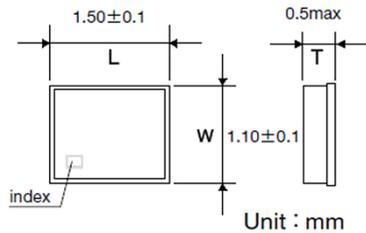


## FBAR/SAW Devices (SAW Dual Type)

## G6QC1G960N2CH



## ■ Features

- Item Summary  
SAW, Rx Dual Type, 1.5x1.1x0.5mm  
1900 / 1800
- Lifecycle Stage  
Non-preferred
- Standard packaging quantity (minimum)  
Taping Embossed 5000 , 15000pcs

## ■ Products characteristics table

System	GSM
Type	SAW
Function	Rx Dual Type
band (f1)	1900
Insertion Loss (typ)	1.6 dB
Attenuation (typ)	13 dB
band (f2)	1800
Insertion Loss (f2)(typ)	1.6 dB
Attenuation (f2)(typ)	15 dB
Operating Temp. Range	-30 to +85 °C
RoHS2 Compliance (10 subst.)	Yes
REACH Compliance (173 subst.)	Yes
Halogen Free	Yes
Soldering	Reflow

## ■ External Dimensions

Dimension L	1.5 ± 0.10 mm
Dimension W	1.1 ± 0.10 mm
Dimension T	Max 0.5 mm

2017.09.12

The data is reference only. Electrical characteristics vary depending on environment or measurement condition.  
 TAIYO YUDEN reserves the right to make change to the data at any time without notice.  
 Before making final selection, please check product specification.



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

Table 1.Electrical specifications(Filter 1)

Pass Band (1930-1990MHz)						
Item	Condition (MHz)	Specification			Unit	Remark
		Min.	Typ.	Max.		
Insertion Loss	1930-1990	-	1.6	2.3	dB(*1)	
Ripple	1930-1990	-	0.4	1.3	dB	
Input VSWR	1930-1990	-	1.5	2.0	-	
Output VSWR	1930-1990	-	1.4	2.0	-	
Absolute attenuation	DC-1850	30	35	-	dB	
	1850-1910	11	13	-	dB	
	2010-2070	10	13	-	dB	-20 to 85°C
		9	-	-	dB	
	2070-2150	18	22	-	dB	
	2150-3000	25	31	-	dB	
	3000-6000	25	33	-	dB	
Amplitude balance ( S21/S31 )	1930-1990	-2.0	-1.0/+0.5	+2.0	dB	
Phase balance (( $\Phi$ S21- $\Phi$ S31)+180)	1930-1990	-10	-0/+4	+10	deg	
Input impedance (Unbalanced)		50			Ohm	
Output impedance (Balanced)		150//18nH			Ohm	
Operating temperature		-30 to +85			°C	

(\*1) Specification of insertion loss includes loss that comes from the test board.(0.15dB)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

Table 2. Electrical specifications(Filter 2)

Pass Band (1805-1880MHz)						
Item	Condition (MHz)	Specification			Unit	Remark
		Min.	Typ.	Max.		
Insertion Loss	1805-1880	-	1.6	2.2	dB(*1)	-20 to 85°C
		-	-	2.3	dB(*1)	
Ripple	1805-1880	-	0.4	1.3	dB	
Input VSWR	1805-1880	-	1.7	2.1	-	
Output VSWR	1805-1880	-	1.7	2.1	-	
Absolute attenuation	DC-1300	40	48	-	dB	
	1300-1705	30	39	-	dB	
	1705-1785	12	15	-	dB	
	1920-1980	17	20	-	dB	
	1980-3000	19	22	-	dB	
	3000-5000	25	35	-	dB	
	5000-6000	20	32	-	dB	
Amplitude balance ( S <sub>21</sub> /S <sub>31</sub>  )	1805-1880	-1.0	-0.8/+1.0	+1.0	dB	
Phase balance ((∠S <sub>21</sub> -∠S <sub>31</sub> )+180)	1805-1880	-10	-0.2/+0.3	+10	deg	
Input impedance (Unbalanced)		50			Ohm	
Output impedance (Balanced)		150//15nH			Ohm	
Operating temperature		-30 to +85			°C	

(\*1) Specification of insertion loss includes loss that comes from the test board. (0.15dB)



