request or on our website hubersuhner.com.

Power handling capability

The referenced **average input power rating** is mainly applicable at 25 °C ambient temperature. For higher ambient temperature a certain power derating may be required. Please see detailed product specification. Medium and high power products shall be mounted in such a way that free air convection around heat sink is given to assure performance.

For detailed product information see how to search online on page 35.

Low power terminators, up to 2 Watts

BNC, 50 and 75 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
2	1.2	20.8	1	50 Ω male	65_BNC-50-0-2 [1]	22550141
				50 Ω female	65_BNC-50-0-35 [1]	22648680
4	1.15	23.1	2	50 Ω male	65_BNC-50-0-72	84059870
6	1.15	23.1	1	50 Ω male	65_BNC-50-0-6	84010974
1	1.22	20.1	0.4	75 Ω male	65_BNC-75-0-7	22650006
	1.2	20.8	1	75 Ω female	65_BNC-75-0-31	22550036
	1.1	26.4	1	75 Ω female	65_BNC-75-0-1	22550055
	1.1	26.4	1	75 Ω female	65_BNC-75-0-2 [1]	22550058

[1] products with chain

BMA, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
15	1.45	14.7	0.5	female	65_BMA-50-0-2	23031865
18	1.35	16.5	0.5	female	65_BMA-50-0-1	22648598

C, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
2	1.22	20.1	1	male	65_C-50-0-1	22550062

MCX, 50 and 75 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
6	1.22	20.1	1	50 Ω male	65_MCX-50-0-4	85026660
2	1.2	20.8	0.5	50 Ω female	65_MCX-50-0-31	22550163
2	1.3	17.7	0.5	75 Ω male	65_MCX-75-0-1	22649865
				75 Ω female	65_MCX-75-0-31	22650762

Low power terminators, up to 2 Watts

MMCX, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
6	1.22	20.1	1	male	65_MMCX-50-0-2	85026661
2	1.2	20.8	0.5	female	65_MMCX-50-0-31	22649357

N, 50 and 75 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
2.5	1.22	20.1	1	N 50 Ω male	65_N-50-0-52 [1]	84016980
4	1.2	20.8	1	N 50 Ω male	65_N-50-0-1	22550091
6	1.15	23.1	1	N 50 Ω male	65_N-50-0-51	23034002
				N 50 Ω male	65_N-50-0-53 [2]	84025689
18	1.06	30.7	2	N 50 Ω male	6500_N-50-1	84066537
				N 50 Ω female	6500_N-50-2	84066538
	1.25	19	2	N 50 Ω male	65002_N-50-1	84059922
1.3	1.05	32.3	1	N 75 Ω male	65_N-75-0-11	22550107

[1] products with chain
[2] waterproof

PC2.4, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
50	1.6	12.7	0.5	male	6500_PC24-50-1	84066625

QLA, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
1.4	1.22	20.1	1	male	65_QLA-01-0-3	85011311

For detailed product information see how to search online on page 35.

Low power terminators, up to 2 Watts

QMA, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
6	1.15	23.1	1	male	65_QMA-50-0-2	84011011
				male	65_QMA-50-0-3 [1]	23033932
				female	65_QMA-50-0-4	23038371
3	1.2	20.8	1	male	65_QMA-W50-0-5 [2]	84025816

[1] products with chain
[2] waterproof

QN, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
6	1.15	23.1	1	male	65_QN-50-0-2	84015257

SK (PC2.92), 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
40	1.22	20.1	1	male	6500.42.0001	84000377

SMA, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
6	1.15	23.1	1	male	65_SMA-50-0-20 [2]	84011015
	1.15	23.1		male	65_SMA-50-0-25 [1] [2]	84028132
	1.15	23.1		female	65_SMA-50-0-35 [2]	23015765
18	1.1	26.4	0.75	male	6500.19.A	22645868
	1.15	23.1	0.75	female	6500.19.B	22645869
	1.25	19.1	1	male	65_SMA-50-0-1 [2]	22640162
				female	65_SMA-50-0-36	84141417

[1] products with chain
[2] waterproof

SMB, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
4	1.4	15.6	0.5	male	65_SMB-50-0-1	22550111
				female	65_SMB-50-0-31	22640230

