SAW Components

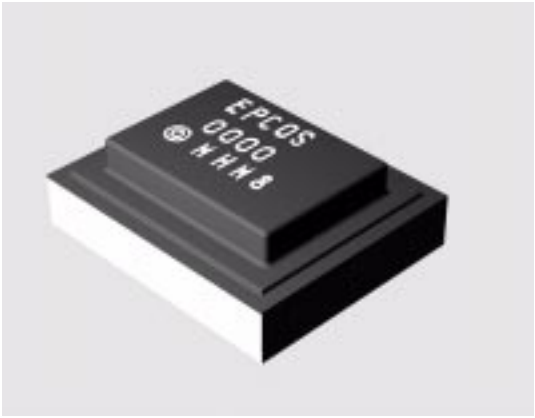
SAW Duplexer

WCDMA

Series/type:	**B7967** **B39212B7967P810**
Date:	November 09, 2011
Version:	2.0

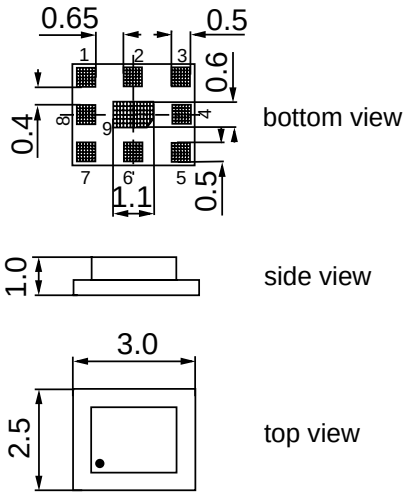
Application

- Low-loss SAW duplexer for WCDMA femtocell systems
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz
- High power durability



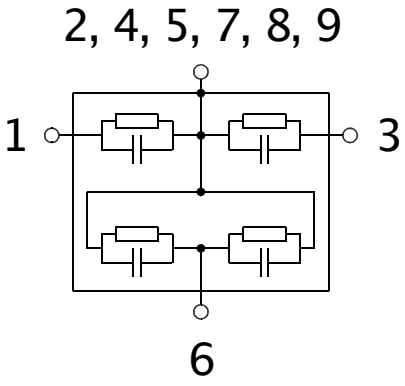
Features

- Package size 3.0 * 2.5 * 1.0 mm³
- RoHS compatible
- Approx. weight 0.035 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-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 To be grounded
- 7, 8, 9 To be grounded



Characteristics

Temperature range for specification: T = –10 ˚C to +85 ˚C
Antenna terminating impedance: Z_{ANT} = 50 Ω
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	2.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2110.0 ... 2170.0 MHz		-	0.6	1.0	dB
Error Vector Magnitude	EVM[1)]				
2112.4 ... 2167.6 MHz		-	0.4	1.0	%
Input VSWR (TX port)					
2110.0 ... 2170.0 MHz		-	1.8	2.2	
Output VSWR (ANT port)					
2110.0 ... 2170.0 MHz		-	1.8	2.2	
Attenuation	α				
10.0 ... 1920.0 MHz		35	38	-	dB
1920.0 ... 1960.0 MHz		44	49	-	dB
1960.0 ... 1980.0 MHz		44	50	-	dB
2250.0 ... 2400.0 MHz		35	46	-	dB
2400.0 ... 2500.0 MHz		35	45	-	dB
2500.0 ... 3000.0 MHz		35	45	-	dB
3000.0 ... 3800.0 MHz		30	40	-	dB
3800.0 ... 4220.0 MHz		25	38	-	dB
4220.0 ... 4340.0 MHz		25	37	-	dB
4340.0 ... 5000.0 MHz		20	36	-	dB
5000.0 ... 6330.0 MHz		15	25	-	dB
6330.0 ... 6510.0 MHz		20	30	-	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
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		-	2.2	3.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0 ... 1980.0 MHz		-	1.0	1.8	dB
Error Vector Magnitude	EVM[1)]				
1922.4 ... 1987.6 MHz		-	1.6	2.0	%
Input VSWR (ANT port)					
1920.0 ... 1980.0 MHz		-	1.8	2.2	
Output VSWR (RX port)					
1920.0 ... 1980.0 MHz		-	1.9	2.2	
Attenuation	α				
10.0 ... 1800.0 MHz		30	35	-	dB
1800.0 ... 1880.0 MHz		20	30	-	dB
1880.0 ... 1900.0 MHz		8	25	-	dB
2110.0 ... 2170.0 MHz		46	50	-	dB
2400.0 ... 2500.0 MHz		25	28	-	dB
2500.0 ... 3840.0 MHz		15	20	-	dB
3840.0 ... 3960.0 MHz		25	30	-	dB
3960.0 ... 5000.0 MHz		20	32	-	dB
5000.0 ... 5760.0 MHz		10	20	-	dB
5760.0 ... 5940.0 MHz		15	25	-	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
RX terminating impedance: Z_{RX} = 50 Ω
TX terminating impedance: Z_{TX} = 50 Ω

