



RF360
Europe GmbH

SAW Components

BeiDou/GPS/Glonass Extractor Filter

BeiDou/GPS/Glonass Extractor

Series/type:	B8636
Ordering code:	B39162B8636P810
Date:	December 16, 2014
Version:	2.1

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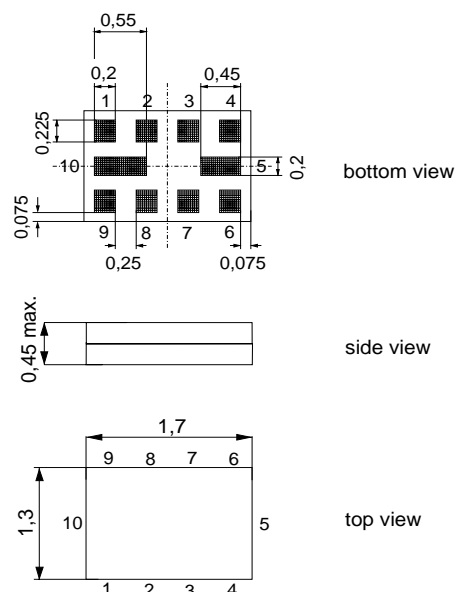
Data Sheet

Application

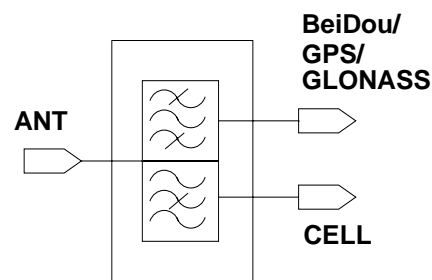
- Low-loss BeiDou/GPS/Glonass Extractor
- Using common antenna for BeiDou/GPS/Glonass and Cellular bands
- Placed between antenna and cellular front-end switches and filters
- Usable passbands GNSS: 1559.05 -1563.144 MHz, 1574.42-1576.42 MHz, 1597.55-1605.89 MHz
- Usable passbands Cellular: 699 - 960 MHz, 1710 - 2690 MHz
- No switches and control lines required
- Integrated low loss BeiDou/GPS/Glonass filter with single ended output 50 Ω


Features

- Package size 1.7 x 1.3 x 0.4 mm³
- RoHS compliant
- Approx. weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**


Pin configuration

- 1 ANT input
- 4 BeiDou/GPS/Glonass output
- 9 CELL output
- 8 Shunt coil 9.1nH to ground
- 2,3,5,6,7,10 To be grounded



Data Sheet

Characteristics

Temperature range for specification:	T = -30 °C to +85 °C
ANT terminating impedance:	Z _{ANT} = 50 Ω
BeiDou/GPS/Glonass terminating impedance:	Z _{BGG} = 50 Ω
CELL terminating impedance:	Z _{CEL} = 50 Ω

