Qualcomm

RF360
Europe GmbH

SAW Components

SAW Duplexer for Femtocell

Band 1 (3G/LTE)

Series/type:	**B8637**
Ordering code:	**B39212B8637P810**
Date:	December 05, 2014
Version:	2.0

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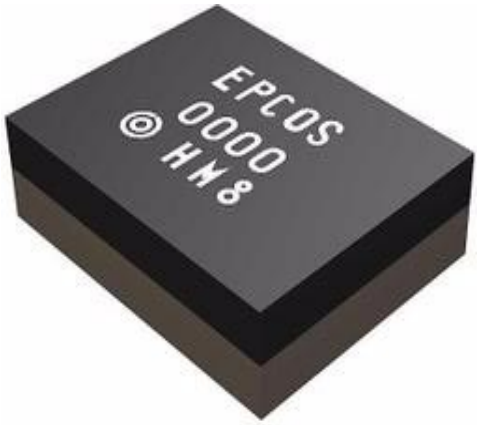
EPCOS AG is a TDK Group Company.

Data Sheet SMD

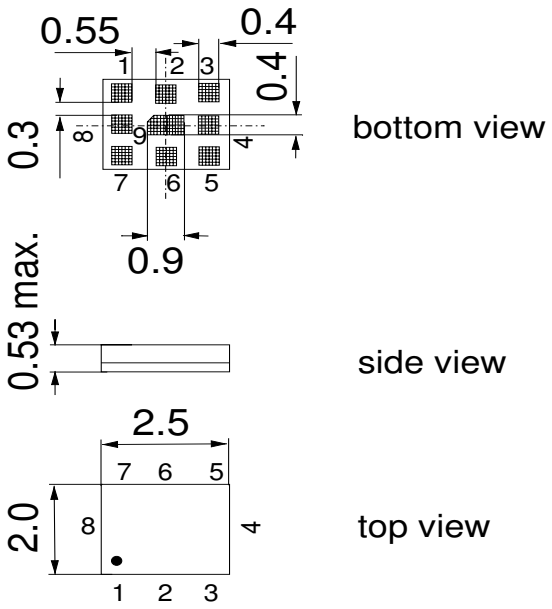
Application

- Low-loss SAW duplexer for 3G/LTE femtocell systems (Band 1)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz
- High power durability
- Rx = Uplink = *1920-1980 MHz*
- Tx = Downlink = *2110-2170 MHz*



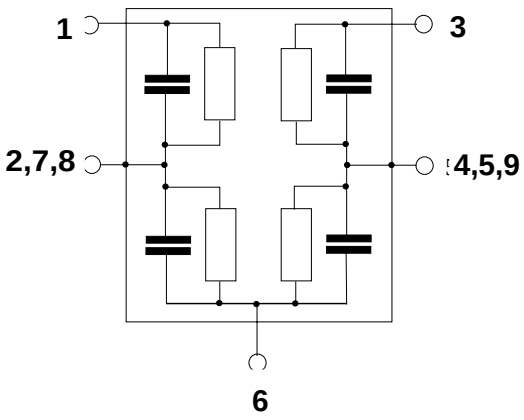
Features

- Package size 2.5 * 2.0 mm²
- max. Package height 0.53 mm
- RoHS compatible
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, Au-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- Moisture Sensitivity Level 3



Pin configuration

3	Rx output
1	Tx input
6	Antenna
2, 4, 5, 7, 8, 9	To be grounded



Data Sheet SMD

Characteristics

Temperature range for specification: T = –10 ˚C to +85 ˚C
Antenna terminating impedance: Z_{ANT}= 50 Ω // 3.0 nH
RX terminating impedance: Z_{RX} = 50 Ω
TX terminating impedance: Z_{TX} = 50 Ω

