



* Pb Free Part



Customer Name	Standard	TAIYO YUDEN Mobile Technology Co., Ltd.	
System	Band 28 Block B Duplexer	Date	Mar. 06, 2018
Part Number	D5FC788M0K3ND	Version 2.2baB	Final

Table 1-1. Electrical Specification

Item		Condition (MHz)	Specification			Unit	Remarks	
			Min.	Typ.	Max.			
Tx to Ant	Insertion loss		718 - 748	-	1.8	2.8	dB (*1)	
			718.25 - 747.75	-	1.7	2.6	dB (*1)	
	Ripple		718 - 748	-	1.1	2.5	dB	
	VSWR	Tx	718 - 748	-	1.9	2.2	-	
		Ant	718 - 748	-	1.8	2.1	-	
	Input Power		718 - 748	+29dBm, CW, +50°C,5000h			-	
				+29dBm, LTE 3MHz 1RB, +50°C,5000h			-	
				+29.5dBm, CW, +50°C,2000h			-	
				+29.5dBm, LTE 3MHz 1RB, +50°C,2000h			-	
				+30dBm, CW, +50°C,1000h			-	
				+30dBm, LTE 3MHz 1RB, +50°C,1000h			-	
	Absolute attenuation		10 - 698	32	36	-	dB	
			698 - 710	16	26	-	dB	
			758 - 773	15	39	-	dB	
			773 - 803	50	55	-	dB	Rx
			1436 - 1496	25	29	-	dB	2f0
1565 - 1606			22	25	-	dB	GPS	
2154 - 2244			28	32	-	dB	3f0	
2400 - 2500			30	38	-	dB	ISM	



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Table 1-2. Electrical Specification

Item			Condition (MHz)	Specification			Unit	Remarks
				Min.	Typ.	Max.		
Ant to Rx	Insertion loss		773 - 803	-	1.9	2.5	dB (*1)	
			773.25 - 802.75	-	1.8	2.3	dB (*1)	
	Ripple		773 - 803	-	0.8	2.0	dB	
	VSWR	Ant	773 - 803	-	1.8	2.0	-	
		Rx	773 - 803	-	1.7	2.0	-	
	Absolute attenuation		718 - 748	50	63	-	dB	Tx
			2400 - 2500	30	73	-	dB	ISM
Tx to Rx	Isolation		718 - 748	60	63	-	dB	Tx
			773 - 803	55	60	-	dB	Rx
Terminating Impedance			Tx port	50//12 nH			Ω	
			Rx port	50			Ω	
			Ant port	50//8.2 nH			Ω	
Operating Temperature				-30 to +85			℃	
Maximum DC in all ports				-	-	5	VDC	Device only
DC impedance to ground				100			MΩ	Device only
Device size (L max. x W max. x H max.)				1.8 x 1.4 x 0.44			mm	

(*1) Specification of insertion loss excludes loss that comes from the test board.



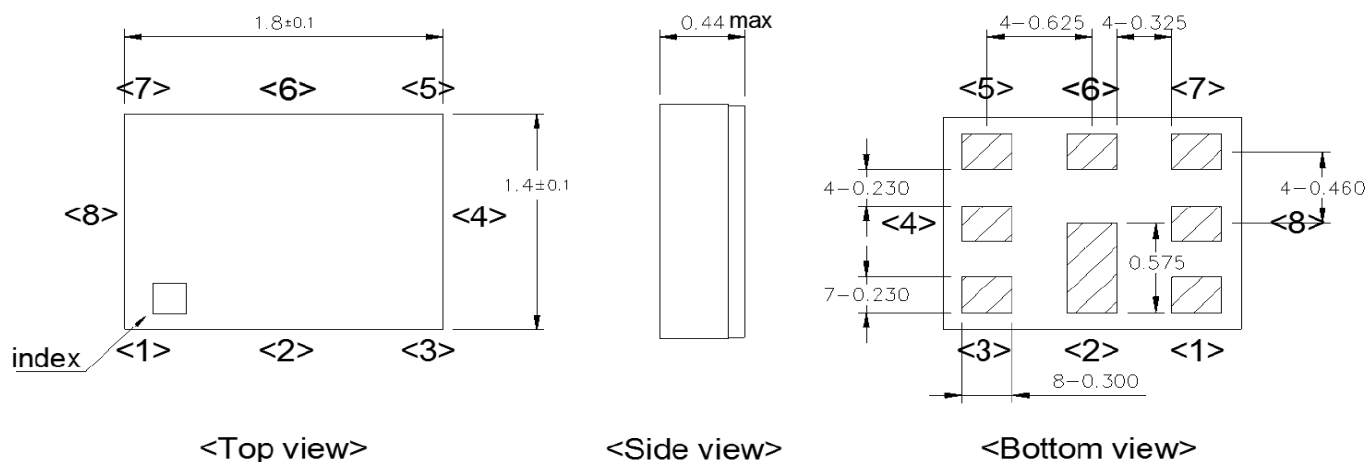
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MSL1

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Dimensions



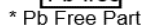
Unit: mm

Figure 1. Dimensions

Pin Assignment

Table 2. Pin Assignment

Pin No.	Pin name	Description
1	Rx	Receiver
2	GND	Ground
3	Tx	Transmitter
4	GND	Ground
5	GND	Ground
6	ANT	Antenna
7	GND	Ground
8	GND	Ground



