

2024 TEMWELL

RF Custom Design & Manufacture



FILTER SOLUTION EXPERT AND CONSULTANT

Customized RF Components and Microwave

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SELECTIVE EDITION

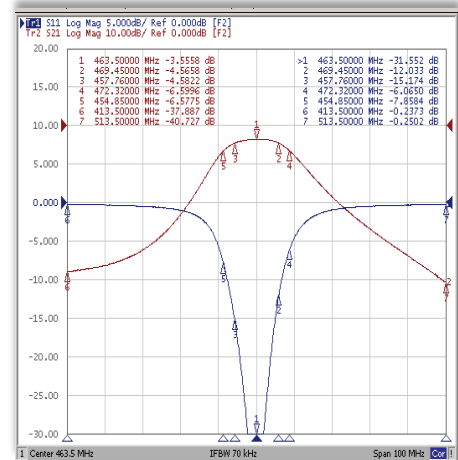
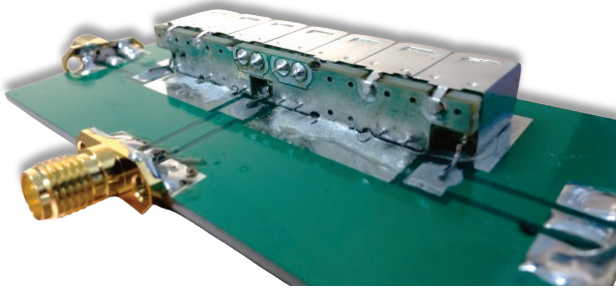
FOR EuMW 2024



Helical Filter (SMD) New!

Features

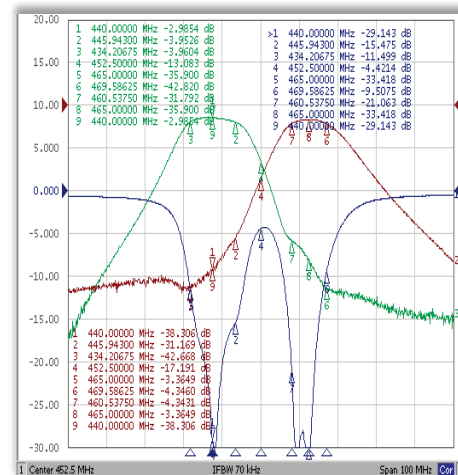
- Tunable
- 45~2600 MHz
- BandPass
- Custom Service on request
- RoHS Compliant



Part Number	TT631098SMT-700M	TT631172SMT-725M	TTW31230SMT-463.5M	TV651148SMT-74.5M
Center Freq	700 MHz	725 MHz	463.5 MHz	74.5 MHz
Insertion Loss	3.5 dB	3.0 dB	4.5 dB	3.0 dB
Bandwidth	30 MHz	28 MHz	16 MHz	20 MHz
Attenuation	43 dB@600MHz	40 dB@625MHz	34 dB@413.5MHz	42 dB@24.5MHz
	31 dB@800MHz	39 dB@825MHz	37 dB@513.5MHz	49 dB@124.5MHz
Return Loss	19 dB	39 dB	31 dB	16 dB
Ripple	<1 dB	<1 dB	<1 dB	<1 dB
Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm

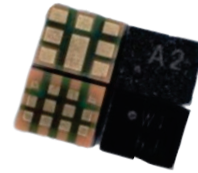
SMD Helical Miniature Duplexer

Part Number	DDQ-440M-465M-SMT	
	Tx	Rx
Center Freq	440 MHz	465 MHz
Insertion Loss	<4.0 dB	
-1dB Bandwidth	8 MHz	
Rejection	>32 dB	>35 dB
Isolation	41 dB	38 dB
Return Loss	> 12 dB	
Impedance	50 Ohm	