Characterisitcs TX - ANT		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C		2140.0		MHz
Maximum insertion attenuation	α_{max}				
2110.0 ... 2170.0 MHz		-	2.0	2.4	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2110.0 ... 2170.0 MHz		-	0.8	1.6	dB
Error Vector Magnitude	EVM[1)]				
2112.5 ... 2167.5 MHz		-	0.5	1.5	%
Input VSWR (TX port)					
2110.0 ... 2170.0 MHz		-	1.7	2.2	
Output VSWR (ANT port)					
2110.0 ... 2170.0 MHz		-	1.5	2.0	
Attenuation	α				
10.0 ... 1574.0 MHz		30	35	-	dB
843.0 ... 894.0 MHz		30	40	-	dB
1574.0 ... 1606.0 MHz		30	34	-	dB
1606.0 ... 1880.0 MHz		30	34	-	dB
1805.0 ... 1880.0 MHz		30	40	-	dB
1920.0 ... 1980.0 MHz		45	51	-	dB
2250.0 ... 2400.0 MHz		30	42	-	dB
2400.0 ... 2500.0 MHz		30	43	-	dB
2500.0 ... 2700.0 MHz		23	42	-	dB
2700.0 ... 3000.0 MHz		23	42	-	dB
2620.0 ... 2690.0 MHz		23	42	-	dB
3000.0 ... 3800.0 MHz		10	27	-	dB
3800.0 ... 4220.0 MHz		8	20	-	dB
4220.0 ... 4340.0 MHz		5	15	-	dB
4340.0 ... 5000.0 MHz		3	10	-	dB
5000.0 ... 6000.0 MHz		3	9	-	dB

1) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141

Characteristics

Temperature range for specification: T = –10 ˚C to +85 ˚C
Antenna terminating impedance: Z_{ANT} = 50 Ω // 3.0 nH
RX terminating impedance: Z_{RX} = 50 Ω
TX terminating impedance: Z_{TX} = 50 Ω

Characterisitcs ANT - RX		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C		1950.0		MHz
Maximum insertion attenuation	α_{max}				
1920.0 ... 1980.0 MHz		-	2.0	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0 ... 1980.0 MHz		-	0.9	2.2	dB
Error Vector Magnitude	EVM[1)]				
1922.5 ... 1977.5 MHz		-	1.5	3.0	%
Input VSWR (ANT port)					
1920.0 ... 1980.0 MHz		-	1.5	2.0	
Output VSWR (RX port)					
1920.0 ... 1980.0 MHz		-	1.8	2.2	
Attenuation	α				
10.0 ... 1785.0 MHz		30	40	-	dB
1785.0 ... 1880.0 MHz		20	44	-	dB
1880.0 ... 1900.0 MHz		4	8	-	dB
2000.0 ... 2110.0 MHz		2.5	12	-	dB
2110.0 ... 2170.0 MHz		43	47	-	dB
2255.0 ... 2400.0 MHz		25	33	-	dB
2400.0 ... 2500.0 MHz		35	48	-	dB
2500.0 ... 3840.0 MHz		15	25	-	dB
3840.0 ... 3960.0 MHz		17	24	-	dB
3960.0 ... 5000.0 MHz		17	22	-	dB
5000.0 ... 5760.0 MHz		15	26	-	dB
5760.0 ... 5940.0 MHz		15	26	-	dB

1) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141

Data Sheet SMD

Characteristics

Temperature range for specification: T = –10 ˚C to +85 ˚C
ANT terminating impedance: Z_{Ant} = 50 Ω // 3.0 nH
RX teminating impedance: Z_{Rx} = 50 Ω
TX terminating impedance: Z_{Tx} = 50 Ω

