

RF ONE

Millimeter Wave Components and Cable Assemblies



Better Value for RF & Microwave Components
www.rfone.cn



About Us

RF ONE is an **ISO 9001** certified supplier of high quality RF, Microwave and mmWave components & cable assemblies from China. Since 2002 we have been dedicated to the design and manufacturing of RF attenuators, terminations and other passive components. As the industry evolved, RF ONE has grown and expanded our lines to keep meeting customer needs. Our products are used widely in commercial, industrial and military applications including wireless, satellite, defense, test & measurement etc.

RF ONE has been continuously pursuing improvement and dedicating to product innovation, granted with 13 patents in the range of RF Attenuators, mmWave terminations, low PIM Passive Components etc.

We have established long term solid partnership with worldwide sales representatives and distributors. RF ONE is the approved vendor to **Indra, Viavi Solutions, Teledyne Paradise Datacom** and also is qualified supplier to **ACE Technologies Corp, JCET, Ericsson** and more.

Millimeter Wave Components and Cable Assemblies

Nowadays the millimeter wave application is expanding steadily, such as in automotive radar, SatCom, 5G and 6G communications, material characterization etc. RF ONE offers a wide portfolio of testing components and cable assemblies to suit these new demands in Q band, V band, E band and W band.

In lab environments, it is essential to have these test components handy and perform reliably. RF ONE offers these connecting and testing solutions with quick delivery and proven performance.



Fixed Attenuators



Coaxial Terminations



Power Dividers



Directional Couplers



DC Blocks



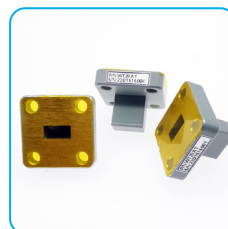
End Launch Connectors



Coaxial Adapters



Waveguide to Coax Adapters



Waveguide Terminations



Cable Assemblies

mmWave Coaxial Fixed Attenuator

1.0mm, DC-110GHz

Part Number	Avg Power	Freq Range	Connector	VSWR	Attenuations	Direction	Dimensions
	(W)			Max	(dB)		(mm)
RFH1-XX	1	DC-110	1.0mm	1.6	1-30	Bidirectional	16(L)*6(φ)



1.85mm, DC-67GHz

Part Number	Avg Power	Freq Range	Connector	VSWR	Attenuations	Direction	Dimensions
	(W)			Max	(dB)		(mm)
RFHB67XX185C2	2	DC-67	1.85mm	1.3	1-40	Bidirectional	16(L)*9(φ)
RFHB67XX185C5	5	DC-67	1.85mm	1.45	1-40	Bidirectional	15.6(L)*28(φ)
RFH67XX185D10	10	DC-67	1.85mm	1.45	13-40	Unidirectional	22.2(L)*34.8(φ)



2.4mm, DC-50GHz

Part Number	Avg Power	Freq Range	Connector	VSWR	Attenuations	Direction	Dimensions
	(W)			Max	(dB)		(mm)
RFHB50XX24C2	2	DC-50	2.4mm	1.3	1-40	Bidirectional	16(L)*9(φ)
RFHB50XX24C5	5	DC-50	2.4mm	1.34	1-40	Bidirectional	15.6(L)*28(φ)
RFHB50XX24C8	8	DC-50	2.4mm	1.34	1-40	Bidirectional	15.6(L)*34.8(φ)
RFH50XX24D10	10	DC-50	2.4mm	1.34	3-40	Unidirectional	22.2(L)*28(φ)
RFH50XX24D15	15	DC-50	2.4mm	1.34	3-40	Unidirectional	22.2(L)*34.8(φ)
RFH50XX24D20	20	DC-50	2.4mm	1.38	10-40	Unidirectional	28.8(L)*40.8(φ)
RFH50XX24D30	30	DC-50	2.4mm	1.38	10-40	Unidirectional	47.6(L)*40.8(φ)
RFH50XX24D35	35	DC-50	2.4mm	1.44	10-40	Unidirectional	54.2(L)*40.8(φ)