Features

- Applications: Wi-Fi UNII1-2a band/
Wi-Fi UNII2c-3 band
- Telecom, Wireless Router, Gateway
- Temperature: -40 °C to +105 °C
- Miniature Size: 1.8(L)x1.4(W)x0.65(H) mm
- Custom Service on request
- RoHS Compliant



BAW Technology Alternatives

P/N: TSB-5250, Passband 5170-5330 MHz (Wi-Fi UNII1-2a band)					
Parameter	Condition [MHz]	Unit	Min.	Typ.	Max.
Insertion Loss	5170-5330	dB		1.3	1.7
Inband Ripple	5170-5330	dB		0.4	0.8
VSWR of Input Port	5170-5330			1.3	1.7
VSWR of Output Port	5170-5330			1.2	1.5
Absolute Attenuation	30-2400	dB	30	37	
	2400-2500	dB	30	37	
	2400-3000	dB	30	34	
	3400-3800	dB	30	37	
	3800-4900	dB	30	33	
	4400-4800	dB	35	42	
	4800-5000	dB	20	28	
	5490-5850	dB	50	60	
	7203-7500	dB	20	24	
10300 -11800	dB	15	18		

P/N: TSB-5662, Passband 5490-5835 MHz (Wi-Fi UNII-2c-3 band)					
Parameter	Condition [MHz]	Unit	Min.	Typ.	Max.
Insertion Loss	5490-5835	dB		2.1	2.5
Inband Ripple	5490-5835	dB		1.0	1.6
VSWR of Input Port	5490-5835			1.8	2
VSWR of Output Port	5490-5835			1.8	2
Absolute Attenuation	30-2400	dB	39	44	
	2400-2500	dB	37	43	
	2400-3000	dB	30	35	
	3400-3800	dB	25	31	
	3800-4900	dB	25	31	
	4400-4800	dB	25	31	
	4800-5000	dB	27	32	
	5170-5330	dB	50	52	
	7203-7500	dB	30	35	
10300 -11800	dB	20	22		