					B8636			
					min.	typ. @ 25 °C	max.	
Maximum insertion attenuation					α_{\max}			MHz
ANT-BeiDou	1559.052	...	1563.144	MHz		1.1	2.6	dB
ANT-GPS	1574.42	...	1576.42	MHz		0.8	1.5	dB
ANT-Glonass	1597.55	...	1605.89	MHz		1.45	3.5	dB
ANT-CELL	699.0	...	716.0	MHz		0.9	—	dB
ANT-CELL	704.0	...	824.0	MHz		0.9	1.8	dB
ANT-CELL	824.0	...	960.0	MHz		0.8	1.5	dB
ANT-CELL	1710.0	...	1990.0	MHz		1.5	2.5	dB
ANT-CELL	2110.0	...	2170.0	MHz		1.4	2.5	dB
ANT-CELL	2300.0	...	2400.0	MHz		1.3	2.5	dB
ANT-CELL	2500.0	...	2690.0	MHz	1.3	2.5	dB	
Attenuation ANT-BeiDou/GPS/Glonass								
	100.0	...	824.0	MHz	38	33	dB	
	824.0	...	960.0	MHz	48	33	dB	
	1710.0	...	1990.0	MHz	43	34	dB	
	2110.0	...	2170.0	MHz	40	30	dB	
	2400.0	...	2500.0	MHz	39	30	dB	
	2500.0	...	2690.0	MHz	36	29	dB	
VSWR (Antenna port)								
BeiDou	1559.052	...	1563.144	MHz	1.2	2.0		
GPS	1574.42	...	1576.42	MHz	1.3	2.0		
Glonass	1597.55	...	1605.89	MHz	1.5	2.0		
CELL	699.0	...	716.0	MHz	1.4	—		
CELL	704.0	...	824.0	MHz	1.4	2.0		
CELL	824.0	...	960.0	MHz	1.5	2.0		
CELL	1710.0	...	1990.0	MHz	1.5	2.5		
CELL	2110.0	...	2170.0	MHz	1.3	2.0		
CELL	2300.0	...	2400.0	MHz	1.2	2.0		
CELL	2500.0	...	2690.0	MHz	1.5	2.5		
VSWR (BeiDou/GPS/Glonass port)								
BeiDou	1559.052	...	1563.144	MHz	1.2	2.0		
GPS	1574.42	...	1576.42	MHz	1.4	2.0		
Glonass	1597.55	...	1605.89	MHz	1.2	2.0		



		B8636		
		min.	typ. @ 25 °C	max.
VSWR (CELL port)				
	699.0 ... 716.0 MHz		1.35	—
	704.0 ... 824.0 MHz		1.35	2.0
	824.0 ... 960.0 MHz		1.5	2.0
	1710.0 ... 1990.0 MHz		1.5	2.5
	2110.0 ... 2170.0 MHz		1.3	2.5
	2300.0 ... 2400.0 MHz		1.2	2.0
	2500.0 ... 2690.0 MHz		1.5	2.5
Isolation between CELL and BeiDou/GPS/Glonass path				
	699.0 ... 824.0 MHz		50	dB
	824.0 ... 960.0 MHz		52	dB
	1710.0 ... 1990.0 MHz		46	dB
	2110.0 ... 2170.0 MHz		45	dB
	2500.0 ... 2690.0 MHz		39	dB


Maximum ratings

Storage temperature range	T_{stg}	-40/+85	°C	
DC voltage	V_{DC}	5 ¹⁾	V	
ESD voltage	V_{ESD}	50 ²⁾	V	Machine Model
		300 ³⁾	V	Human Body Model
		600 ⁴⁾	V	Charge Device Model
Input power at CELL port				55° C, 5000 hours:
704 ... 915 MHz	P_{IN}	27	dBm	CW signal
1710 ... 2690 MHz	P_{IN}	27	dBm	CW signal
824 ... 849 MHz	P_{IN}	35	dBm	GSM, duty cycle 1:8 effective power in On-state
880 ... 915 MHz	P_{IN}	35	dBm	GSM, duty cycle 1:8 effective power in On-state
1710 ... 1785 MHz	P_{IN}	33	dBm	GSM, duty cycle 1:8 effective power in On-state
1850 ... 1910 MHz	P_{IN}	33	dBm	GSM, duty cycle 1:8 effective power in On-state