Low power terminators, up to 2 Watts

SMC, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
4	1.2	20.8	0.5	female	65_SMC-50-0-31	22550114
6	1.22	20.1	1	male	65_SMC-50-0-2	84011016

TNC, 50 and 75 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
2	1.2	20.8	1	50 Ω female	65_TNC-50-0-31	22640683
				50 Ω male[1)]	65_TNC-50-0-5	22659509
6	1.15	23.1	1	50 Ω male	65_TNC-50-0-6	84011017
12.4	1.26	18.8	0.5	50 Ω female	6500.26.0002	22659846
				50 Ω male	6500.26.0003	22659852
1	1.1	26.4	1	75 Ω male	65_TNC-75-0-1	22543883
				75 Ω female	65_TNC-75-0-31	22550152

[1)] product with chain

7/16, 50 Ω

Frequency GHz	VSWR max.	Return loss min. dB	Power rating W	Interface characteristics	HUBER+SUHNER type	Item no.
2	1.2	20.8	1	male	65_716-50-0-3	22652596
8	1.1	26.4	1	female	6500.41.B	22650017
				male	6500.41.A	22650018
4	1.2	20.8	2	male	65_716-50-0-2	22648281
				female	65_716-50-0-31	22648282

For detailed product information see how to search online on page 35.

Medium power terminators, up to 60 Watts

BNC, 50 Ω

Power rating W	Frequency GHz	VSWR max.	Return loss min. dB	Interface characteristics	HUBER+SUHNER type	Item no.
6	4	1.1	26.4	female	6506.01.B	22550259
				male	6506.01.A	22550260
15	4	1.1	26.4	male	6515.01.A	22550273

N, 50 Ω

Power rating W	Frequency GHz	VSWR max.	Return loss min. dB	Interface characteristics	HUBER+SUHNER type	Item no.
6	6	1.25	19.1	male	6506.17.0001	22659464
	12.4	1.25	19.1	female	6506.17.B	22550253
				male	6506.17.A	22550258
10	6	1.2	20.8	male	65010_N-50-1	84047978
				female	65010_N-50-4	84068990
	18	1.4	15.6	male	65010_N-50-3	84066518
				female	65010_N-50-2	84068982
15	12.4	1.25	19.1	female	6515.17.B	22550263
				male	6515.17.A	22550264
25	2	1.1	26.4	male	6525.17.AB	22643785
				female	6525.17.BB	22643787
	5	1.2	20.8	male	6525.17.AA	22642248
				female	6525.17.BA	22643786
	6	1.2	20.8	male	65025_N-50-1	84059933
50/25*	2	1.1	26.4	male	6550.17.AB	22643791
				female	6550.17.BB	22643793
	5	1.2	20.8	male	6550.17.AA	22641938
				female	6550.17.BA	22643792
60	2	1.1	26.4	male	6560.17.AB	22643799
				female	6560.17.BB	22643801
	5	1.2	20.8	male	6560.17.AA	22643798
				female	6560.17.BA	22643800

* 50 Watt, if the termination is mounted on an additional heat sink with a max. thermal resistance (R_{th}) of 5 K/Watt.
Without additional heat sink this termination is applicable up to 25 Watts only.

Medium power terminators, up to 60 Watts

SMA, 50 Ω

Power rating W	Frequency GHz	VSWR max.	Return loss min. dB	Interface characteristics	HUBER+SUHNER type	Item no.
5	18	1.25	19.1	male	65005_SMA-50-1	84066544
6	6	1.25	19.1	male	6506.19.0001	22659462
	12.4	1.25	19.1	male	6506.19.A	22550257
		1.25	19.1	female	6506.19.B	22550256
10	18	1.4	15.6	male	65010_SMA-50-1	84066618
15	12.4	1.25	19.1	male	6515.19.A	22544579
				female	6515.19.B	22544580
25	2	1.1	26.4	male	6525.19.AB	22643660
	5	1.2	20.8	male	6525.19.AA	22643659
		1.2	20.8	female	6525.19.BA	22643655
50	6	1.25	19.1	male	65050_SMA-50-1	84066590