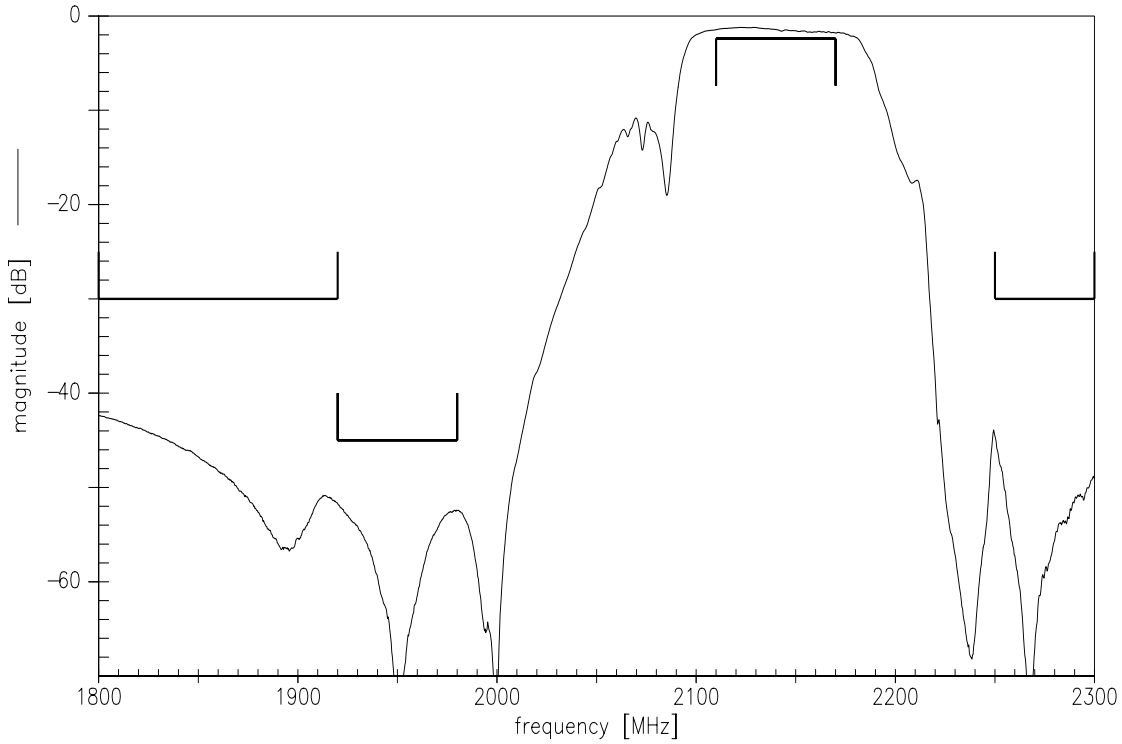
Characteristics TX-RX		min.	typ. @ 25 ˚C	max.	
Attenuation	α				
1920.0 ... 1980.0 MHz		47	54	-	dB
2110.0 ... 2170.0 MHz		50	55	-	dB

Maximum Ratings

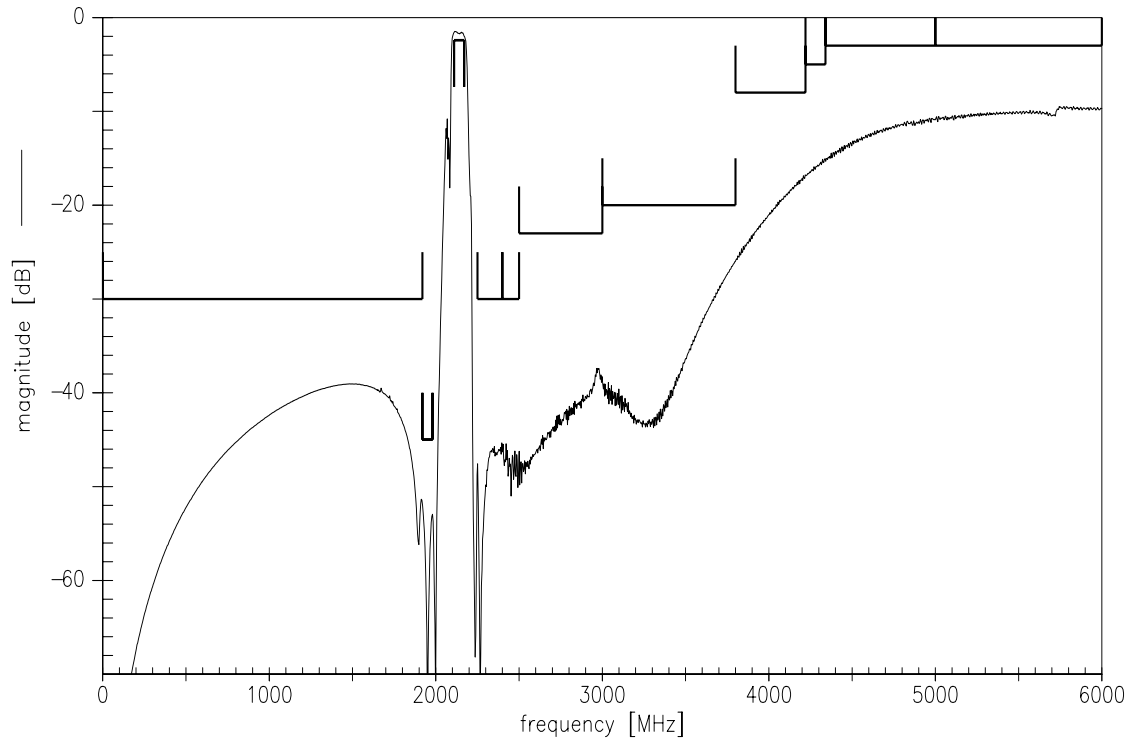
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 1 pulse
Input power at pin 1				source and load impedance 50 Ω
2110.0 ...2170.0 MHz	P_{in}	28	dBm	} LTE 5 MHz downlink average power T = 55˚C, 50.000 h
elsewhere	P_{in}	10	dBm	

1) According to JESD22-A115A (machine model), 1 negative and 1 positive pulses.