1) 5V, 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy

2) acc. to JESD22-A115B (MM - machine model), 1 negative & 1 positive pulses

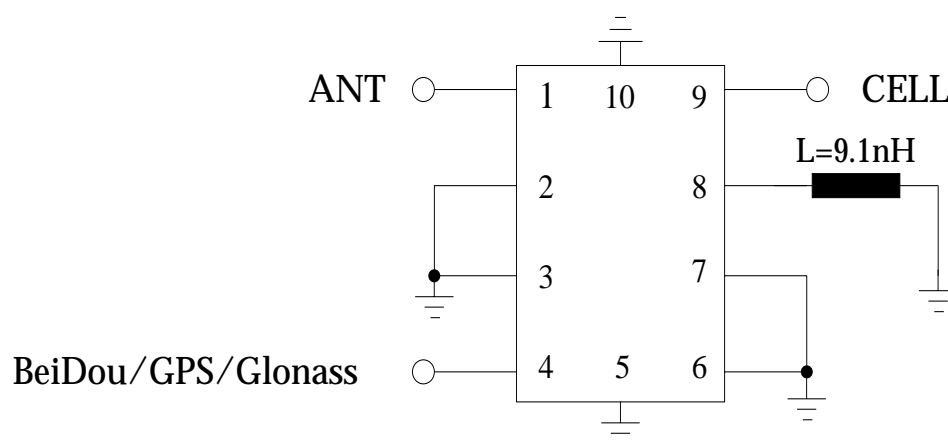
3) acc. to JESD22-A115F (HBM - Human Body Model), 1 negative & 1 positive pulses

4) acc. to JESD22-C101C (CDM - Field Inducted Charge Device Model), 3 negative & 3 positive pulses