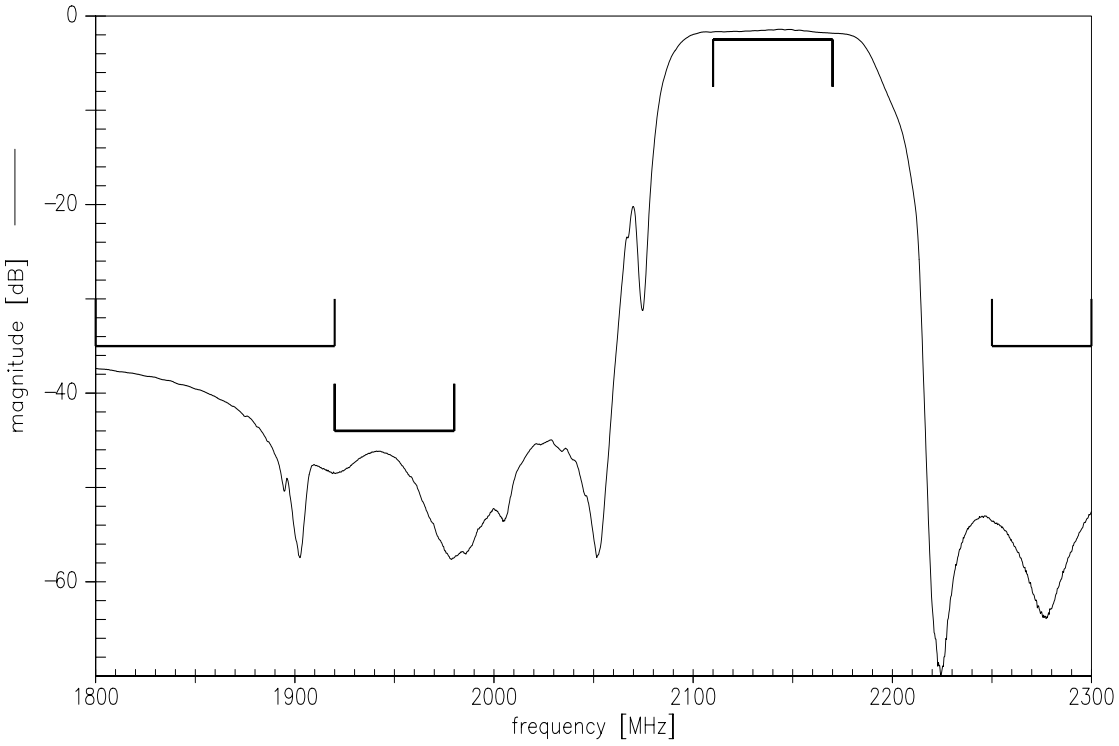
Characterisitcs TX - RX		min.	typ. @ 25 ˚C	max.	
Isolation	α				
1920.0 ... 1980.0 MHz		45	48	-	dB
2110.0 ... 2170.0 MHz		52	55	-	dB