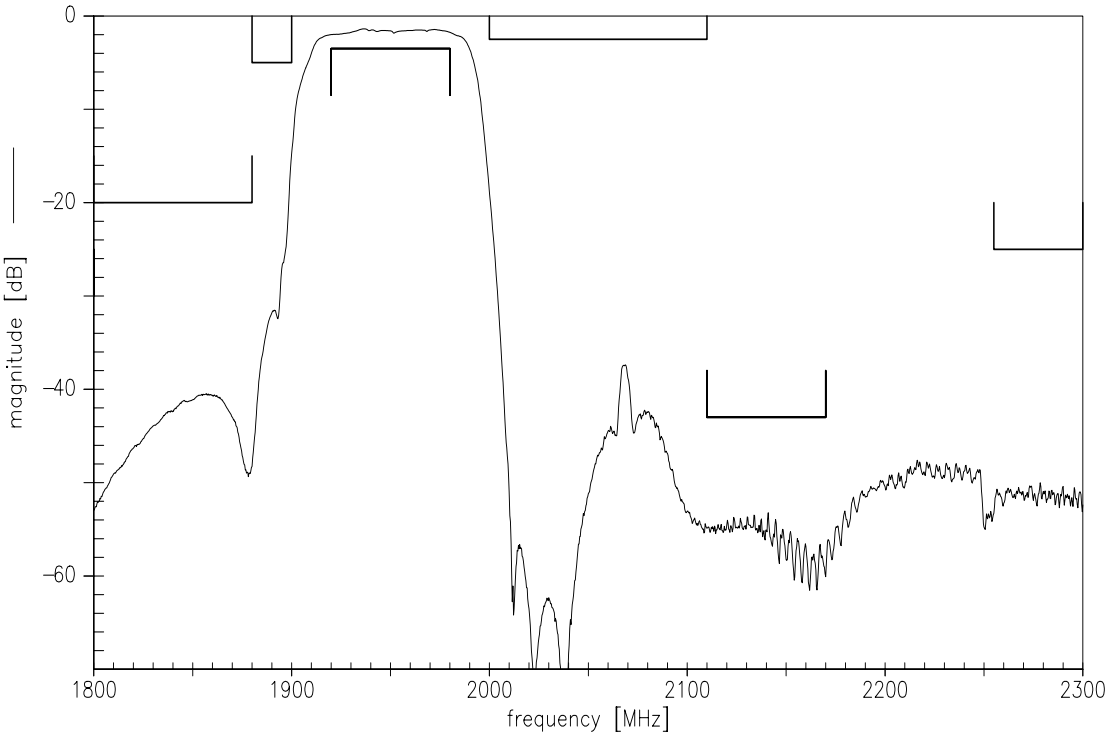
Frequency Response TX-ANT



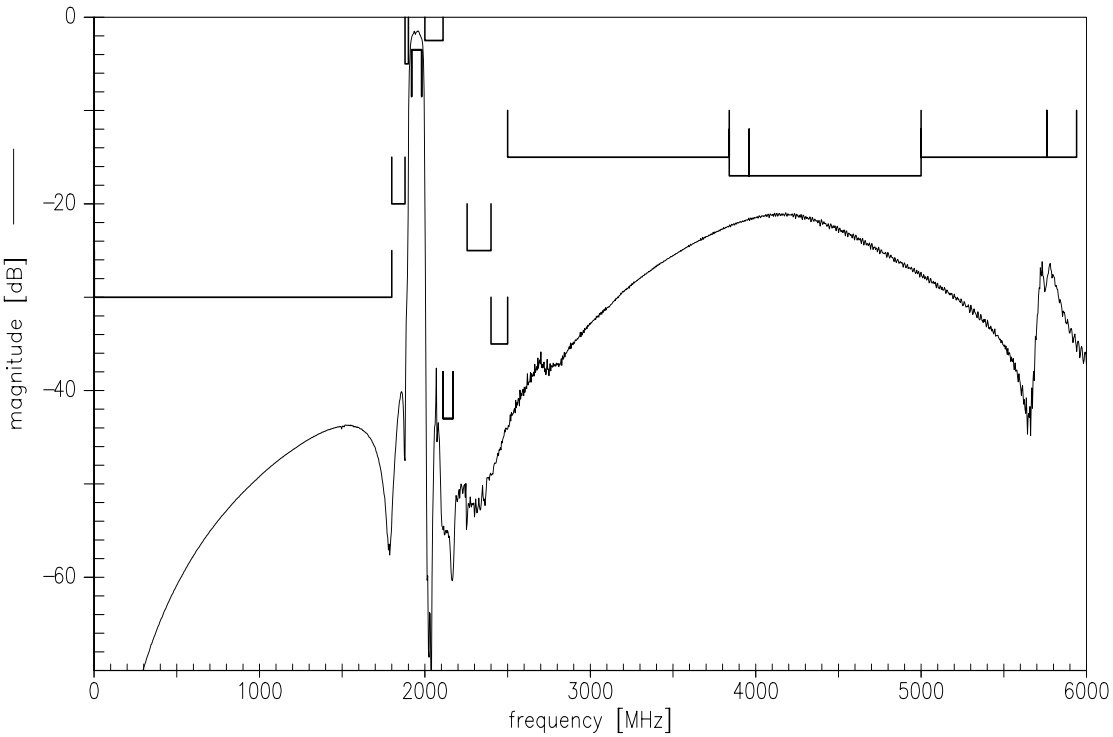
Frequency Response TX-ANT