2.92mm, DC-40GHz

Part Number	Avg Power	Freq Range	Connector	VSWR	Attenuations	Direction	Dimensions
	(W)			Max	(dB)		(mm)
RFHB40XX292C2	2	DC-40	2.92mm	1.23	1-30	Bidirectional	15.2(L)*9(φ)
RFHB40XX292C5	5	DC-40	2.92mm	1.26	1-40	Bidirectional	14.4(L)*28(φ)
RFHB40XX292C10	10	DC-40	2.92mm	1.26	1-40	Bidirectional	14.4(L)*34.8(φ)
RFH40XX292D15	15	DC-40	2.92mm	1.26	3-40	Unidirectional	21.4(L)*34.8(φ)
RFH40XX292D20	20	DC-40	2.92mm	1.26	3-40	Unidirectional	21.4(L)*40.8(φ)
RFH40XX292D25	25	DC-40	2.92mm	1.3	10-40	Unidirectional	28.4(L)*40.8(φ)
RFH40XX292D30	30	DC-40	2.92mm	1.3	10-40	Unidirectional	46.1(L)*34.8(φ)
RFH40XX292D35	35	DC-40	2.92mm	1.3	10-40	Unidirectional	46.1(L)*40.8(φ)
RFH40XX292D40	40	DC-40	2.92mm	1.38	10-40	Unidirectional	53.1(L)*40.8(φ)
RFH40XXKD50A	50	DC-40	2.92mm	1.35	20-40	Unidirectional	88.8(L)*54(φ)
RFH30XX292D100	100	DC-30	2.92mm	1.3	10-40	Unidirectional	99(L)*49.8(φ)
RFH40XXKD100A Forced air cooling	100	DC-40	2.92mm	1.4	20-40	Unidirectional	145x160x178 Chassis



mmWave Coaxial Termination Loads

1.0mm, DC-110GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT1M	1	DC-110	1.0mm	Male	1.6	13.7(L)*7.5(φ)



1.35mm, DC-90GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT135M	1	DC-90	1.35mm	Male	1.6	15.1(L)*8.8(φ)



1.85mm, DC-67GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT67021851	2	DC-67	1.85mm	Female	1.30	8.8(L)*9(φ)
RFT67021852	2	DC-67	1.85mm	Male	1.30	9.4(L)*6.4(φ)
RFT67051851	5	DC-67	1.85mm	Female	1.45	15.6(L)*28(φ)
RFT67051852	5	DC-67	1.85mm	Male	1.45	15.6(L)*28(φ)
RFT67101851	10	DC-67	1.85mm	Female	1.45	22.2(L)*34.8(φ)
RFT67101852	10	DC-67	1.85mm	Male	1.45	22.2(L)*34.8(φ)



2.4mm, DC-50GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT5002241	2	DC-50	2.4mm	Female	1.26	8.8(L)*9(φ)
RFT5002242	2	DC-50	2.4mm	Male	1.26	9.4(L)*6.4(φ)
RFT5005241	5	DC-50	2.4mm	Female	1.30	15.6(L)*28(φ)
RFT5005242	5	DC-50	2.4mm	Male	1.30	15.6(L)*28(φ)
RFT5008241	8	DC-50	2.4mm	Female	1.30	15.6(L)*34.8(φ)
RFT5008242	8	DC-50	2.4mm	Male	1.30	15.6(L)*34.8(φ)
RFT5010241	10	DC-50	2.4mm	Female	1.30	22.2(L)*28(φ)
RFT5010242	10	DC-50	2.4mm	Male	1.30	22.2(L)*28(φ)
RFT5015241	15	DC-50	2.4mm	Female	1.30	22.2(L)*34.8(φ)
RFT5015242	15	DC-50	2.4mm	Male	1.30	22.2(L)*34.8(φ)
RFT5020241	20	DC-50	2.4mm	Female	1.34	28.8(L)*40.8(φ)
RFT5020242	20	DC-50	2.4mm	Male	1.34	28.8(L)*40.8(φ)
RFT5030241	30	DC-50	2.4mm	Female	1.34	47.5(L)*40.8(φ)
RFT5030242	30	DC-50	2.4mm	Male	1.34	47.5(L)*40.8(φ)
RFT5035241	35	DC-50	2.4mm	Female	1.38	54.2(L)*40.8(φ)
RFT5035242	35	DC-50	2.4mm	Male	1.38	54.2(L)*40.8(φ)