Maximum ratings

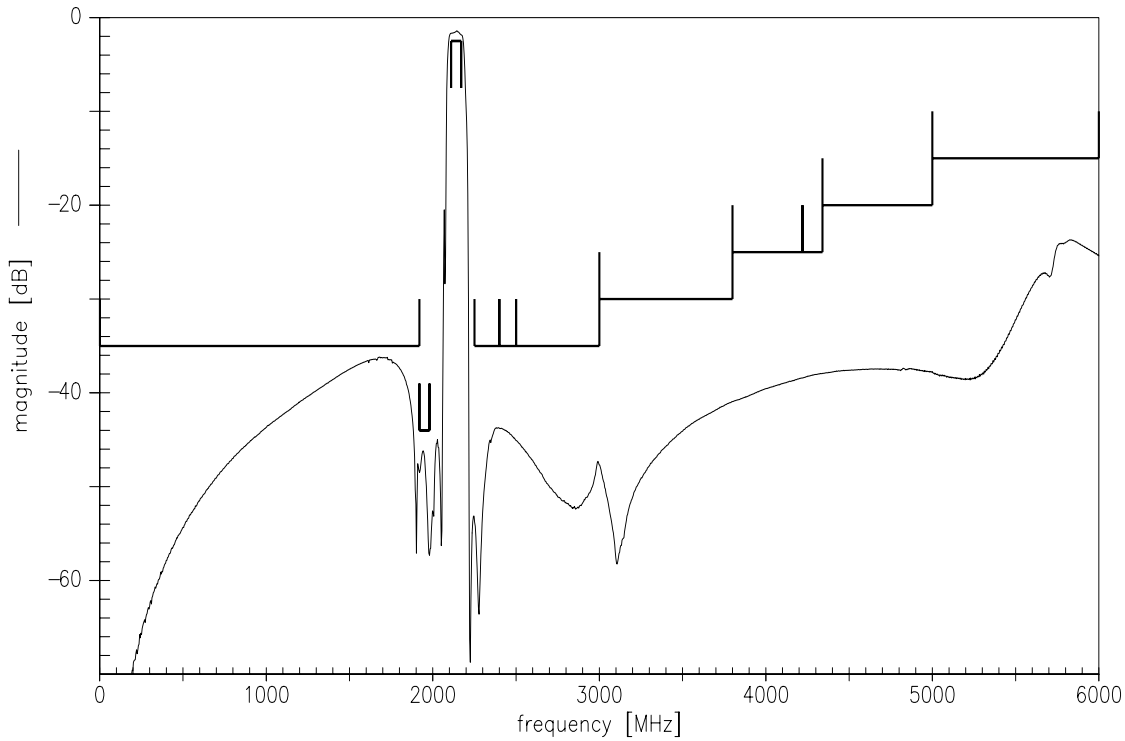
Operable temperature range	T	–35/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100	V[1)]	machine model, 10 pulses
Input power at pin 1	P_{IN}			source and load impedance 50 Ω
2110.0 ... 2170.0 MHz		28	dBm	} LTE 5 MHz downlink (11.7 PAPR) *T* = 55˚C, 50.000 h
elsewhere		10	dBm	