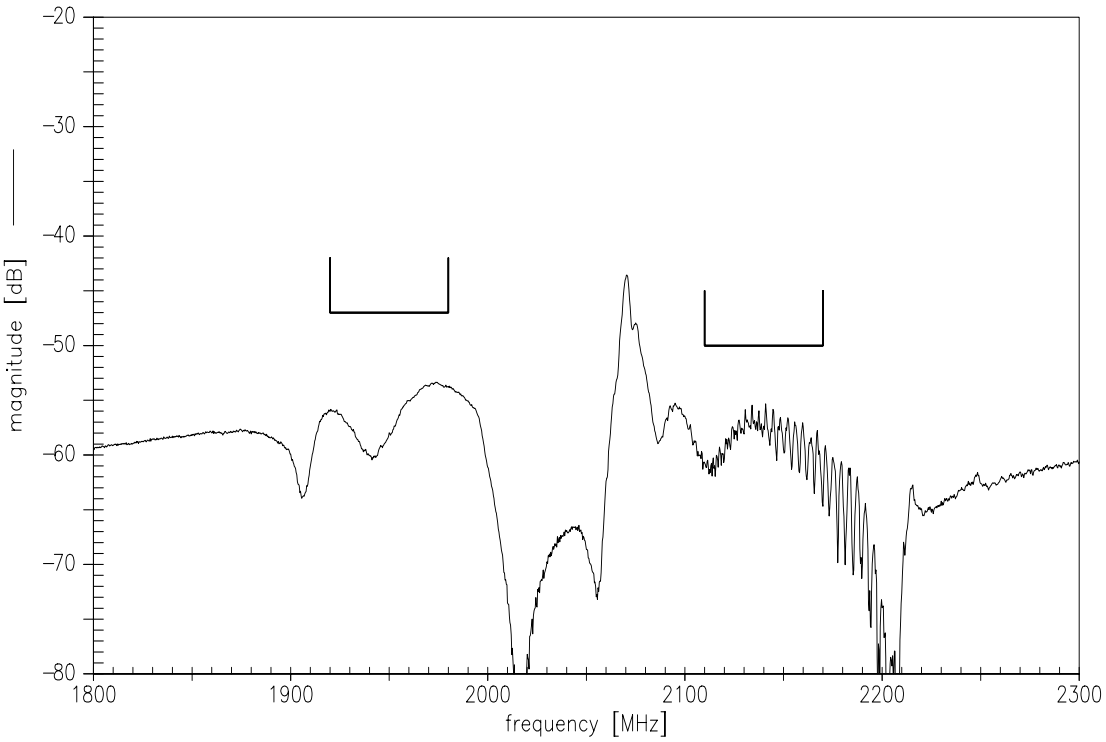
Frequency Response ANT-RX



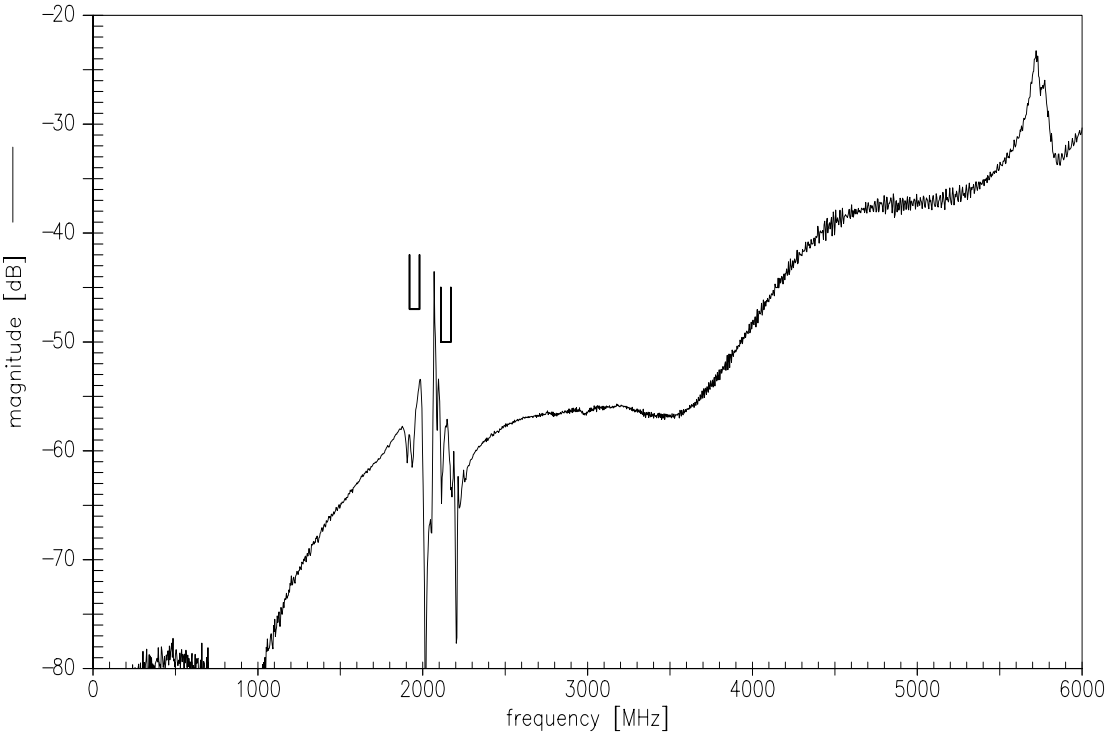
Frequency Response ANT-RX



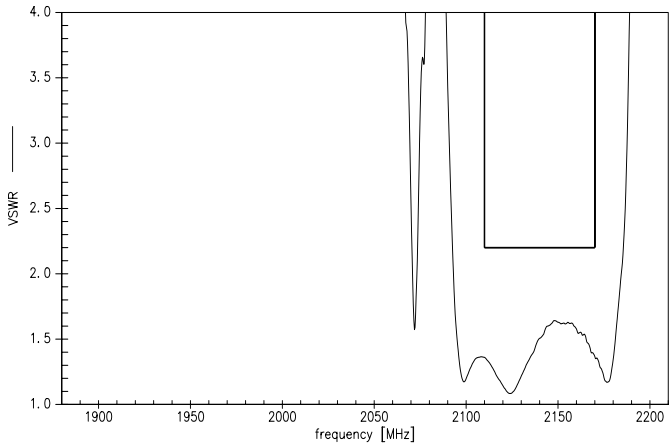