mmWave Coaxial Termination Loads

2.92mm, DC-40GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT40022921	2	DC-40	2.92mm	Female	1.23	8.4(L)*9(φ)
RFT40022922	2	DC-40	2.92mm	Male	1.23	9.4(L)*6.4(φ)
RFT40052921	5	DC-40	2.92mm	Female	1.26	14.4(L)*28(φ)
RFT40052922	5	DC-40	2.92mm	Male	1.26	14.4(L)*28(φ)
RFT40102921	10	DC-40	2.92mm	Female	1.26	14.4(L)*34.8(φ)
RFT40102922	10	DC-40	2.92mm	Male	1.26	14.4(L)*34.8(φ)
RFT40202921	20	DC-40	2.92mm	Female	1.26	21.4(L)*40.8(φ)
RFT40202922	20	DC-40	2.92mm	Male	1.26	21.4(L)*40.8(φ)
RFT40302921	30	DC-40	2.92mm	Female	1.30	46.1(L)*34.8(φ)
RFT40302922	30	DC-40	2.92mm	Male	1.30	46.1(L)*34.8(φ)
RFT40402921	40	DC-40	2.92mm	Female	1.38	53.1(L)*40.8(φ)
RFT40402922	40	DC-40	2.92mm	Male	1.38	53.1(L)*40.8(φ)
RFT40502921	50	DC-40	2.92mm	Female	1.38	60.1(L)*49.8(φ)
RFT40502922	50	DC-40	2.92mm	Male	1.38	60.1(L)*49.8(φ)
RFT301002921	100	DC-30	2.92mm	Female	1.30	99(L)*49.8(φ)
RFT301002922	100	DC-30	2.92mm	Male	1.30	99(L)*49.8(φ)



SSMA, SMP, SSMP, DC-40GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT4002SSMA1	2	DC-40	SSMA	Female	1.25	9.9(L)*7.3(φ)
RFT4002SSMA2	2	DC-40	SSMA	Male	1.25	10.9(L)*7.3(φ)
RFT4002SMP1	2	DC-40	SMP	Female	1.30	9.4(L)*4.8(φ)
RFT4002SMP2	2	DC-40	SMP	Male	1.30	9.9(L)*4.8(φ)
RFT4002SSMP1	2	DC-40	SSMP	Female	1.40	10(L)*4.8(φ)
RFT4002SSMP2	2	DC-40	SSMP	Male	1.40	10.8(L)*4.8(φ)



3.5mm, DC-33GHz

Part Number	Avg Power	Freq Range	Connector	Gender	VSWR	Dimensions
	(W)	(GHz)			Max	(mm)
RFT3301351	1	DC-33	3.5mm	Female	1.25	12.2(L)*6.5(φ)
RFT3301352	1	DC-33	3.5mm	Male	1.25	12.8(L)*6.5(φ)
RFT3302351A	2	DC-33	3.5mm	Female	1.15	14.1(L)*7(φ)
RFT3302352A	2	DC-33	3.5mm	Male	1.15	14.6(L)*7(φ)
RFT2702351	2	DC-27	3.5mm	Female	1.2	12.2(L)*6.5(φ)
RFT2702352	2	DC-27	3.5mm	Male	1.2	12.8(L)*6.5(φ)



mmWave Power Dividers

RF ONE offers a wide selection of mmWave Wilkinson power dividers and resistive power dividers that cover the frequencies ranging from DC to 67 GHz, as well as different combinations of outputs. These dividers come in 2.92mm, 2.4mm 1.85mm etc connectors, featuring wide band, low VSWR, low insertion losses and high isolation. Custom frequency bands and optimized specifications available.



DC-50GHz, 2 Way 2.4mm
Resistive Power Divider
PN: **PDR-50-V2**



DC-40GHz, 2 Way 2.92mm
Resistive Power Divider
PN: **PDR-40-K2A**



1-40GHz, 2 Way 2.92mm
Wilkinson Power Divider
PN: **PDM-0140-K2**



1-40GHz, 4 Way 2.92mm
Wilkinson Power Divider
PN: **PDM-0140-K4**



6-40GHz, 2 Way 2.92mm
Wilkinson Power Divider
PN: **PDM-0640-K2**



10-40GHz, 2 Way 2.92mm
Wilkinson Power Divider
PN: **PDM-1040-K2**



18-40GHz, 2 Way 2.92mm
Wilkinson Power Divider
PN: **PDM-1840-K2**



18-40GHz, 4 Way 2.92mm
Wilkinson Power Divider
PN: **PDM-1840-K2**

mmWave Directional Couplers

RF ONE provides coaxial directional couplers covering frequency ranges up to 40 GHz, nominal coupling values including 6dB, 10dB, 16dB, 20dB, 30dB. These couplers are suitable for broadband applications with optimized matching and high directivity performance.