[1)] acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses

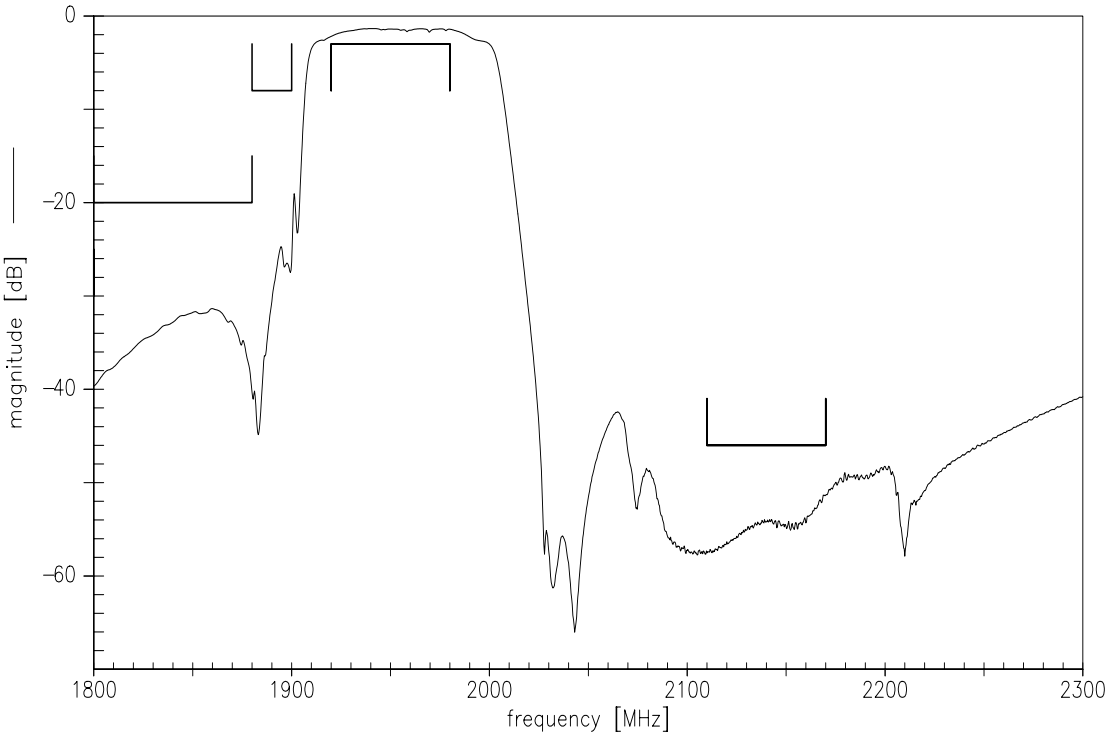
Frequency Response TX-ANT



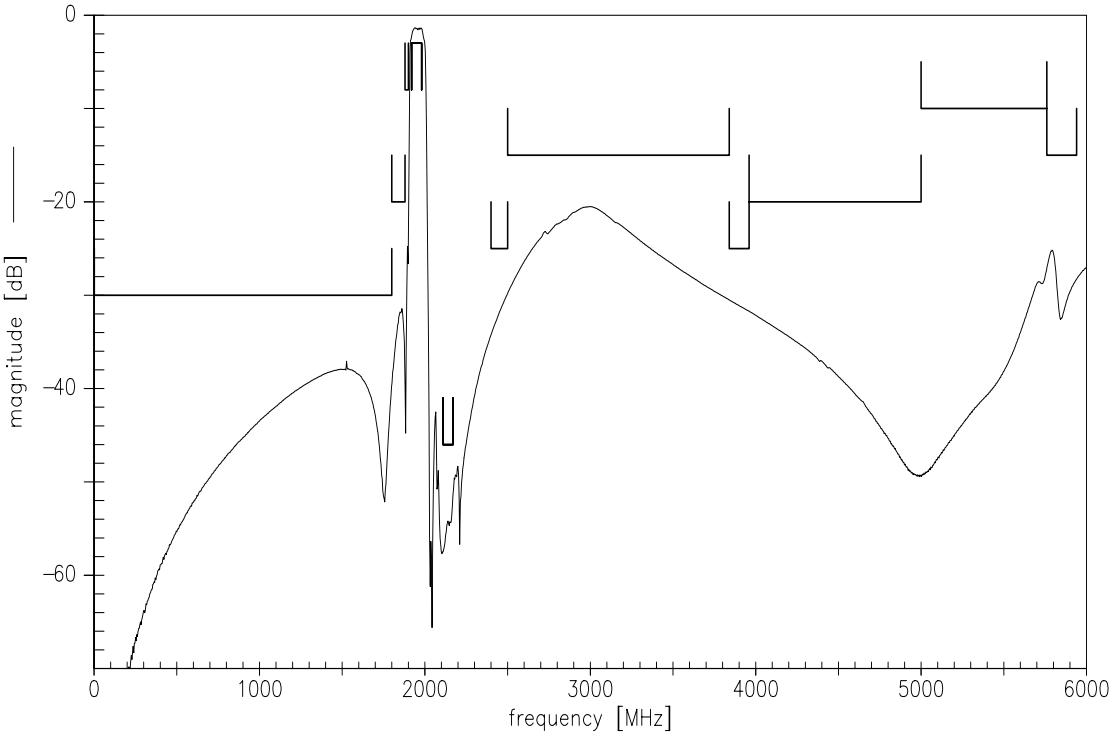