Frequency Response TX-RX

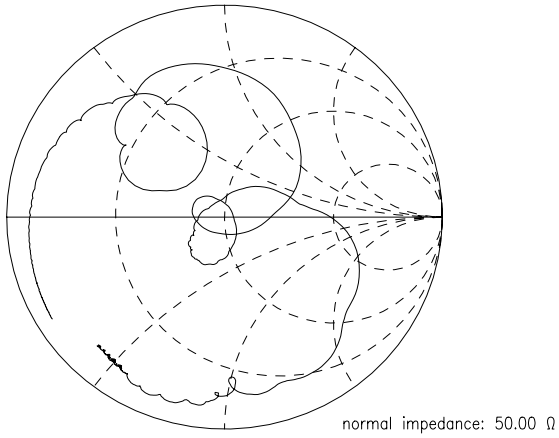


Frequency Response TX-RX

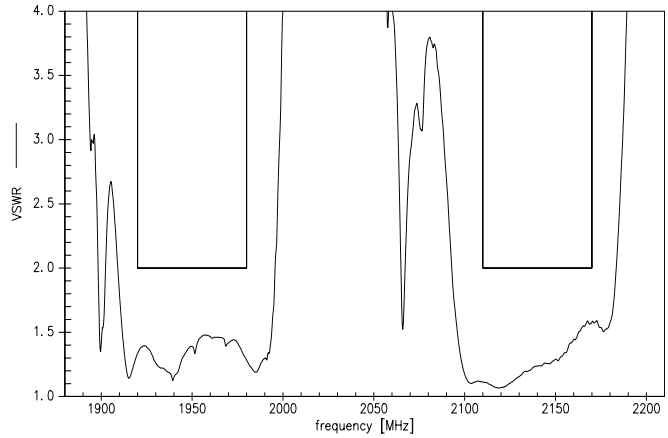