Features

- 1 GHz to 40 GHz ultra broadband frequency range
- Low insertion loss, high directivity
- Custom performance and package requirements available



For more mmWave power dividers and directional couplers, please check our website www.rfone.cn

mmWave Inner DC Block

1.85mm, 10MHz-67GHz

Part Number	Freq Range	IL Max	VSWR	Voltage Max	Connector
	(GHz)	(dB)	Max	V	
DB6067A	0.01-67	0.9	1.5	60	1.85mm



2.4mm, 10MHz-50GHz

Part Number	Freq Range	IL Max	VSWR	Voltage Max	Connector
	(GHz)	(dB)	Max	V	
DB6050A	0.01-50	0.6	1.35	60	2.4mm



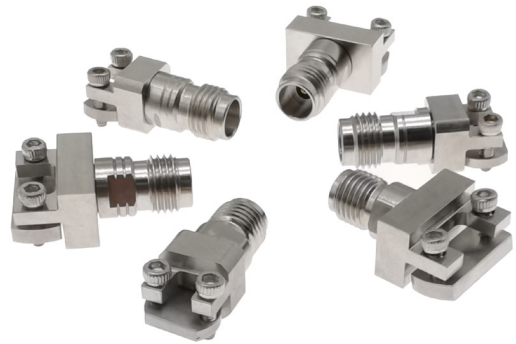
2.92mm, 10MHz-40GHz

Part Number	Freq Range	IL Max	VSWR	Voltage Max	Connector
	(GHz)	(dB)	Max	V	
DB6040A	0.01-40	0.5	1.35	60	2.92mm



mmWave End Launch Connectors

- Available in 2.92 mm (40 GHz), 2.4 mm (50 GHz), 1.85 mm (67 GHz), both jack and plug
- Launches to single layer microstrip or multilayer with grounded coplanar
- Field replaceable, requiring no solder for reusability
- Super small and low profile design
- From stock or in one week delivery
- Very low VSWR



Part Number	Connector	Freq Range	*VSWR	Pin diameter	Body Width	**Max PCB Thickness
		(GHz)	Max	(mm/Inch)	(Inch)	(mm)
EL292F-1	2.92mm	DC-40	1.25	0.254/0.01	0.5(Standard)	2.5
EL292F-2	2.92mm	DC-40	1.25	0.18/0.007	0.5(Standard)	2.5
EL292F-3	2.92mm	DC-40	1.25	0.18/0.007	0.35(Narrow)	3
EL24F-1	2.4mm	DC-50	1.3	0.254/0.01	0.5(Standard)	2.5
EL24F-2	2.4mm	DC-50	1.3	0.18/0.007	0.5(Standard)	2.5
EL24F-3	2.4mm	DC-50	1.3	0.18/0.007	0.35(Narrow)	3
EL185F-1	1.85mm	DC-67	1.35	0.18/0.007	0.5(Standard)	2.5
EL185F-2	1.85mm	DC-67	1.35	0.18/0.007	0.35(Narrow)	3

mmWave Coaxial Adapters

1.0mm to 1.0mm



A11001P



A11002P



A11003P

Part Number	Freq Range (GHz)	Connector 1	Connector 2	Style	VSWR Max
A11001P	110	1.0mm Female	1.0mm Female	Straight	1.35
A11002P	110	1.0mm Female	1.0mm Male	Straight	1.35
A11003P	110	1.0mm Male	1.0mm Male	Straight	1.35

1.85mm to 1.0mm



A6504B



A6505B



A6506B



A6507B

Part Number	Freq Range (GHz)	Connector 1	Connector 2	Style	VSWR Max
A6704B	67	1.85mm Female	1.0mm Female	Straight	1.35
A6705B	67	1.85mm Female	1.0mm Male	Straight	1.35
A6706B	67	1.85mm Male	1.0mm Female	Straight	1.35
A6707B	67	1.85mm Male	1.0mm Male	Straight	1.35

1.85mm to 1.85mm



A6701B



A6702B



A6703B



A6501P-Y1



A6703B-RA

Part Number	Freq Range (GHz)	Connector 1	Connector 2	Style	VSWR Max
A6701B	67	1.85mm Female	1.85mm Female	Straight	1.3
A6702B	67	1.85mm Male	1.85mm Male	Straight	1.3
A6703B	67	1.85mm Female	1.85mm Male	Straight	1.3
A6501P-Y1	67	1.85mm Female	1.85mm Female	Bulkhead	1.25
A6701B-RA	50	1.85mm Female	1.85mm Female	Right Angle	1.35
A6702B-RA	50	1.85mm Male	1.85mm Male	Right Angle	1.35
A6703B-RA	50	1.85mm Female	1.85mm Male	Right Angle	1.35