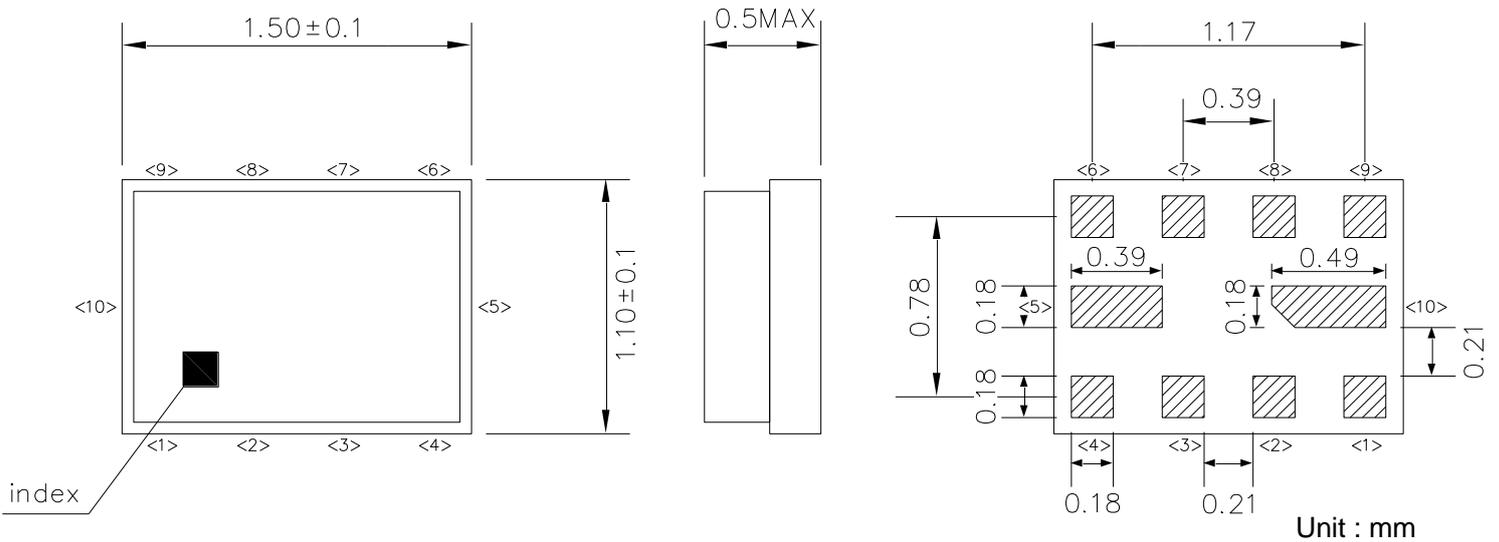
MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

**Dimensions**

Device size: 1.5yp. x 1.1typ. x 0.5max.

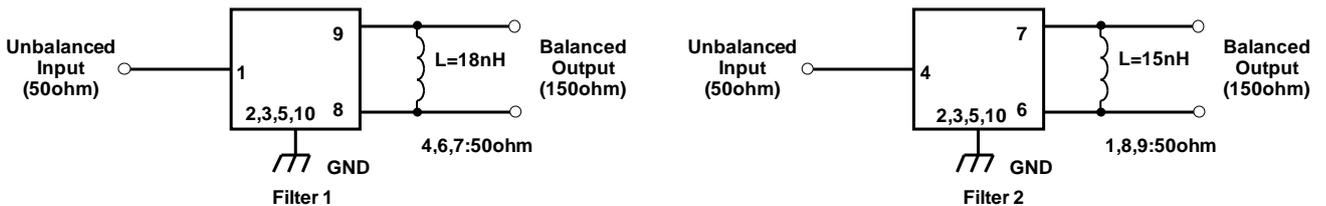


**Pin Configuration**

Pin No.	Pin name	Description
1	IN	Filter1 input pin
2	GND	Ground
3	GND	Ground
4	IN	Filter2 input pin
5	GND	Ground
6	OUT	Filter2 balanced output pin
7	OUT	Filter2 balanced output pin
8	OUT	Filter1 balanced output pin
9	OUT	Filter1 balanced output pin
10	GND	Ground

Filter No.	Passband(MHz)	System
1	1930 ~ 1990	GSM1900-Rx
2	1805 ~ 1880	GSM1800-Rx

**Evaluation Circuit**





MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>



Fig.1 Pass-band Characteristic (Filter1)