Figure 1: Passband Insertion Loss

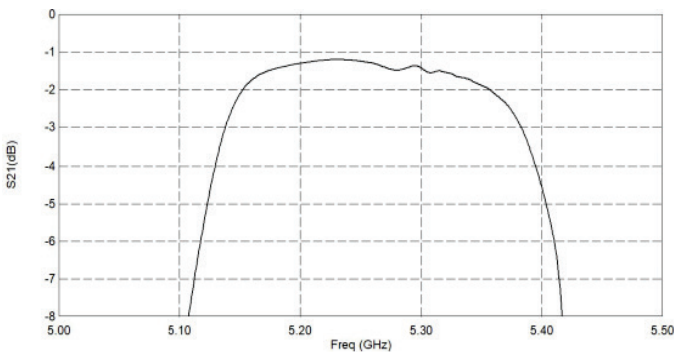


Figure 1: Passband Insertion Loss

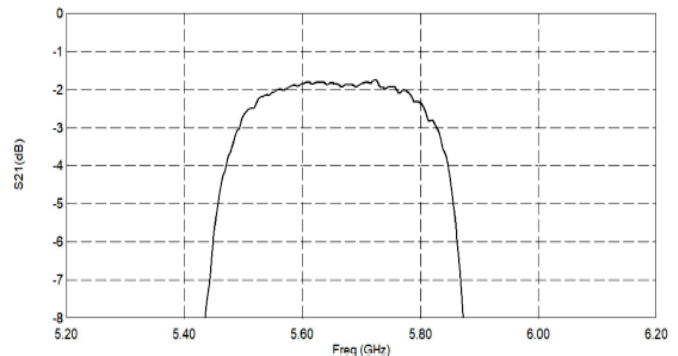


Figure 2: Input & Output Smith Chart

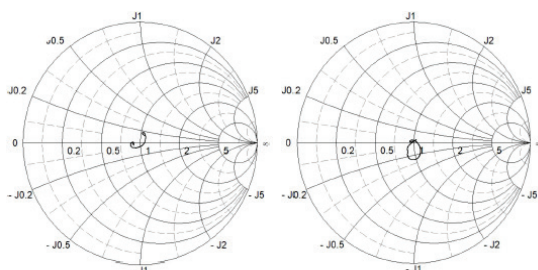
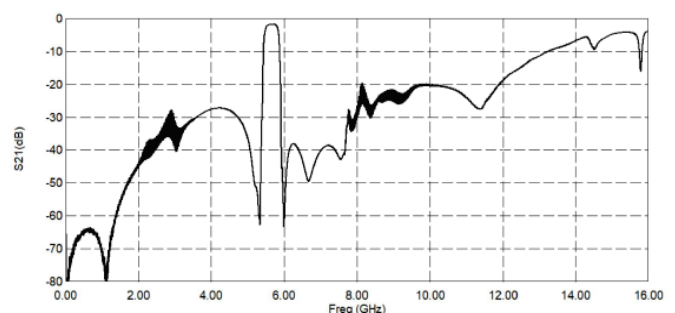


Figure 2: Wideband



Cavity Filters & Duplexers Couplers

Cavity Filters

Cavity Duplexers



	ST-46.5GA74-EL9	STLP-18GA80-EL3	STHP-18GA13-EL4	STHP-18GA13-EL4-SMA
Type	Band Pass	Low Pass	High Pass	High Pass
Freq Range	40~53 GHz	DC~18 GHz	18 ~ 46GHz	18 ~ 28GHz
Insertion Loss	≤ 1.35 dB	≤ 1.0dB @DC~17.3GHz ≤ 3.0dB @17.3~18GHz	≤ 2.0dB @18~19.5GHz ≤ 1.0dB @19.5~42GHz ≤ 2.0dB @42~46GHz	≤ 2.0dB @18~19.5GHz ≤ 1.0dB @19.5~28GHz
VSWR	<1.28:1	<1.6:1	<1.7:1	<1.7:1
Rejection	≥ 80dB @DC~38.1GHz ≥ 55dB @55~56.3GHz ≥ 80dB @56.3~67GHz ≥ 40dB @67~68GHz	≥ 50dB @19.1~26GHz	≥ 60dB @DC~16.2GHz ≥ 30dB @16.2~17GHz	≥ 60dB @DC~16.2GHz ≥ 30dB @16.2~17GHz
Power	5W max.	15W max.	15W max.	15W max.
Temperature	-30°C ~ +70°C	-55°C ~ +85°C	-30°C ~ +70°C	-30°C ~ +70°C
Connector	1.85mm(v)-Female	SMA-Female	2.92mm(K)-Female	SMA-Female

	STCD-14615-15250-A02-EC2		STR-3.3-4.2GA42-EL8	STR-5150-5850-A01-EC3
Type	Duplexer (Dual-Band Pass)		Band Stop	Band Stop
	Rx	Tx	---	---
Freq Range	14.4~14.83 GHz	15.15~15.35 GHz	3.3~4.2 GHz	5150~5850 MHz
Rejection	≥ 60dB @DC~12.4GHz & 18~25GHz		≥50dB	≥40dB
Isolation	≥ 60dB @Tx Band	≥ 60dB @Rx Band	≤ 1.0dB @DC~3030MHz & 4470~8000MHz	≤ 2.0dB @DC~4900MHz & 6100~12000MHz
Insertion Loss @Pass Band	≤2.5dB		< 1.7:1	< 2.0:1
VSWR	< 1.44		---	---
Power	20W		5W max.	20W avg.
Temperature	-30°C ~ +70°C		-15°C ~ +30°C	0°C ~ +60°C
Connector	SMA-Female		SMA-Female	SMA-Female