TNC, 50 Ω

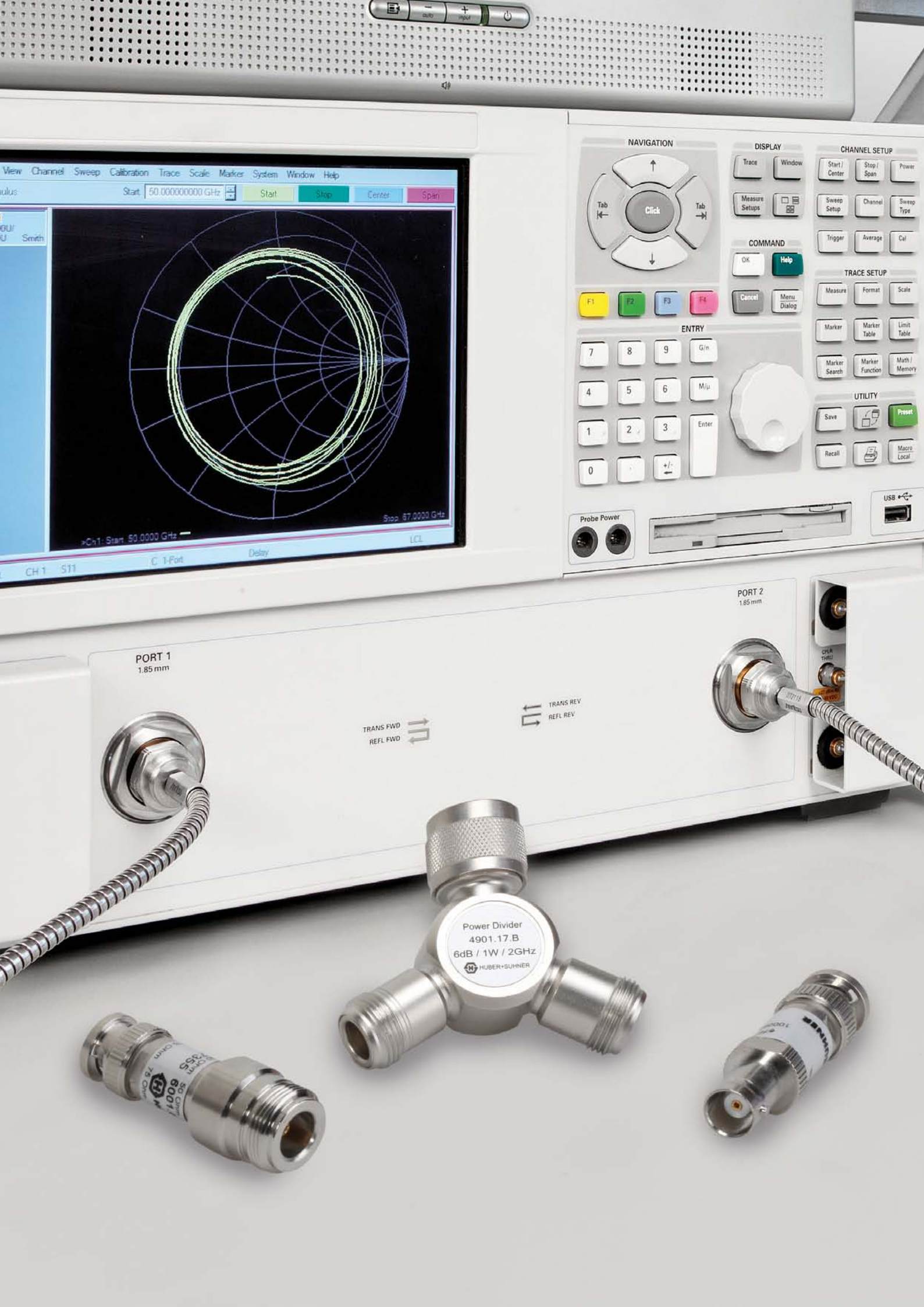
Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Interface characteristics	HUBER+SUHNER type	Item no.
6	6	1.25	19.1	male	6506.26.0002	22649996
	12.4	1.3	17.7	male	6506.26.A	22550255