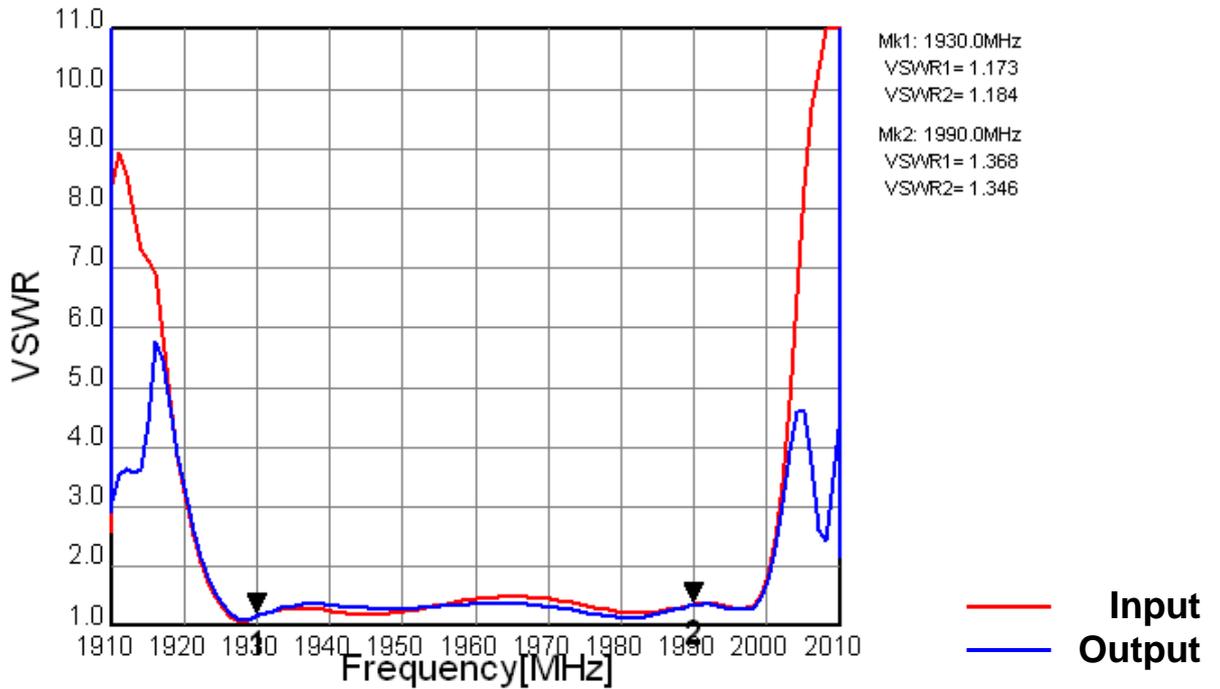


Fig.2 VSWR (Filter1)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

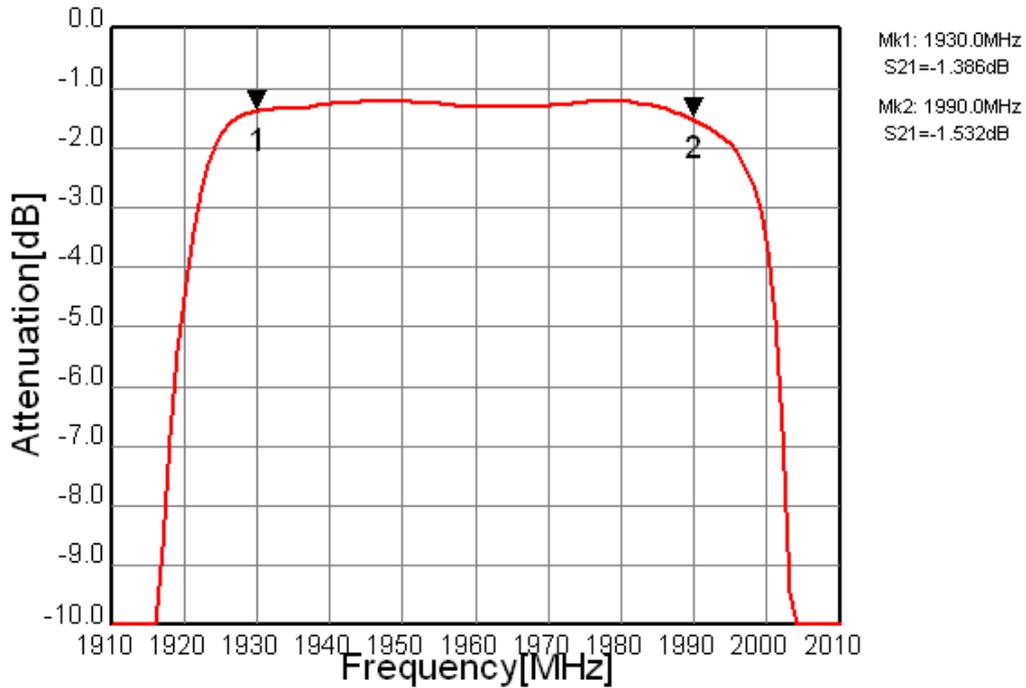


Fig.3 In-band Characteristic (Filter1)

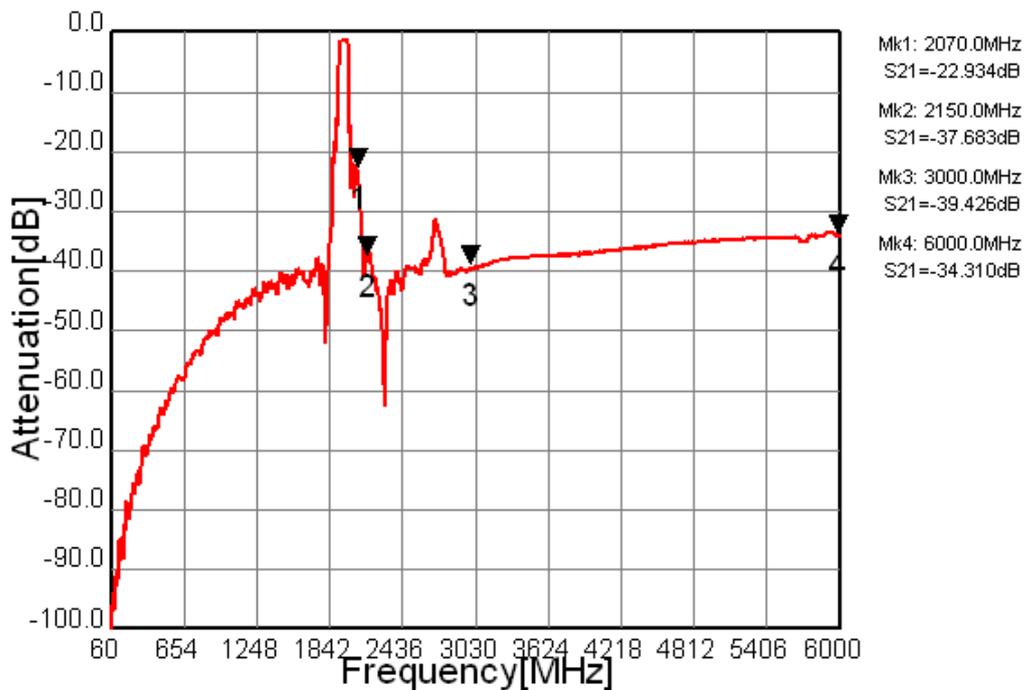


Fig.4 Wide-band Characteristic (Filter1)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