RF Couplers

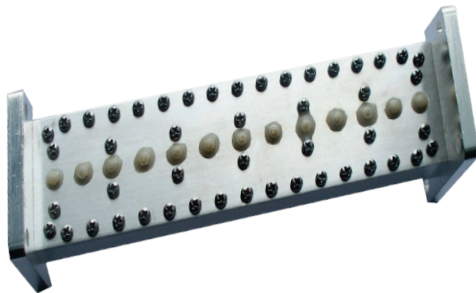


	ST-0.5-18G-E98-EL5	ST-14G-21G-A10-EC1		ST-2-18G-E69-EL6
Type	Directional Coupler	Directional Coupler	Type	180° Hybrid Coupler
Freq Range	0.5~18 GHz	14~21 GHz	Freq Range	2~18 GHz
Coupling	10dB±0.6dB	10dB±1.0dB	Nominal Split	3.01dB
Coupling Sensitivity	≤ ±0.8dB	≤ ±1.0dB	Amplitude Balance	≤ ±0.8dB
Insertion Loss	≤ 1.3dB	≤ 1.0dB	Insertion Loss	≤ 2.9dB
VSWR	<1.4:1	<1.6:1	VSWR	<1.7:1
Directivity	≥ 15dB	≥ 16dB	Phase Balance	≤ ±15°
Power	50W	20W	Power	50W
Temperature	-30°C ~ +70°C	-40°C ~ +80°C	Temperature	-55°C ~ +85°C
Connector	SMA-Female	SMA-Female	Connector	SMA-Female

Waveguide Filter Repeater Duplexer

Waveguide Filter

- C-Band
- Wall Mounted
- Indoor & Outdoor IP66
- High Power
- Custom Service on request
- RoHS Compliant

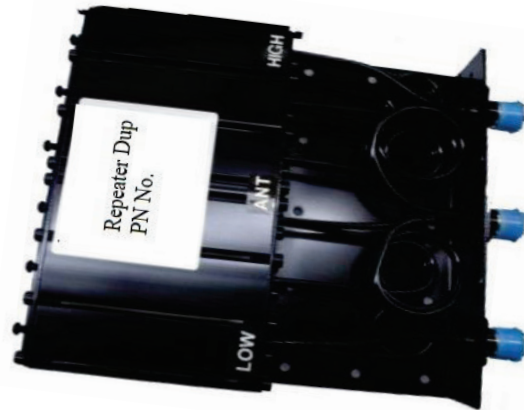


STW-3700-4200M-963-EH5

Frequency Range	3700-4200 MHz
Insertion Loss	≤0.4 dB (Outcluding connectors) ≤0.5 dB (Including connectors)
Ripple	≤0.2 dB
Group Delay	≤8 ns
Rejection (dB)	≥75 min@3.4-3.5 GHz ≥70 min@3.5-3.6GHz ≥75 min@5.8-6.5GHz
Return Loss	≥18 dB
Input Power	<100 W
Peak Power	<400 W
Connector Type	CPR-229G (input) CPR-229F (output)
Operational Temperature	-40 to +65°C
Dimensions(LxWxH)	190x170x130 mm

Repeater Duplexer

- Application: Mobile Radio
- Impedance: 50 Ohms
- Isolation: >70 dB
- High Stability & Rugged



Model No.	Band Pass(MHz)	Separation (MHz)	Insertion Loss(dB)	VSWR	Rejection (dB)	Connector
STRD-136-174-50-4.6	dot	≥4.6	≤1.5	≤1.3	≥70	N-K
STRD-136-174-50-2-4.6	2	≥4.6	≤1.5	≤1.3	≥70	SMA/N-K
STRD-330-520-50-5	dot	≥4.6	≤1.5	≤1.3	≥70	N-K
STRD-330-360-50-5-10	5	≥10	≤1.5	≤1.3	≥70	SMA/N-K
STRD-360-400-50-4-10	4	≥10	≤1.5	≤1.3	≥70	SMA/N-K
STRD-400-520-50-3-10	4	≥10	≤1.5	≤1.3	≥70	SMA/N-K