7/16, 50 Ω

Power rating W	Frequency DC to GHz	VSWR max.	Return loss min. dB	Interface characteristics	HUBER+SUHNER type	Item no.
6	8	1.2	20.8	male	6506.41.A	22550272
				female	6506.41.B	22550271
10	4	1.2	20.8	male	65010_716-50-1	84048315
15	8	1.2	20.8	male	6515.41.A	22544577
				female	6515.41.B	22544578
25	2	1.1	26.4	male	6525.41.AB	22643788
				female	6525.41.BB	22643790
	5	1.2	20.8	male	6525.41.AA	23007076
50/25*	2	1.1	26.4	male	6550.41.AB	22643795
				female	6550.41.BB	22643797
60	2	1.1	26.4	male	6560.41.AB	22643803
				female	6560.41.BB	22643805
	5	1.2	20.8	male	6560.41.AA	23008377
				female	6560.41.BA	23010487

* 50 Watt, if the termination is mounted on an additional heat sink with a max. thermal resistance (R_{th}) of 5 K/Watt.
Without additional heat sink this termination is applicable up to 25 Watts only.

For detailed product information see how to search online on page 35.


View Channel Sweep Calibration Trace Scale Marker System Window Help
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CH 1 S11
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Limit Table
Marker Search
Marker Function
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Recall
Macro Local
Probe Power
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PORT 2
1.85 mm
TRANS FWD
REFL FWD
TRANS REV
REFL REV
Power Divider
4901.17.B
6dB / 1W / 2GHz
HUBER+SUHNER

Special products

Feed through terminators 28

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Feed through terminators

Feed through terminations are designed to connect 50 Ω transmission lines or RF devices with a high impdance test equipment, e.g. oscilloscope.

Features
• Allows high input impedance RF measurement

50 Ω, connector configuration male to female

Interface characteristics	Frequency DC to GHz	VSWR max.	Return loss min. dB	Power W	HUBER+SUHNER type	Item no.
BNC	0.5	1.25	19.1	2	6701.01.A	22543741
BNC	1	1.25	19.1	0.4	6701.01.B	22543742
N	0.5	1.25	19.1	0.4	6701.17.A	22644916

DC blocks

A DC block separates or blocks DC voltage (galvanic isolation) and let pass RF frequency along a coaxial transmission line.

Features
• Broadband
• RF signal passes with negligible loss
• Blocking of DC
• Galvanik isolation of centre conductor

50 Ω, connector configuration male to female

Interface characteristics	Frequency GHz	Voltage max. V	Block type	VSWR max.	Return loss min. dB	HUBER+SUHNER type	Item no.
BNC	5	250	centre conductor	1.22	20.1	1100.01.A	22550233
N	5	250	centre conductor	1.22	20.1	1100.17.A	22550232
SMA	18	200	centre conductor	1.35	16.5	1100.19.0001	84107082

Detailed product specifications and outline drawings are available on request.

Impedance matching pads

Matching pads are designed to match 50 Ω with 75 Ω impedance of two different transmission lines of while preserving signal integrity.

Features
- Low insertion loss
- High repeatability
- Low return loss

50 Ω with 75 Ω

Interface characteristics	Frequency GHz	VSWR max. at 50 Ω	Return loss min. dB	Power W	HUBER+SUHNER type	Item no.
BNC: 50(m) – 75(f)	1	1.25	19.1	0.7	6001.01.A	22543737
BNC: 50(f) – 75(m)	1	1.25	19.1	0.7	6001.01.B	22550085
N: 50(f) – 75(m)	1	1.25	19.1	0.7	6001.17.B	22642806
N: 50(m) – 75(f)	1	1.25	19.1	0.7	6001.17.A	22642807
N: 50(m) – BNC 75(f)	1	1.25	19.1	0.7	6001.00.0001	22649583
N: 50(f) – BNC 75(m)	1	1.25	19.1	0.7	6001.00.0002	22651259

m: refers to male, f: refers to female

Resistive power dividers

Power dividers are designed to split a RF signal equally into two output signals with an insertion loss of 6 dB.