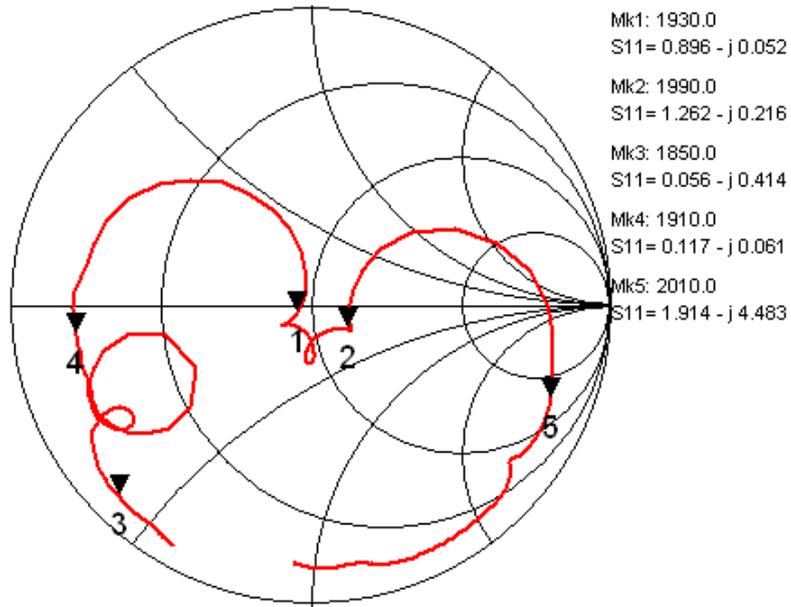


Fig.5 Impedance (S11) (Filter1)

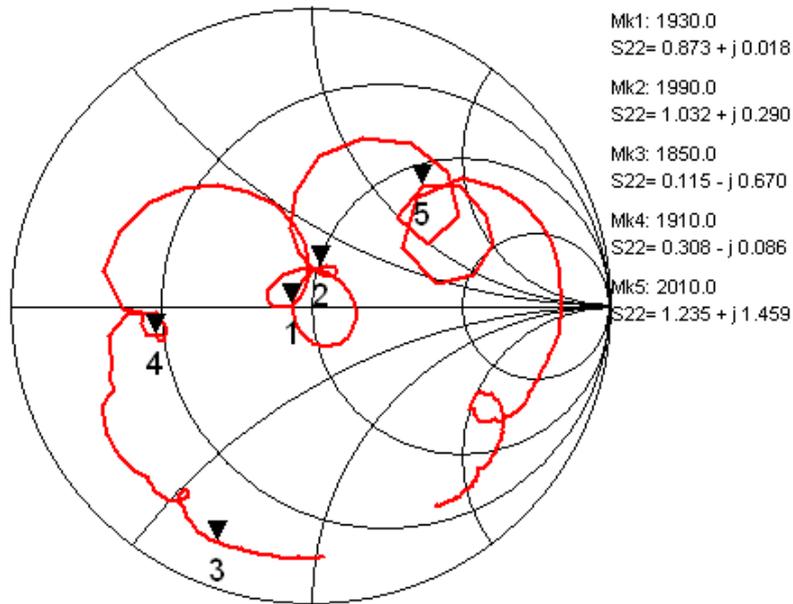


Fig.6 Impedance (S22) (Filter1)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

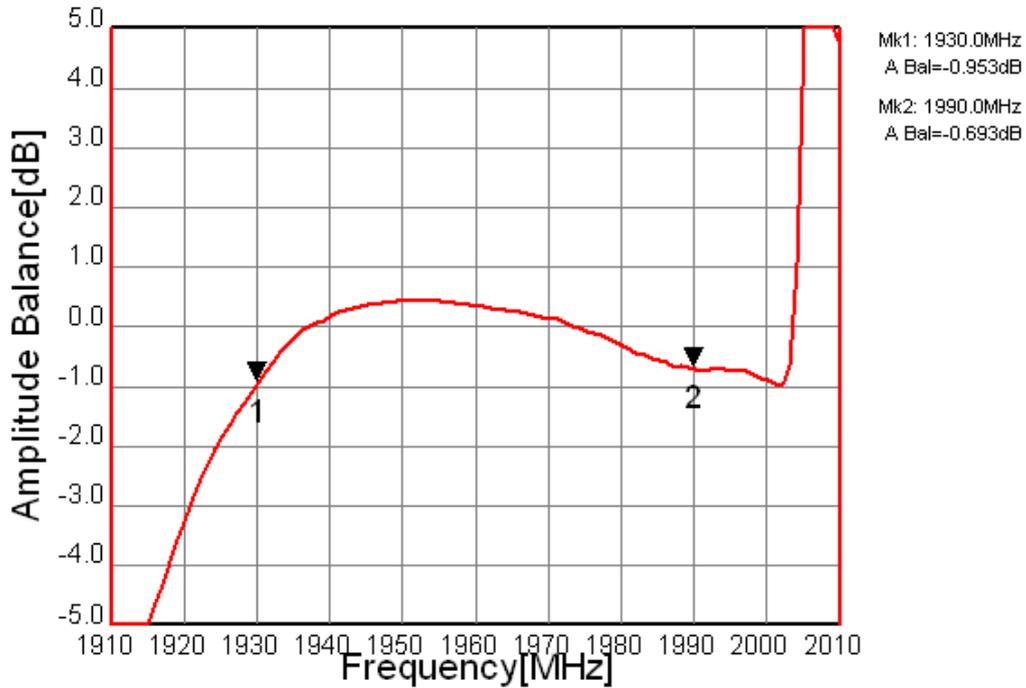


Fig.7 Amplitude Balance (Filter1)