Data Sheet

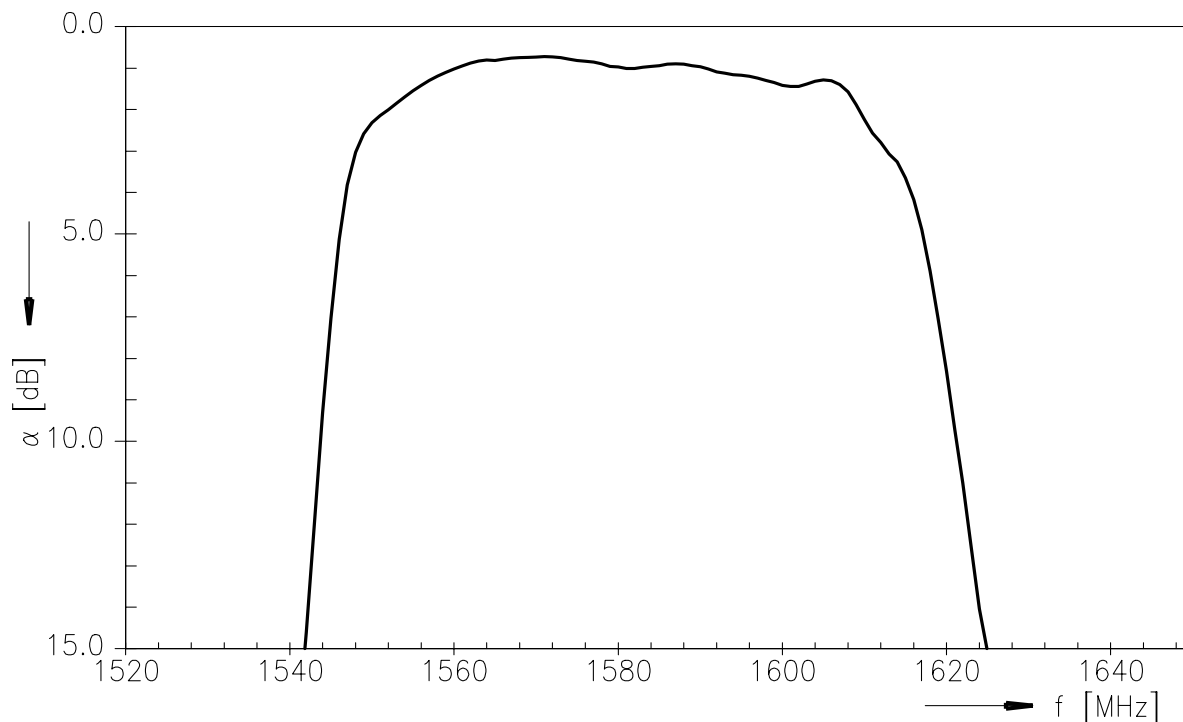

Matching network
 $L = 9.1 \text{ nH}$

Recommended coil type: TDK MLG0603 P-series

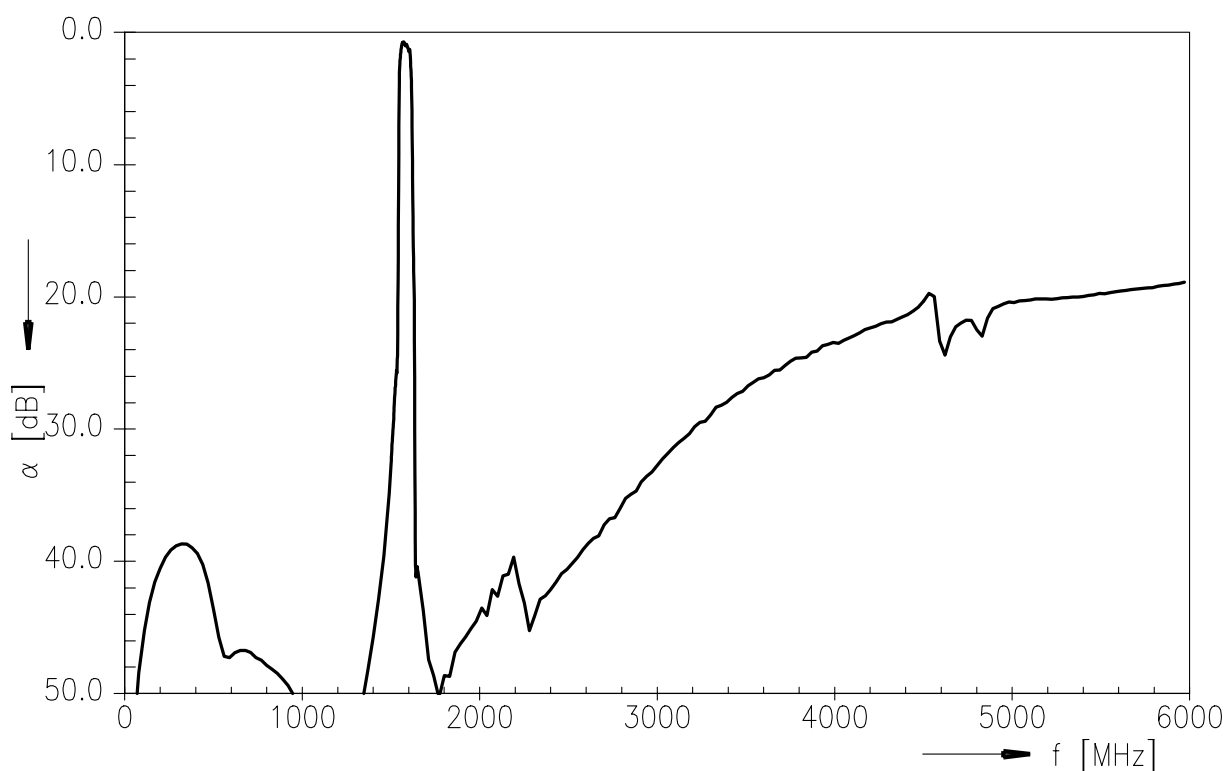




ANT-BeiDou/GPS/Glonass (transfer function passband)