Features
- Broadband down to DC
- Very low return loss
- Cost effective solution to tap off a signal
- Very compact

50 Ω

Interface characteristics	Frequency GHz	VSWR max.	Return loss min. dB	Power W	HUBER+SUHNER type	Item no.
BNC (f-f-f)	2	1.15	23.1	1	4901.01.A	22550077
BNC (m-f-f)	2	1.15	23.1	1	4901.01.B	22550078
N (f-f-f)	2	1.15	23.1	1	4901.17.A	22550252
N (m-f-f)	2	1.15	23.1	1	4901.17.B	22643830
TNC (f-f-f)	2	1.15	23.1	1	4901.26.A	22640656
TNC (m-f-f)	2	1.15	23.1	1	4901.26.B	22550165
SMA (f-f-f)	12.4	1.2	20.8	0.5	4901.19.A	22641657

m: refers to male, f: refers to female

Detailed product specifications and outline drawings are available on request.

View Channel Sweep Calibration Trace Scale Marker System Window Help
Start 50.000000000 GHz
Start
Stop
Center
Span
Stop 67.0000 GHz
Ch1: Start 50.0000 GHz
CH 1 S11
C 1-Port
Delay
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NAVIGATION
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DISPLAY
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Measure Setups
COMMAND
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Help
Cancel
Menu Dialog
F1
F2
F3
F4
CHANNEL SETUP
Start / Center
Stop / Span
Power
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Channel
Sweep Type
Trigger
Average
Cal
TRACE SETUP
Measure
Format
Scale
Marker
Marker Table
Limit Table
Marker Search
Marker Function
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Preset
Recall
Macro Local
Probe Power
USB
PORT 1
1.85 mm
TRANS FWD
REFL FWD
TRANS REV
REFL REV
PORT 2
1.85 mm

Low passive intermodulation components

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Low passive intermodulation load

HUBER+SUHNER offers high performance intermodulation loads for test & measurement in multicarrier high RF power radio applications. They are primarily used to terminate open transmission lines in PIM sensitive applications such as an open port of a hybrid coupler. These intermodulation loads are made by using high performance material, especially selected to obtain the best PIM and VSWR results.

Features
- High stability
- High repeatability
- Outstanding low PIM levels (better than –160 dBc)
- Other power levels and customized designs available on request

Low intermodulation load, 50 Ω

Interface	Frequency GHz	Power W	3rd order intermodulation* dBc	HUBER+SUHNER type	Item no.
7/16 female	0.69 to 2.7	50	≤ –160 (typ. –165)	6550.41.0003	85026558
7/16 female	0.69 to 2.7	100	≤ –160 (typ. –165)	6599.41.0001	84136809

* at 2 x 43 dBm / 2 x 20 W carrier

Detailed product specifications and outline drawings are available on request or on our website hubersuhner.com.

Low passive intermodulation adaptors

These low intermodulation adaptors have been specially developed for applications in intermodulation test set-ups.

Features
- Outstanding intermodulation performance
- Non magnetic materials
- Excellent electrical contacts
- Reliable and repeatable intermodulation measurements

Intermodulation adpators, 50 Ω

Interface 1	Interface 2	3rd order intermodulation* dBc	Frequency GHz	HUBER+SUHNER type	Item no.
7/16 female	7/16 female	≤ -165	2.7	31_716-50-0-2/133_WE	22658136
7/16 male	7/16 male	≤ -165		32_716-50-0-2/133_WE	22658141
7/16 male	7/16 female	≤ -165		33_716-50-0-2/133_WE	22658193
7/16 female	N female	≤ -165	2.7	31_N-716-50-2/133_WE	22658137
7/16 male	N male	≤ -165		32_N-716-50-2/133_WE	22658140
7/16 male	N female	≤ -165		33_716-N-50-3/133_WE	22658823
7/16 female	N male	≤ -165		33_N-716-50-3/133_WE	22658217
7/16 female	QN female	≤ -155	2.7	31_QN-716-50-1/113_WE	23033269
7/16 male	QN male	≤ -155		32_QN-716-50-1/113_WE	23033643
7/16 male	QN female	≤ -155		33_716-QN-50-1/113_WE	23033644
7/16 female	QN male	≤ -155		33_QN-716-50-1/113_WE	23033550
7/16 female	4.1/9.5 female	≤ -165	2.7	31_4195-716-50-1/113_WE	22658138
7/16 male	4.1/9.5 male	≤ -165		32_4195-716-50-1/113_WE	85024384
7/16 male	4.3-10 male	≤ -166	2.7	32_4310-716-50-x1/113_WE	85017233
7/16 female	4.3-10 female	≤ -166		33_4310-716-50-x1/113_WE	85017237
7/16 male	4.3-10 female	≤ -166		33_716-4310-50-x1/113_WE	85017213

Detailed product specifications and outline drawings are available on request or on our website hubersuhner.com.