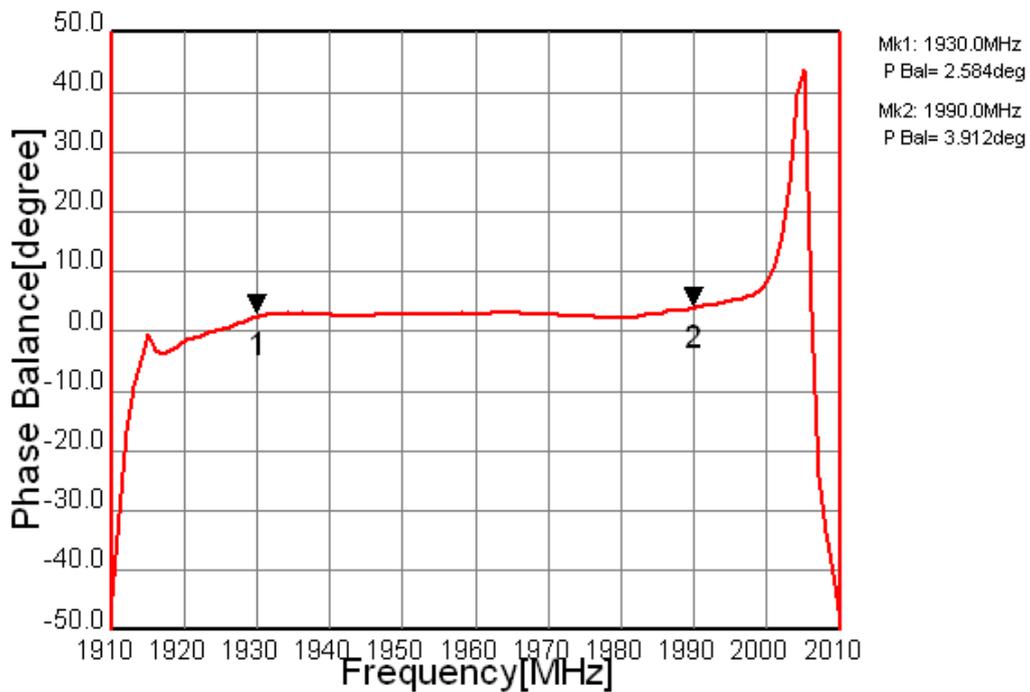


Fig.8 Phase Balance (Filter1)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

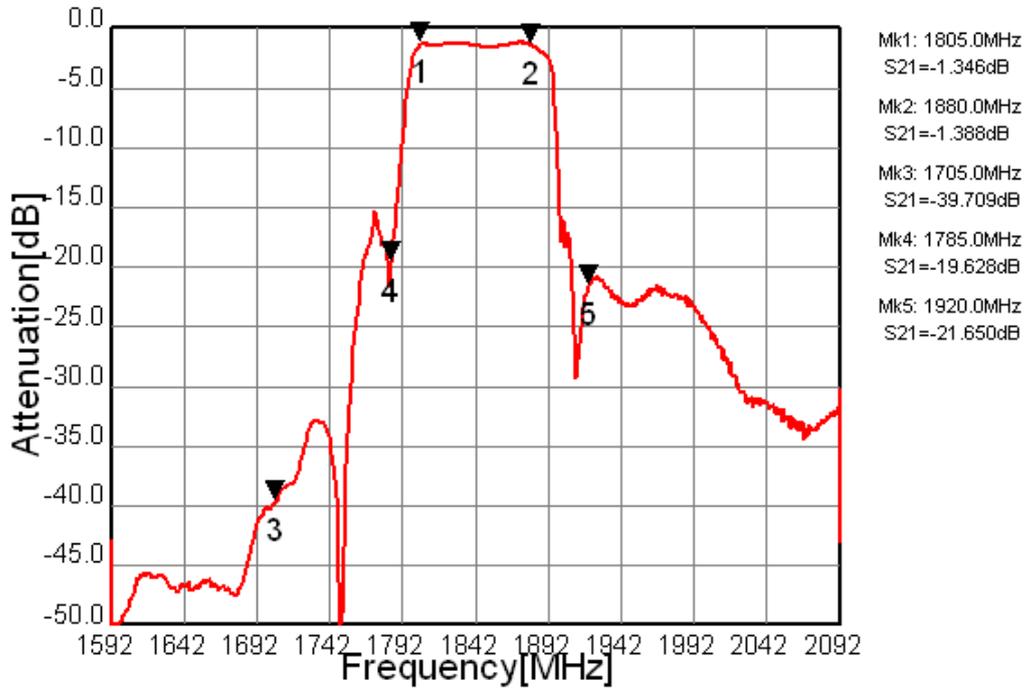


Fig.9 Pass-band Characteristic (Filter2)