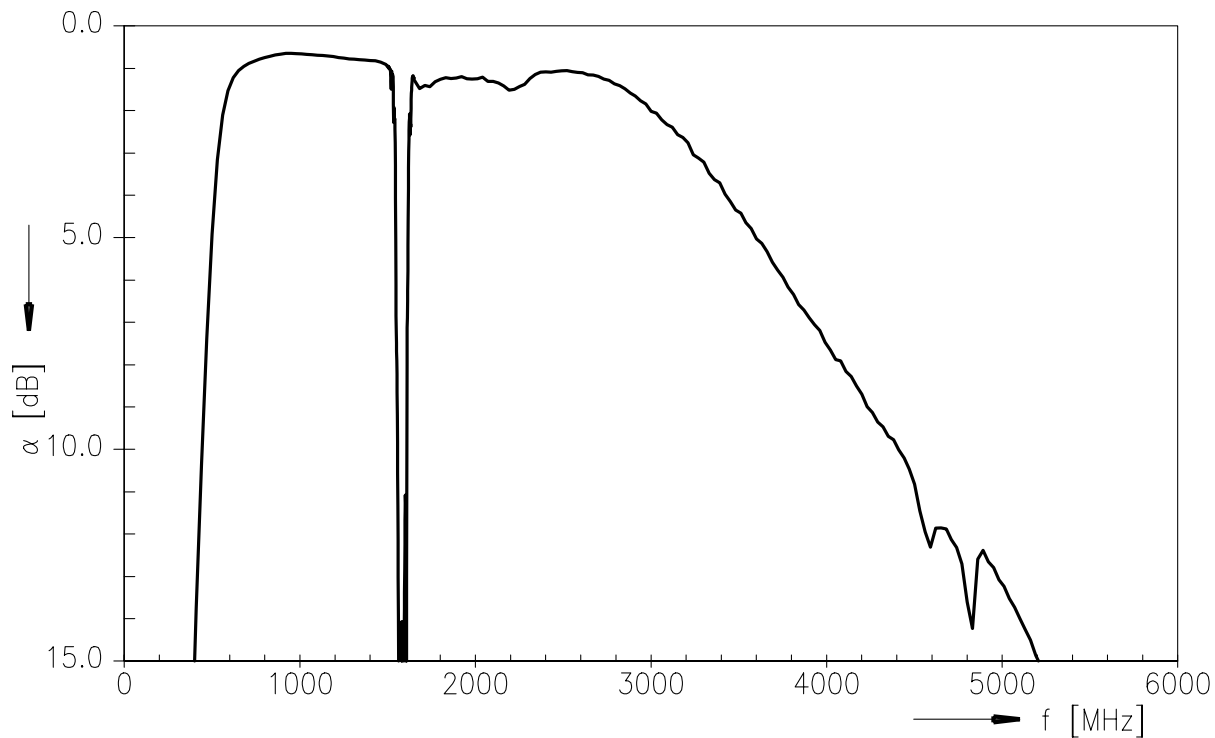


ANT-BeiDou/GPS/Glonass (transfer function wideband)