Passive intermodulation standards

Intermodulation standards are special adaptors which generates intermodulation products of a certain preset level. They are used to verify intermodulation test benches for an instant and/or long-term level stability monitoring. If the third-order intermodulation value, displayed by the test instrument, deviates from the specified value of the intermod standard, it indicates a general measurement uncertainty which may be caused by the test setup rooting in one or several component or interconnection PIM sources.

Features
- High repeatability
- Each item delivered with measurement protocol
- Verification traceability via serial number

7/16, 50 Ω, connector configuration male to female

Frequency band MHz	3rd order intermodulation dBm*	HUBER+SUHNER type	Item no.
900	-80	69_716-50-0-1/133_WE	22658219
900	-110	69_716-50-0-3/133_WE	22658221
1800	-80	69_716-50-0-5/133_WE	23003870
1800	-110	69_716-50-0-7/133_WE	23003872

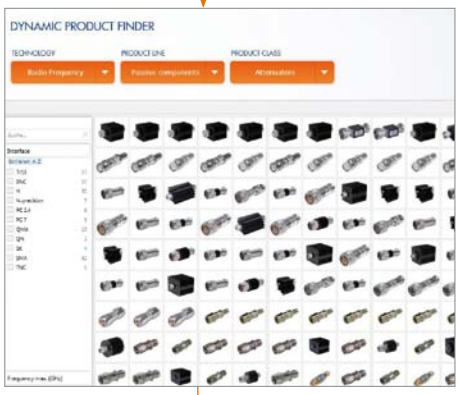
* ± 3 dB at 2 x 43 dBm / 2 x 20 W carrier

Detailed product specifications and outline drawings are available on request or on our website hubersuhner.com.

Product search

Search for detailed product information in our online data base via http://www.hubersuhner.com

Select your specific values



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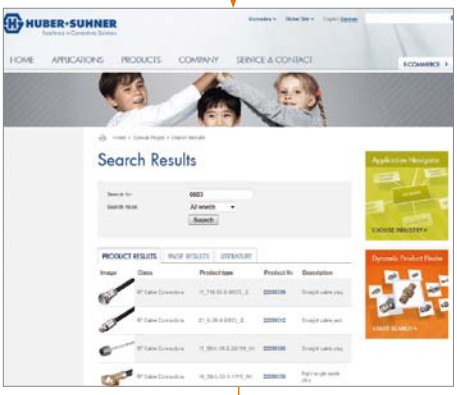

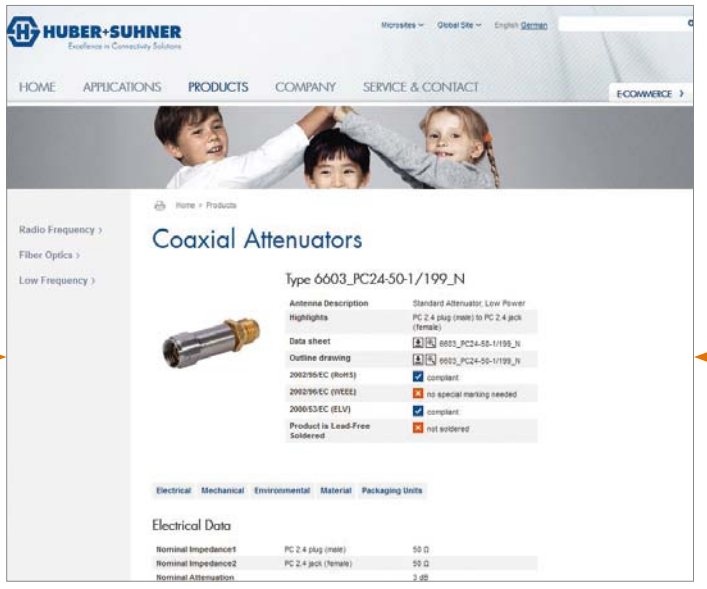

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