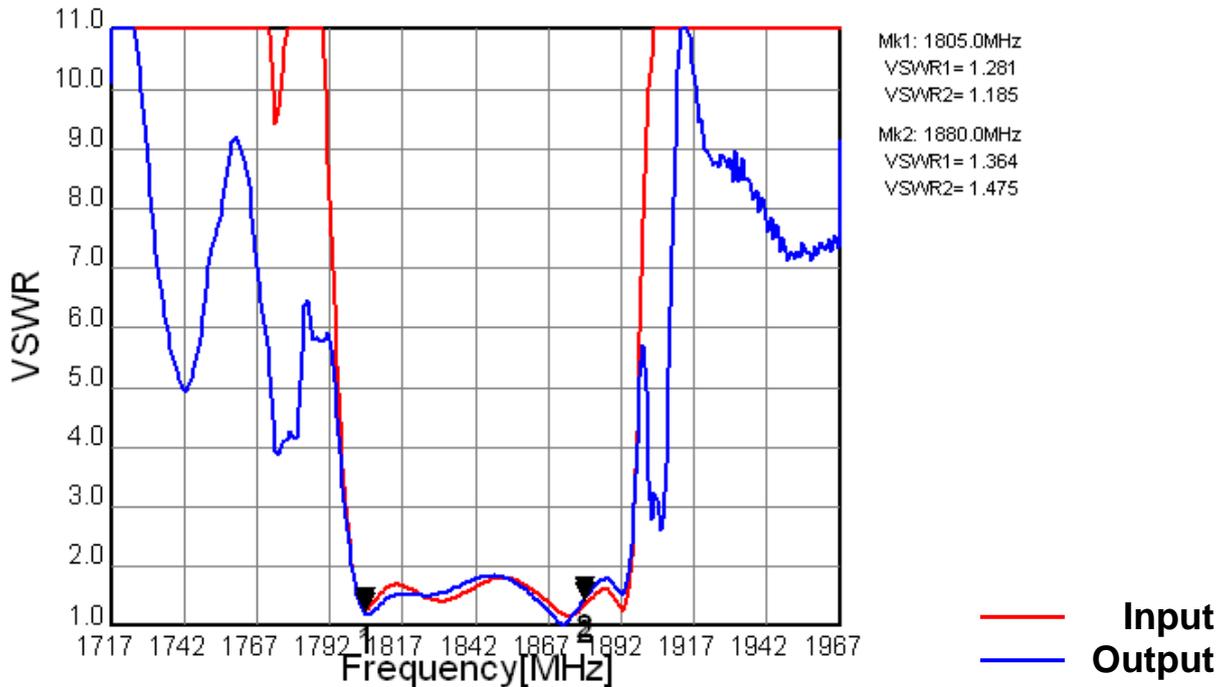


Fig.10 VSWR (Filter2)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

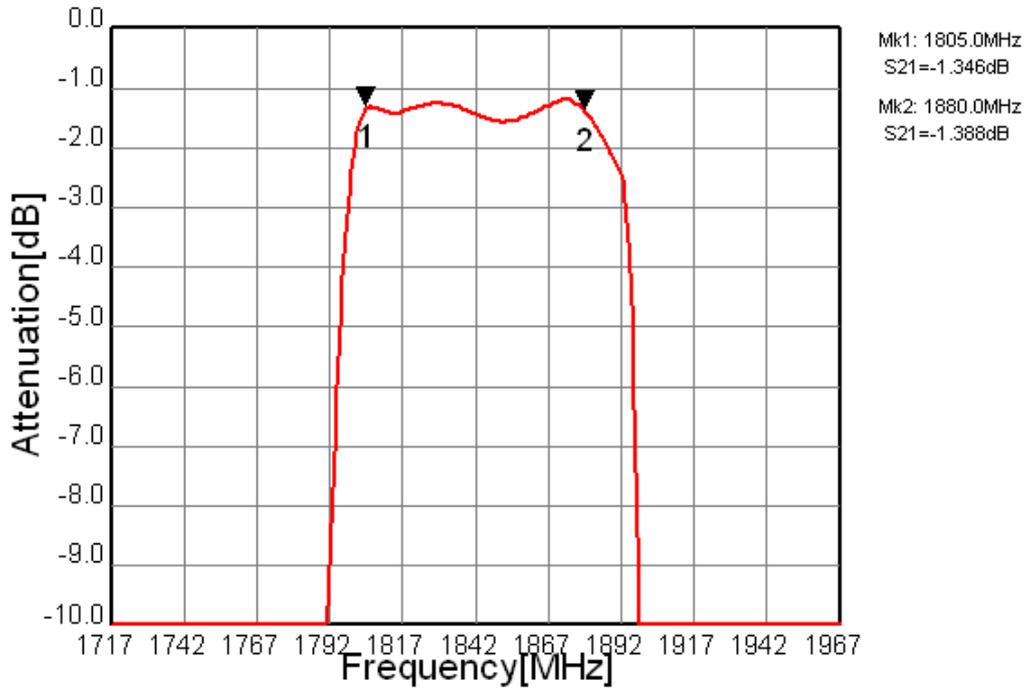


Fig.11 In-band Characteristic (Filter2)