For more mmWave coaxial adapters, please check our website www.rfone.cn

mmWave Waveguide to Coax Adapters



AWR101



AWR101M



AWR19185



AWR2224

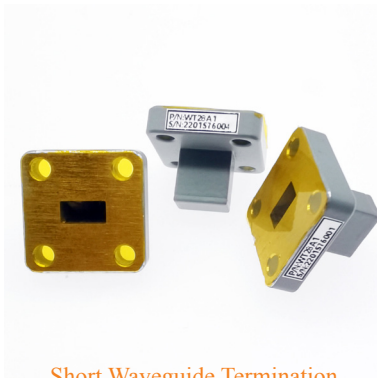


AWR34292

Part Number	Waveguide Size	Coaxial Connector	Freq Range	VSWR Max	Flange Type	Body Style
			(GHz)			
AWR101	WR10	1mm Female	75-110	1.38	UG387/U	Right Angle
AWR101M	WR10	1mm Male	75-110	1.38	UG387/U	Right Angle
AWR121	WR12	1mm Female	60-90	1.38	UG387/U	Right Angle
AWR151	WR15	1mm Female	50-75	1.38	UG385/U	Right Angle
AWR151M	WR15	1mm Male	50-75	1.38	UG385/U	Right Angle
AWR15185	WR15	1.85mm Female	50-67	1.5	UG385/U	Right Angle
AWR19185	WR19	1.85mm Female	39.2-59.6	1.5	UG-383/U	Right Angle
AWR2224	WR22	2.4mm Female	33-50	1.25	UG383/U	Right Angle
AWR2224EL	WR22	2.4mm Female	33-50	1.3	UG383/U	End-launch
AWR2224M	WR22	2.4mm Male	33-50	1.35	UG383/U	Right Angle
AWR2224EM	WR22	2.4mm Male	33-50	1.35	UG383/U	End-launch
AWR28292	WR28	2.92mm Female	26.5-40	1.25	UBR320	Right Angle
AWR28292EL	WR28	2.92mm Female	26.5-40	1.2	UBR320	End-launch
AWR34292	WR34	2.92mm Female	21.7-33	1.2	UBR260	Right Angle
AWR34292EL	WR34	2.92mm Female	21.7-33	1.2	UBR260	End-launch
AWR34292A	WR34	2.92mm Female	21.7-33	1.2	UG1530/U	Right Angle

mmWave Waveguide Termination Loads

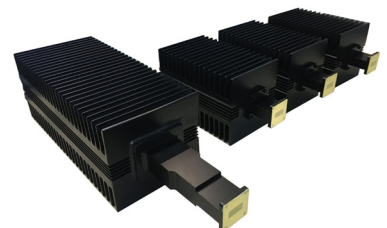
RF ONE offers a complete line of short length, low VSWR, low-medium-high power waveguide terminations covering the waveguide sizes WR19 to WR650, from 1 GHz to 50 GHz. Details can be found at <https://www.rfone.cn/waveguide-components/waveguide-terminations/low-power-waveguide-terminations/>



Short Waveguide Termination



Low VSWR Waveguide Termination



Media and High Power Waveguide Termination

PhaseRel RF/Microwave Cable Assemblies up to 110 GHz

PhaseRel (armored PL series) from RF ONE features excellent phase and amplitude stability with flexure. The internally ruggedized construction ensures reliable performance with longer service life and reduced total cost of test in laboratory, production and field test environments.

Features

- Excellent phase and amplitude stability with flexure and temperature
- Precise and repeatable measurements
- Highly flexible and longer flex life
- Operating to 110GHz, 67GHz, 50GHz, 40GHz, 26.5GHz, 18GHz etc.
- Specially designed connectors, delivering minimizing VSWR
- Strain relief design and multi-layer armors against crush and abrasion
- Dust and moisture proof



Standard Armored PhaseRel models for mmWave applications

Part Number	PL180P-1M1M-L-A	PL230P-185M185M-L-A	PL360P-24M24M-L-A	PL380P-292M292M-L-A
Maximum Frequency (GHz)	110	67	50	40
VSWR Max	1.45	1.4	1.35	1.3
Insertion Loss Max (dB)	14.4	7.1	4.0	2.8
Phase Stability (Deg)	<±12	<±7	<±5	<±5
Amplitude Stability vs Shaking (dB)	<±0.2	<±0.15	<±0.15	<±0.15
Temperature Phase Stability (-40 C to +85 C)	<1500ppm	<1500ppm	<1300ppm	<680ppm
Overall Diameter (mm)	3.8	6.4	6.4	6.4
Flex Life (cycles)	>20000			
Crush Resistance (N/cm)	>1000			

1. Insertion loss refers to the loss of 1 meter cable assembly.
2. L in the Part Number refers to the length of cable assembly.
3. Phase stability data is based on one meter cable assembly wrapped 360 degree at its dynamic bend radius, with two straight connectors at max frequency.

Also Available

- Phase or time delay matching in absolute or relative match values
- Matched to e.g. +/- 1 ps to 67 GHz
- Unarmored PL series cables up to 110 GHz



Check more at <https://www.rfone.cn/cables/flexible-cables/pl-series/>



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