Frequency Response TX-ANT



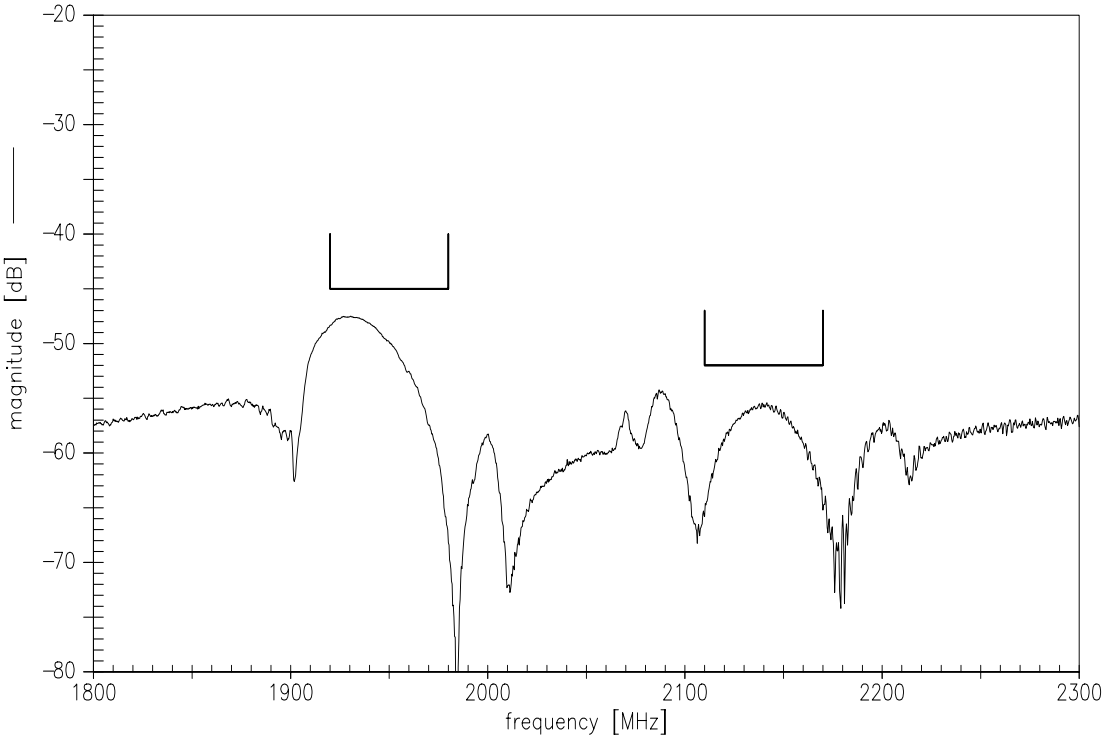
Frequency Response ANT-RX



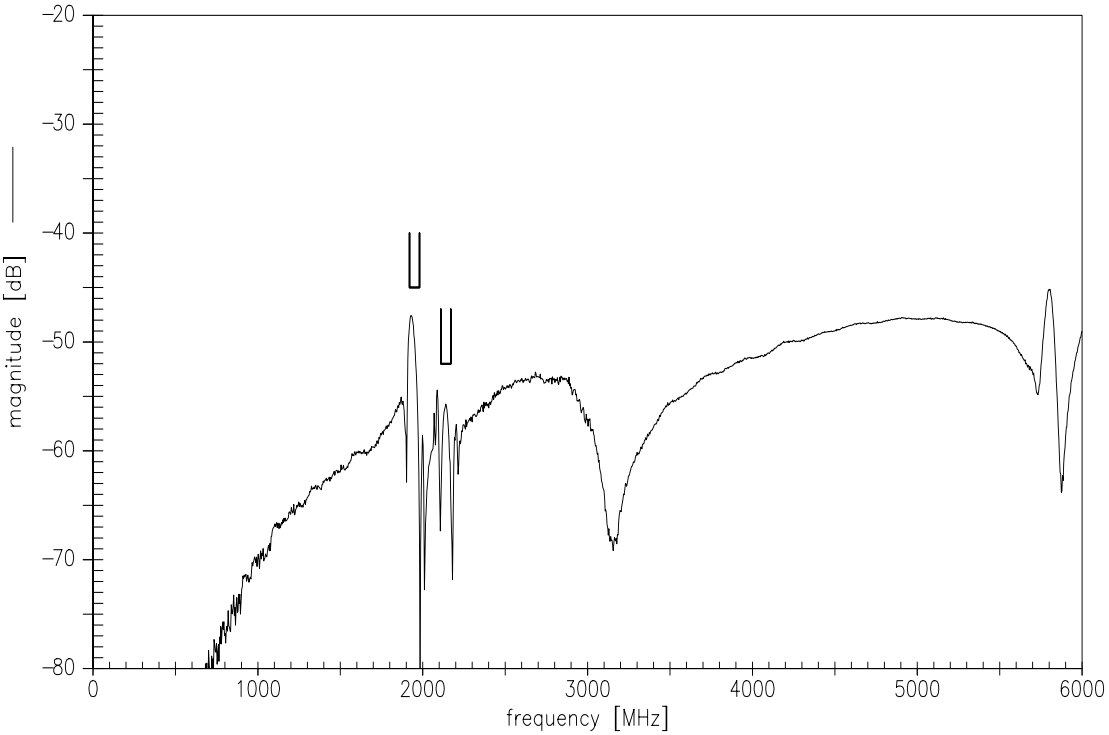
Frequency Response ANT-RX