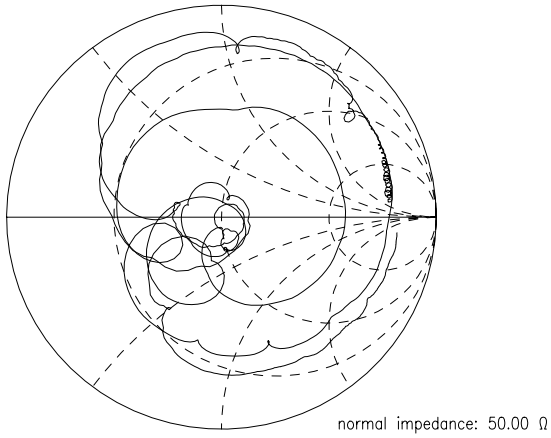
S11 VSWR (TX)



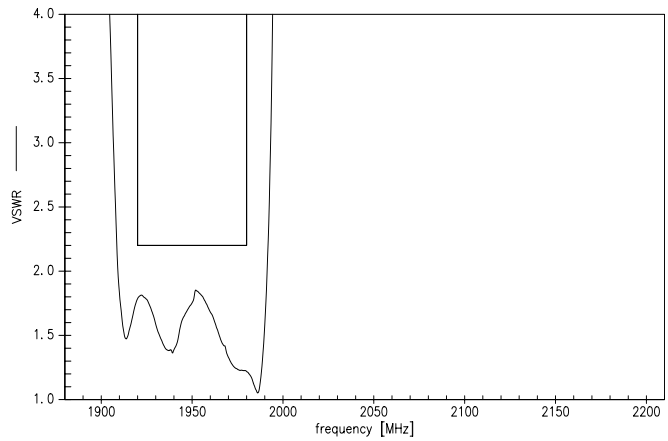


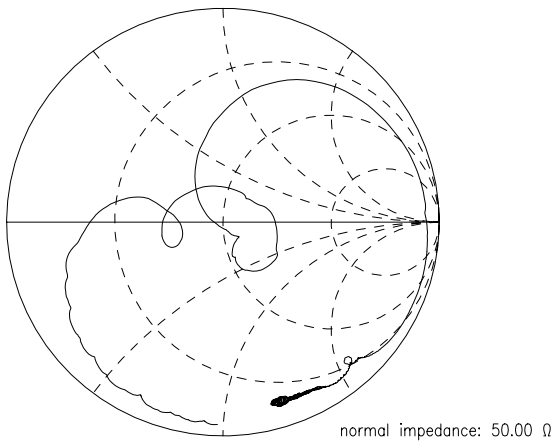
S22 VSWR (ANT)