Features

- Multi-Bands Support
- Custom Service on request
- Indoor & Outdoor
- RoHS Compliant

Low PIM Combiners



Bands	3	4	8	
Frequency	700-876 MHz 1000-1320 MHz 1520-1710 MHz	400-512 MHz 790-876 MHz 1000-1350 MHz 5000-6000 MHz	420-450 MHz 700-870 MHz 902-960 MHz 1100-1610 MHz	1805-2170 MHz 2400-2700 MHz 3400-3800 MHz 4900-5900 MHz
PIM3	≤ -160dBc	≤ -130dBc	≤ -140dBc	
Power	200 W	400 W	500 W	

Low PIM Power Divider

STD-617-4200M-950-EH1



Frequency	617-4200MHz			Input Power	<300W
Way	2	3	4	PIM3	≤ -150dBc @2x43 dBm
Insertion Loss	≤ 0.3 dB	≤ 0.4 dB	≤ 0.5 dB	Connector	4.3-10 Female (Twist head)



Low PIM Hybrid Combiner

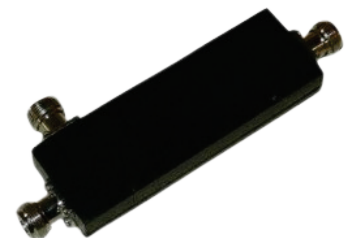
STC-550-4200M-953-EH4

Frequency	550-4200 MHz	Input Power	<300-500W
Insertion Loss	3.1±0.6dB	PIM3	≤ -160dBc @2x43 dBm
Isolation	>25 dB	Connector	N / 4.3-10 / 7-16 Female

Low PIM Directional Coupler

STDC-550-4000M-951-EH2

Frequency	550-4000 MHz					Directivity	≥ 20dB @550-2700 MHz ≥ 18dB @2700-4000 MHz
Coupling	5±1.0 dB	6±1.0 dB	7±1.0 dB	8±1.2 dB	10±1.2 dB	Return Loss	≥ 21dB @550-2700 MHz ≥ 19dB @2700-4000 MHz
Insertion Loss	<2.4 dB	<1.8 dB	<1.6 dB	<1.2 dB	<0.8 dB	Input Power	< 300W
Coupling	13±1.3 dB	15±1.3 dB	20±1.5 dB	30±1.5 dB		PIM3	≤ -160dBc @2x43 dBm
Insertion Loss	<0.5 dB	<0.4 dB	<0.3 dB	<0.3 dB		Connector	4.3-10 Female

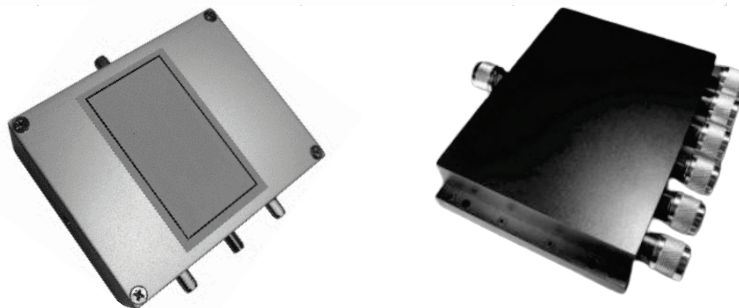


Features

- Wide Frequency Range
- High Isolation
- Good Phase Consistency
- Strong Anti-Interference
- Custom Service on request
- RoHS Compliant