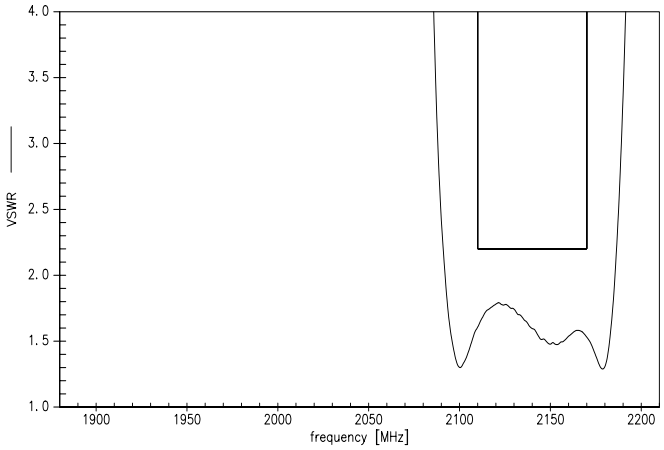
Frequency Response TX-RX

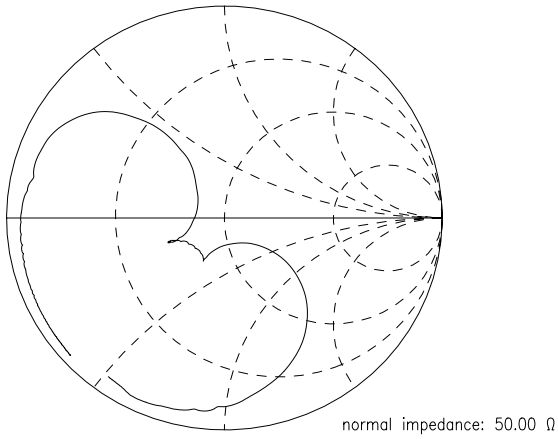


Frequency Response TX-RX

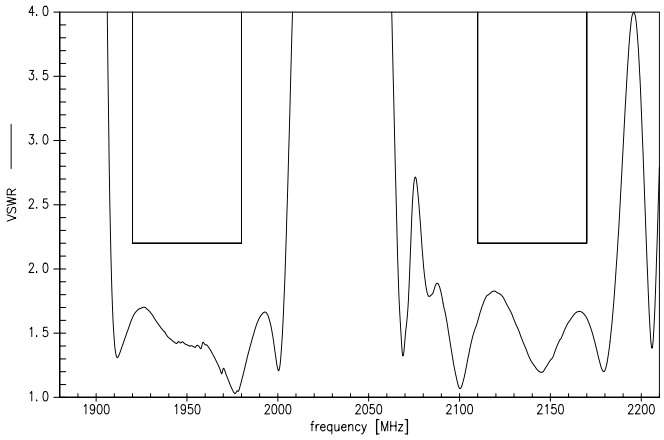