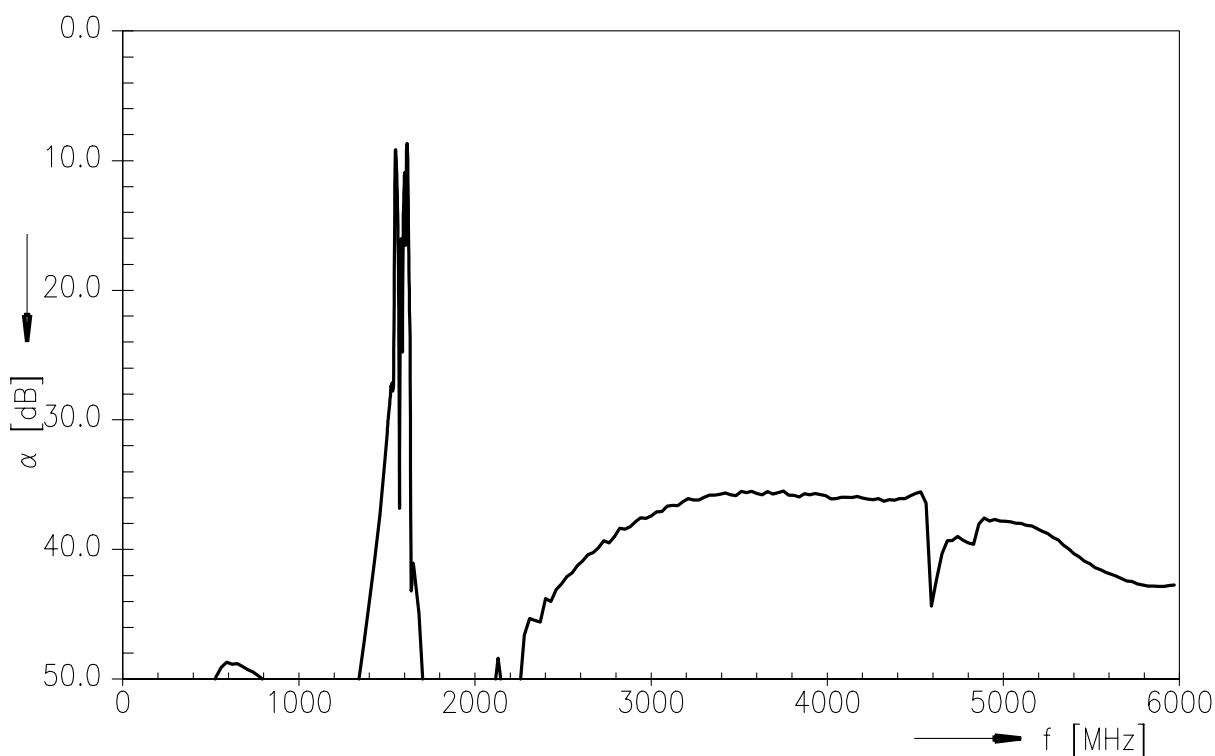




ANT-CELL (transfer function)



GPS-CELL (isolation, transfer function)

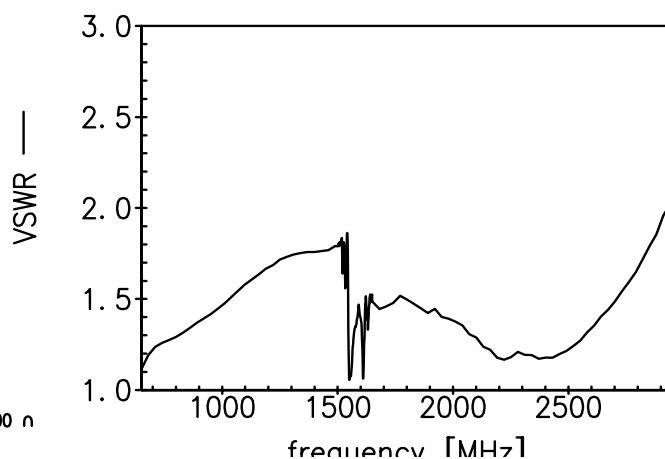
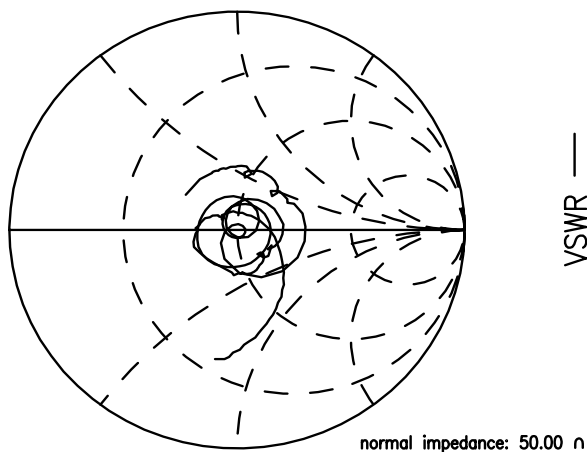