RF Combiners

Bands	1	5	1	1
Freq Range	470-860 MHz	88-108 & 136-174 & 450-520 & 740-868 & 1350-1850 MHz	8-12 GHz	10-15 GHz
Insertion Loss	<0.5 dB	<0.5 dB	<0.8 dB	<0.8 dB
Isolation	>20 dB	>60 dB	>35 dB	>35 dB
VSWR	<1.25:1	<1.25:1	<1.3:1	<1.3:1
Phase Balance	±5°	na	±5°	±5°
Amplitude Balance	±0.2 dB	na	±0.3 dB	±0.3 dB
Connector	27- 40	SMA-f	SMA-f	SMA-f
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
Power Handling	500 W	50 W	5 W	5 W
Operating Temperature	-40°C to +80°C	-40°C to +80°C	-55°C to +90°C	-55°C to +90°C
Dimensions(LxWxH)	380x178x52 mm	200x100x22 mm	150x70x15 mm	150x70x15 mm



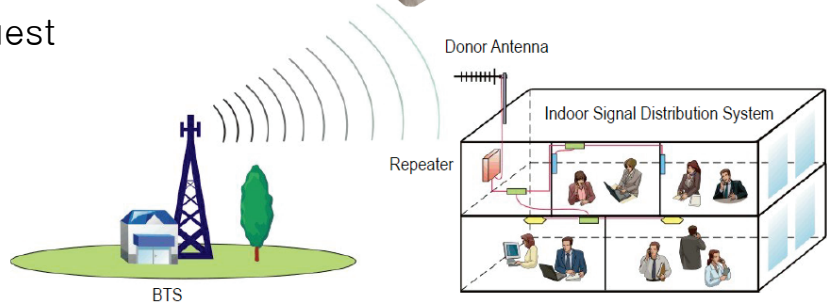
RF Splitters

Way	1 in-8 out	1 in-8 out	1 in-4 out
Freq Range	0.8-6 GHz	6-18 GHz	27-29 GHz
Insertion Loss	<0.8 dB	<0.8 dB	<0.4 dB
Isolation	>18 dB	>18 dB	>20 dB
VSWR	<1.4:1	<1.4:1	<1.3:1
Phase Balance	±5°	±5°	±5°
Amplitude Balance	±0.2 dB	±0.2 dB	±0.2 dB
Connector	N-f	SMA-f	SMA-f
Impedance	50 Ω	50 Ω	50 Ω
Power Handling	50W	50W	50W
Operating Temperature	-55°C to +90°C	-55°C to +90°C	-55°C to +90°C
Dimensions(LxWxH)	158x68x20 mm	138x68x12 mm	65x45x12 mm

Portable LCD Repeater

Features

- 5G n1, IMT 2100
- LCD Control Panel
- Automatic Gain Balance
- Portable & Band Selective
- BTS & Cellular Relays
- Custom Service on request
- RoHS Compliant



STPR-LTE-B120

To expand signal coverage or fill signal blind area where signal is weak or unavailable.
Indoor:Hotels, exhibition centers, basements, shopping malls, offices, parking lots, and etc.

	Uplink	Downlink
Frequency Range	1920-1980 MHz	2110-2170 MHz
Bandwidth (fixed)	14.8MHz	
Center Freq Adjustment Range	1927.5-1972.5MHz	2117.5-2162.5MHz
Center Freq Adjustment Step	200kHz	
Gain	65±3dB	70±3dB
Output Power (customized)	17±3 dBm	20±3dBm
Manual Gain Control	25dB, 1dB/steps	
AGC control range	20dB	
Max. Input Power	-10dBm	
Ripple in band	±3dB	
VSWR	2	
Group delay time	5µs	
I/O Impedance	50 Ω	
Noise Figure	8dB	
Error Vector Magnitude (EVM)	12.5%	
Peak Code Domain Error (PCDE)	-35dB	
Third-order Inter-Modulation	Max.-40dBc	
Connector Type	N-Female	
Power Consumption	10W	
Power Supply	AC100~ 240V DC+5V 2A	
Humidity	95%	
Dimensions	178*110*40mm	
Operating Temperature	0°C ~ +40°C	
Weight	3kg	
IP Rating	IP40	