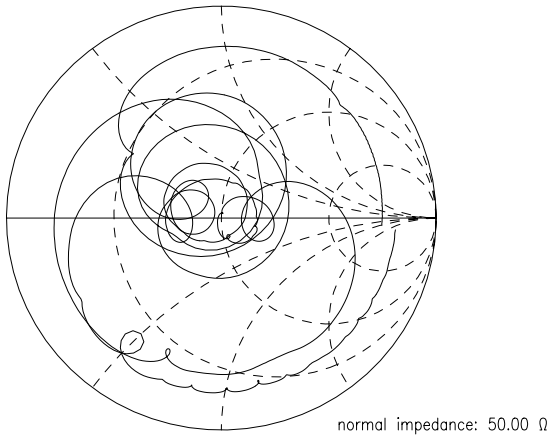
S11 VSWR (TX)



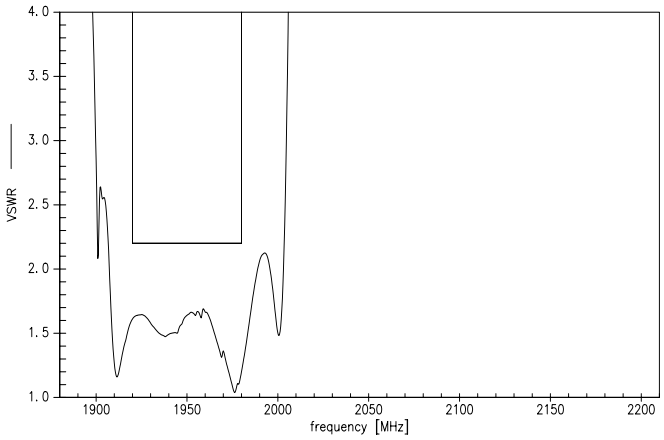


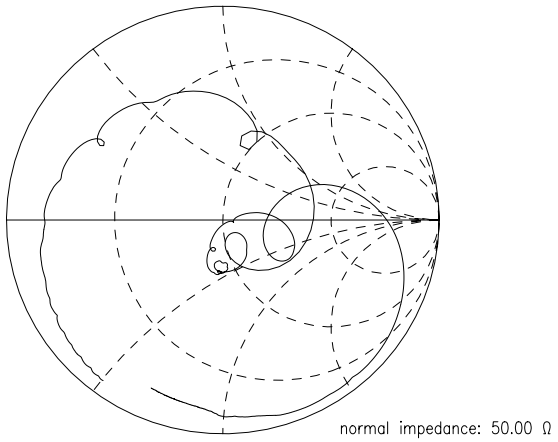
S22 VSWR (ANT)