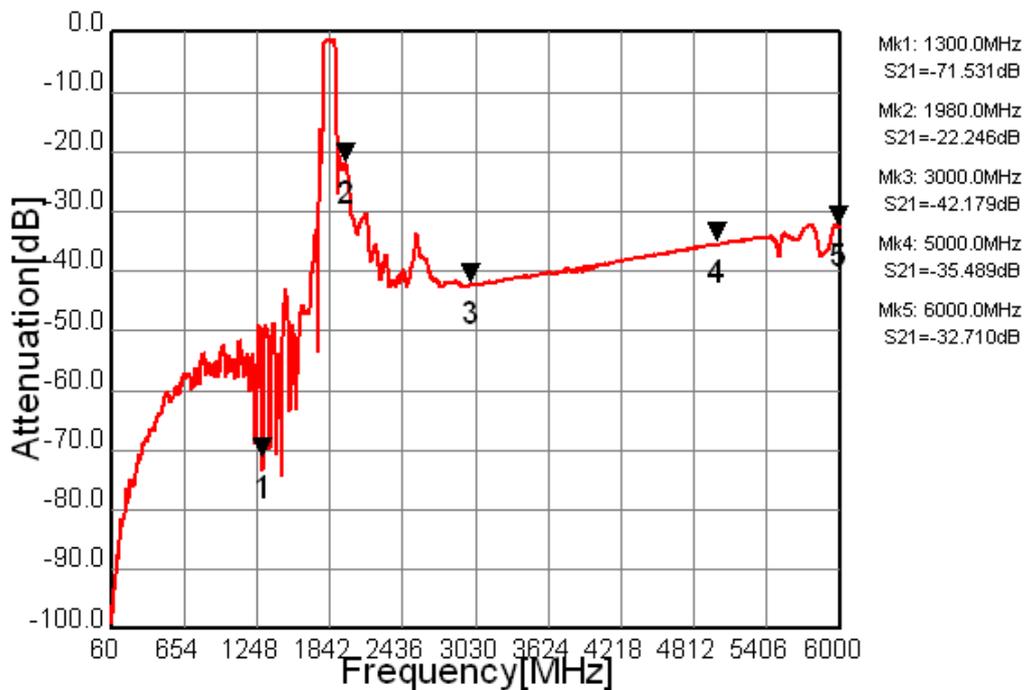


Fig.12 Wide-band Characteristic (Filter2)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

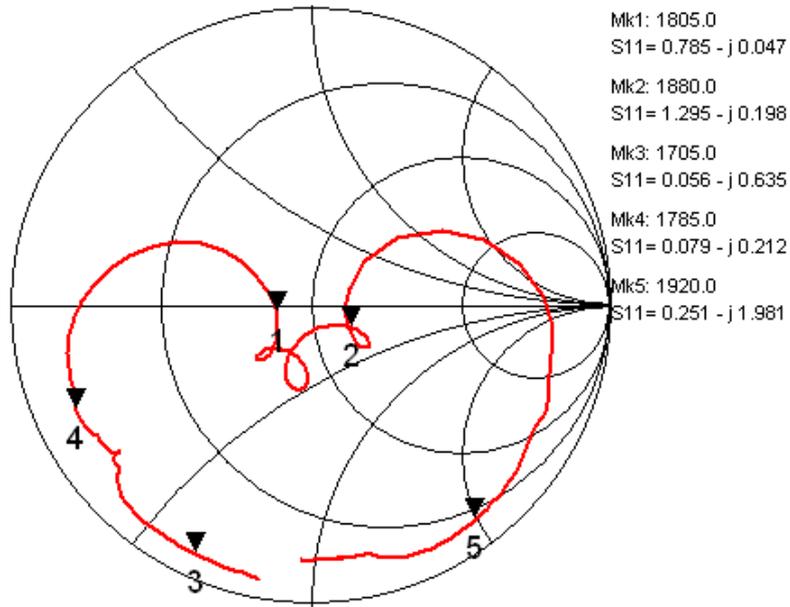


Fig.13 Impedance (S11) (Filter2)

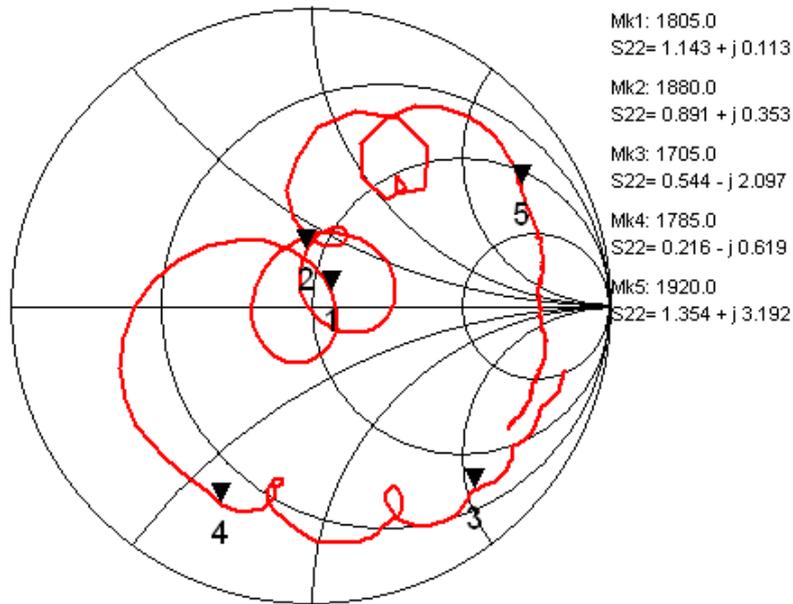


Fig.14 Impedance (S22) (Filter2)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