Data Sheet

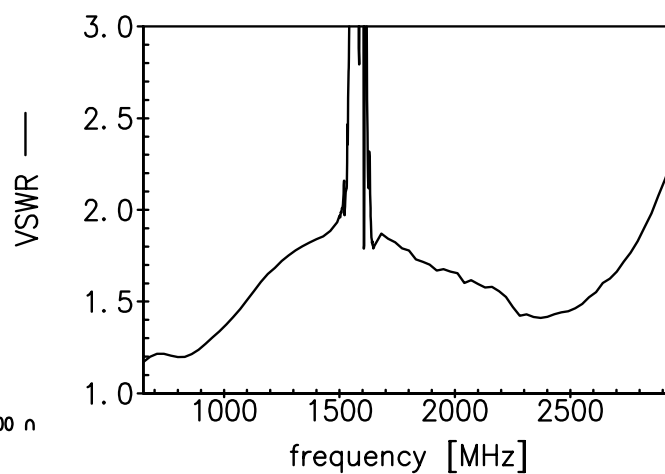
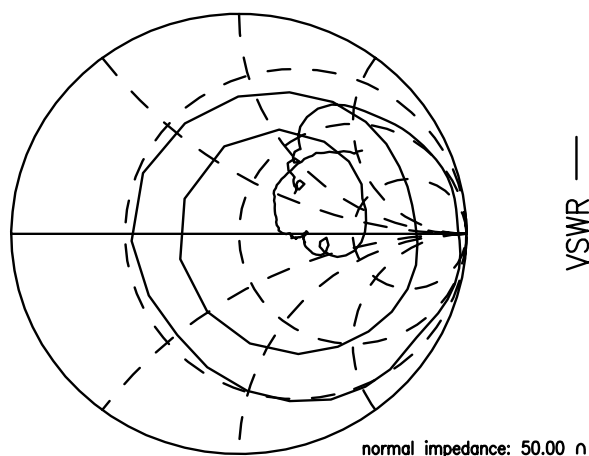


Smith charts / VSWR

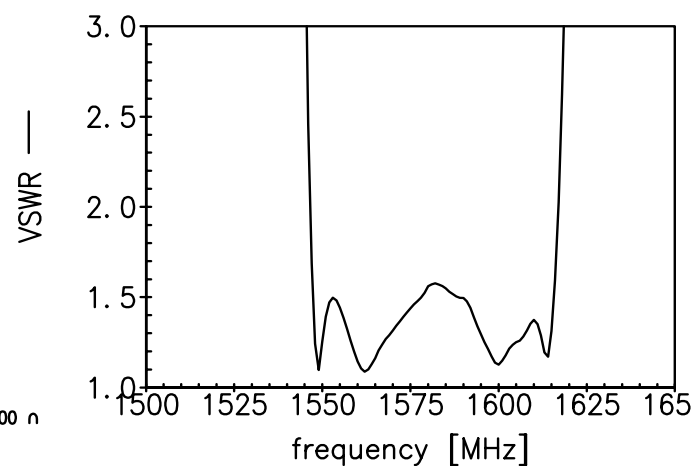
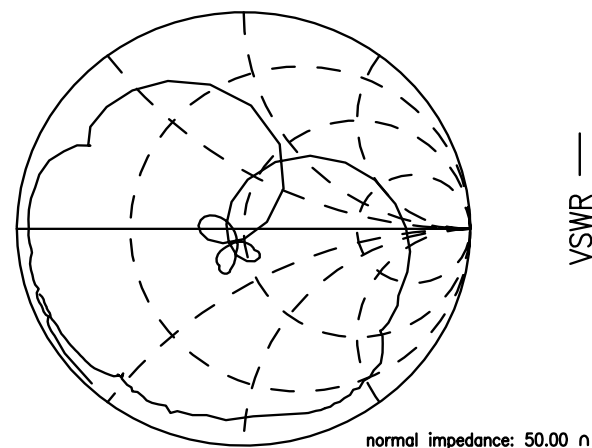
S₁₁ ANT



S₂₂ CELL



S₃₃ BeiDou/GPS/Glonass




References

Type	B8636
Ordering code	B39162B8636P810
Marking and package	C61157-A8-A148
Packaging	F61074-V8222-Z000
Date codes	L_1126
S-parameters	B8636_NB.s3p, B8636_WB.s3p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."
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Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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