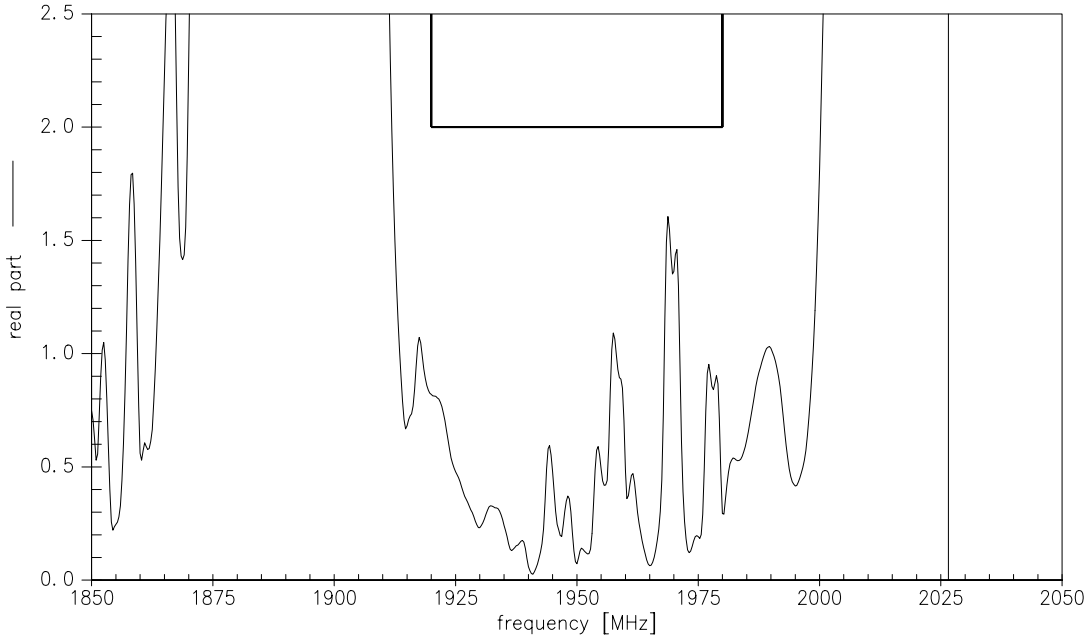


S33 VSWR (RX)

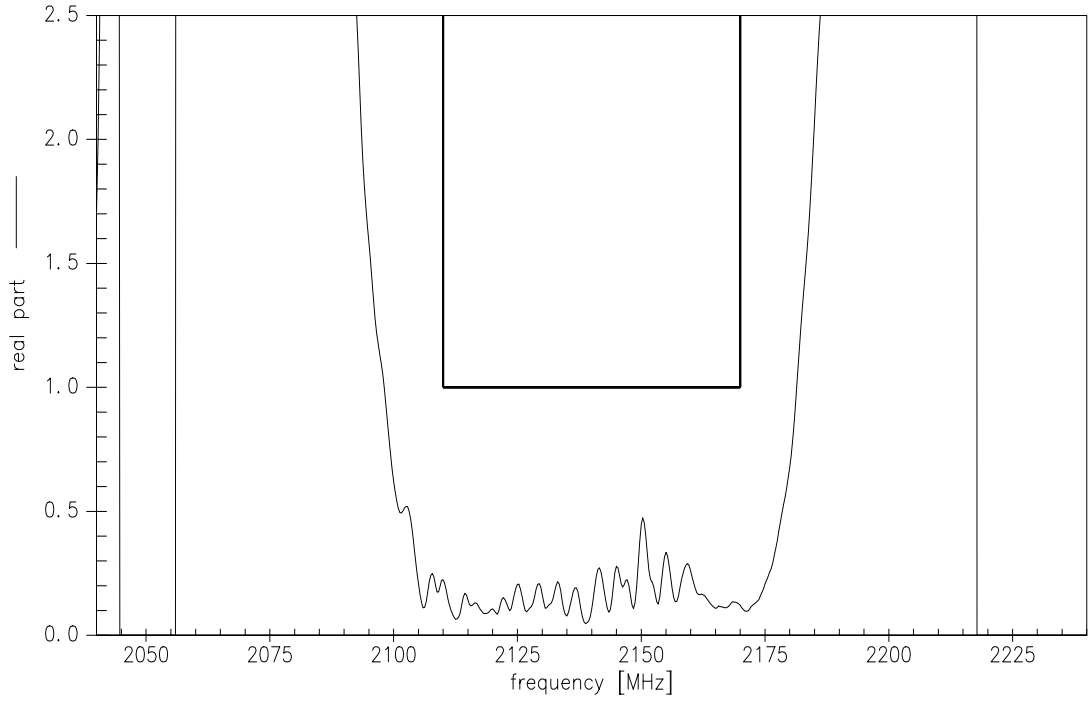




EVM Rx


2.5
2.0
1.5
1.0
0.5
0.0
real part
1850
1875
1900
1925
1950
1975
2000
2025
2050
frequency [MHz]

EVM Tx


2.5
2.0
1.5
1.0
0.5
0.0
real part
2050
2075
2100
2125
2150
2175
2200
2225
frequency [MHz]

References

Type	B7967
Ordering code	B39212B7967P810
Marking and package	C61157-A3-A26
Packaging	F61074-V8211-Z000
Date codes	L_1126
S-parameters	B7967_NB.s3p B7967_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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