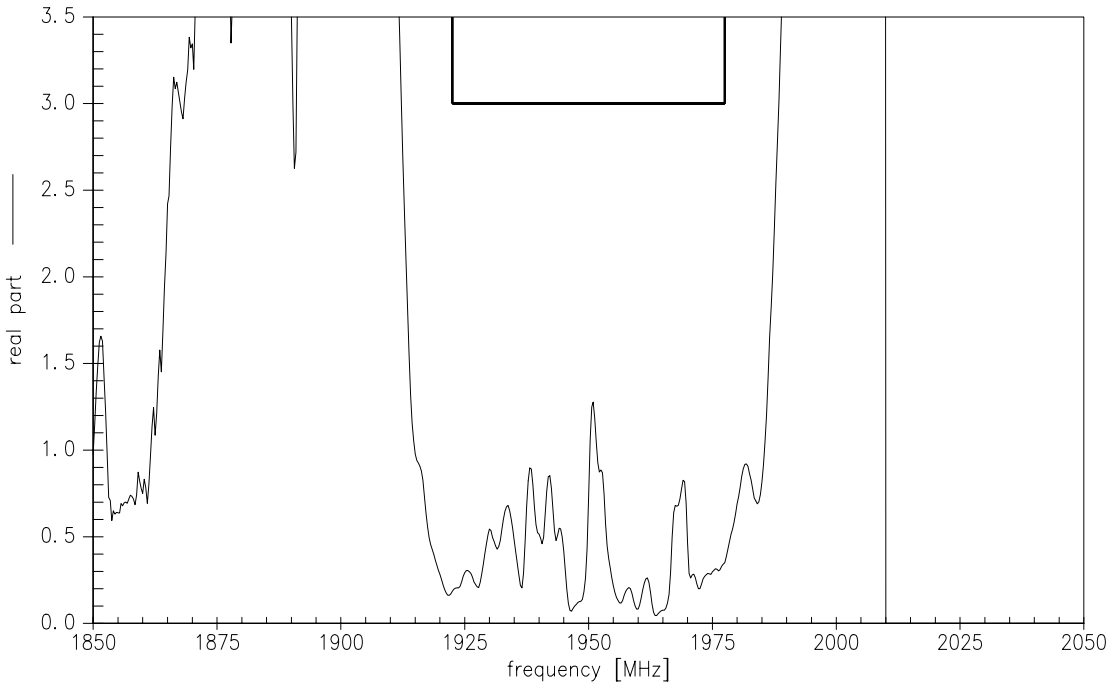


S33 VSWR (RX)

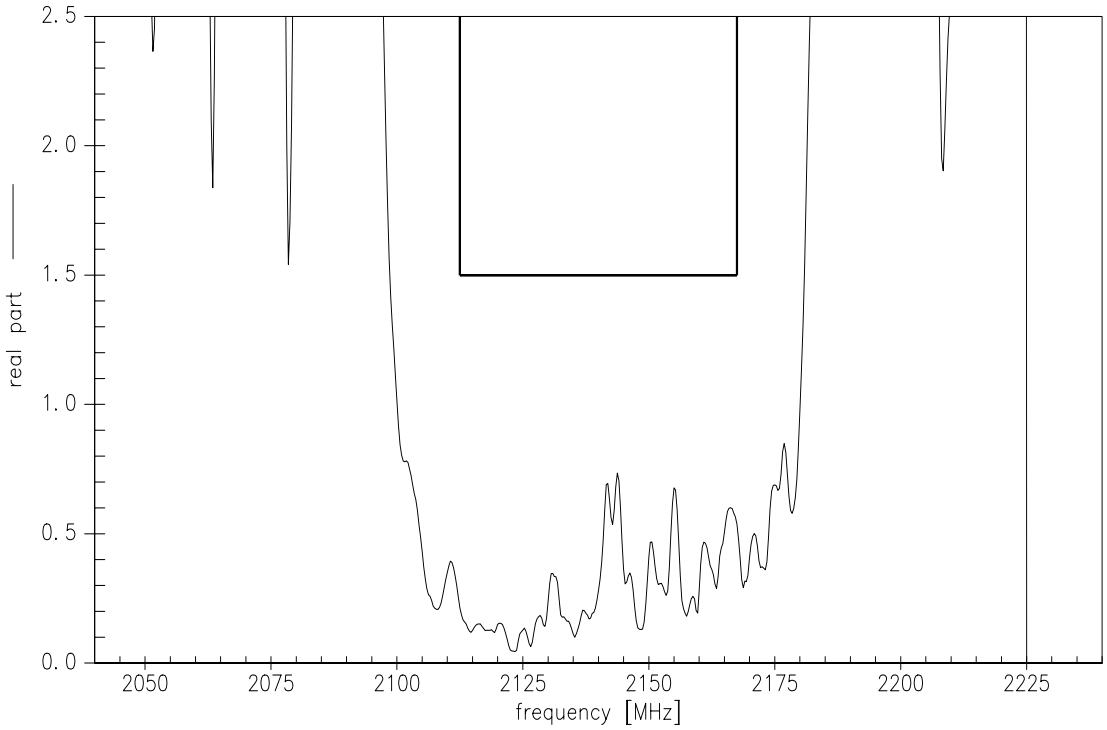




EVM RX



EVM TX



References

Type	B8637
Ordering code	B39212B8637P810
Marking and package	C61157-A8-A158
Packaging	F61074-V8232-Z000
Date codes	L_1126
S-parameters	B8637_NB.s3p, B8637_WB.s3p see file header for port/pin assignement table
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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