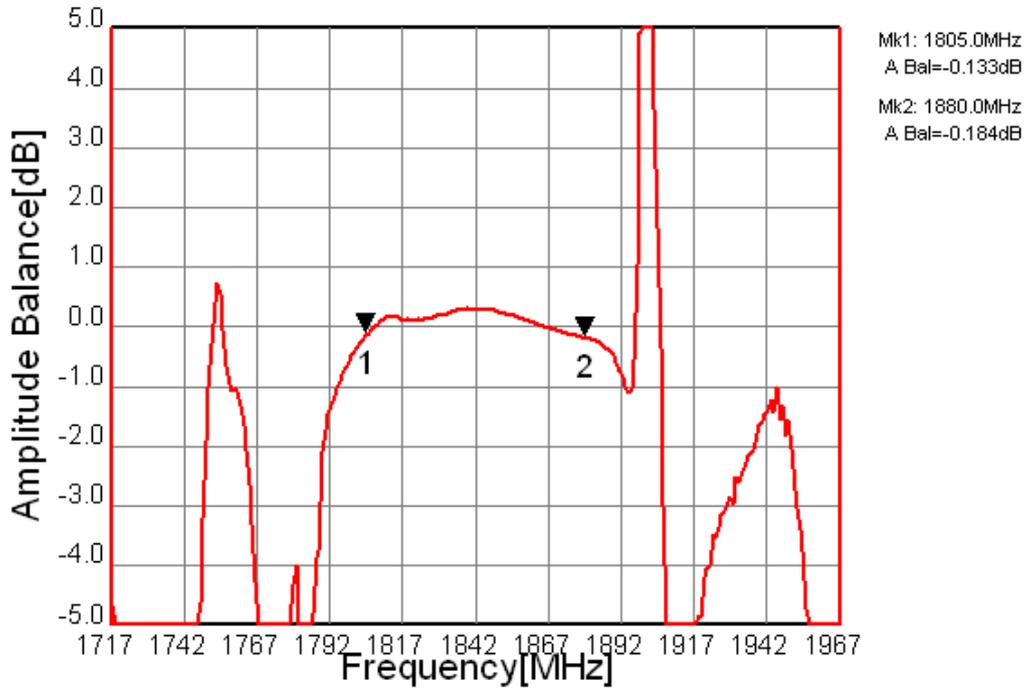


Fig.15 Amplitude Balance (Filter2)

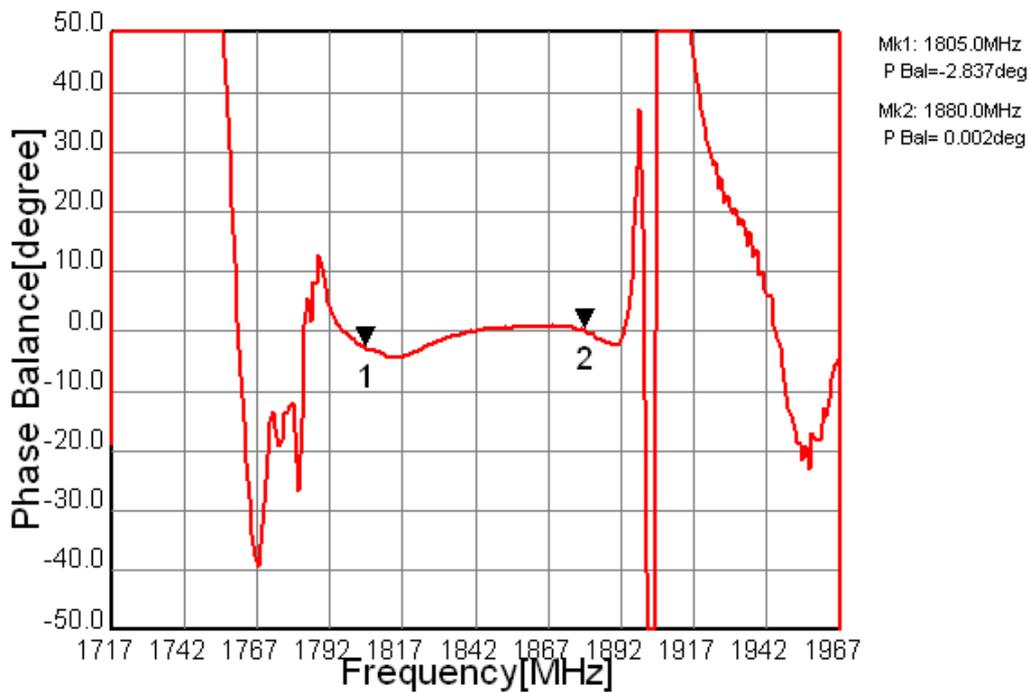


Fig.16 Phase Balance (Filter2)



MSL1

\*Pb Free part

Customer Name	Standard Specification	TAIYO YUDEN Mobile Technology Co.,Ltd.	
System	GSM1900/GSM1800 Rx (50/150ohms)	DATE	Apr. 24, 2012
Part Number	G6QC1G960N2CH	Version 1.0aa	<b>Final</b>

## Ordering Code

Ordering Code	Packing	Reel size	Status
G6QC1G960N2CH-J	Tape & Reel	5,000 pcs.	MP
G6QC1G960N2CH-JA	Tape & Reel	less than 5,000 pcs.	MP
G6QC1G960N2CH-Q	Bulk	few pcs.	MP

\*Minimum order quantity (MOQ) is assigned for each inquiry, Please contact to Sales Representatives..

\*MP : Mass Production

## Notice

All of the contents specified herein are subject to change without notice due to technical improvements, etc.

Please contact TAIYO YUDEN Co., Ltd. for further details of product specifications.

Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

This product is for general electronics equipment such as Audio-Visual equipment, household electronics, office supplies, information services and telecommunications; therefore, in case this product is used for any medical equipment, space equipment, nuclear equipment or disaster prevention equipment, please contact TAIYO YUDEN in advance.

In case this product is used for general electronics equipment or circuits which require high safety and high reliability, thoroughly evaluate on safety and add a protection circuit if necessary.