Power Amplifier TETRA Combined System

Power Amplifier

STAP-450-470-ER1

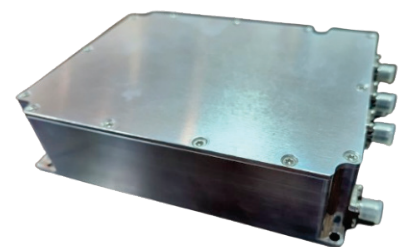


		Note
Freq Range	450-470 MHz	
Output power	40±0.5 dBm	
Input VSWR	≤1.5	
Gain	50±1.0 dB	465MHz, Pout=40dBm
Gain Linearity	≤1.0 dB	465MHz, CW, 33~44dBm
Ripple	≤1.5 dB	@ Pin= -10dBm
EVM	≤5%	
ACLR ±5±10MHz	≤-45 dBc	465MHz, PAR=8, LTE 5MHz
Quiescent Current	0.9±0.2 A	25°C~35°C
Working Current	≤2.2 A	
Output Power reading	≤1.0 dB	33~40dBm
	≤1.5 dB	25~32dBm
Reflection Power reading	≤1.0 dB	33~40dBm
Power Supply	DC 48V	
PA-IN & OUT	SMA-F, 50Ω	Height:10mm
Working Temperature	-40°C ~65°C	
Storage Temperature	-40°C ~95°C	
Relative Humidity	5%~95%, Non-condensing	
Storage Humidity	5%~98%, Non-condensing	
Atmospheric Pressure	70~106 kPa	
Wind Pressure	40 Pa	
Dimensions	185*110*25mm	
Weight	0.25 KG	

TETRA Braodband Combined System

MINI TWO-TX / TWO-RX ST-372-386-MBS-EX4

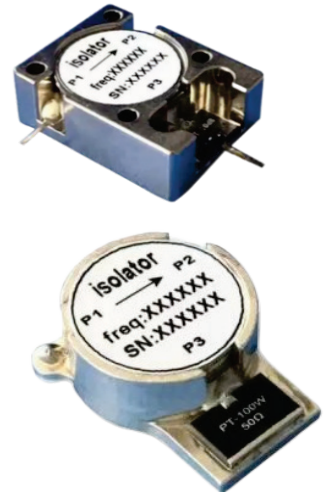
	Rx	Tx
Freq Band	372-376 MHz	382-386 MHz
Bandwidth	4 MHz	4 MHz
Insertion Loss	ANT-RX: 6.2 dB max.	TX-ANT: 6.5 dB max.
Isolation (min)	TX-TX: 50 dB	ANT-TX: 25 dB RX-RX: 25 dB
VSWR	1.3	
Input Power	20W	
Temperature	-30°C~+60°C	
Dimensions	134*100*35mm	
Weight	0.6 KG	



Low PIM SMD Circulator

STCR-925-960-EX1

Freq Range	925-960 MHz	
	@25±5°C	@-40°C ~+125°C
Insertion Loss	0.2 dB max.	0.25 dB max.
Isolation	23 dB max.	20 dB max.
Return Loss	23 dB max.	20 dB max.
Average Power	160 W	
Peak Power	1600 W	
Group delay	0.4-2.8 ns	
IMD3	≤ -78dBc@2x50W, 5MHz Spacing	
Direction of Circulation	Clockwise, CW	
Operating Temp	-40°C ~ +125°C	



X-Band Circulator

STCR-9-10G-14A-EX2

Freq Range	9-10 GHz	Isolation	20 dB
Insertion Loss	0.4 dB	Power	20 W
VSWR	20 dB	Operating Temp	-45°C ~ +85°C

Ku-Band Isolator

STIR-14-17G-14A-EX3

Freq Range	14-17 GHz	Isolation	18 dB
Insertion Loss	0.7 dB	Power	2 W
VSWR	16.6 dB	Operating Temp	-40°C ~ +85°C