Evaluation Circuit



Figure 3. Recommended Foot Print Pattern



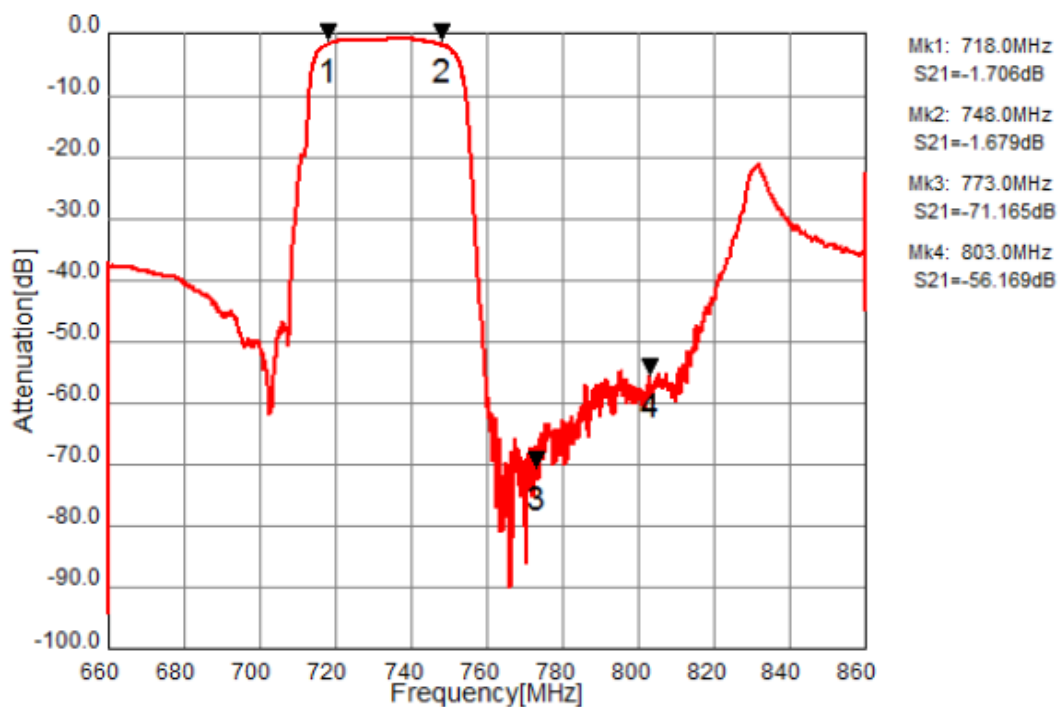
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Tx to Ant



Ant to Rx

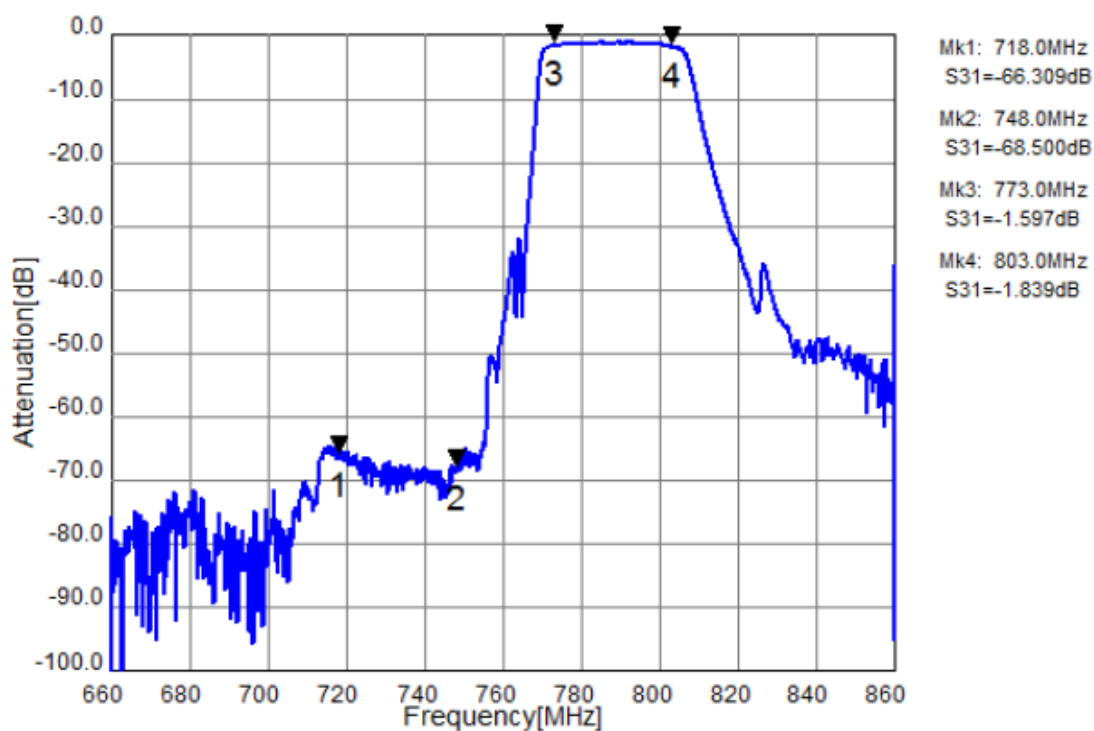


Figure 4-1. Electrical Characteristics

These data excludes loss that comes from the test board

TAIYO YUDEN



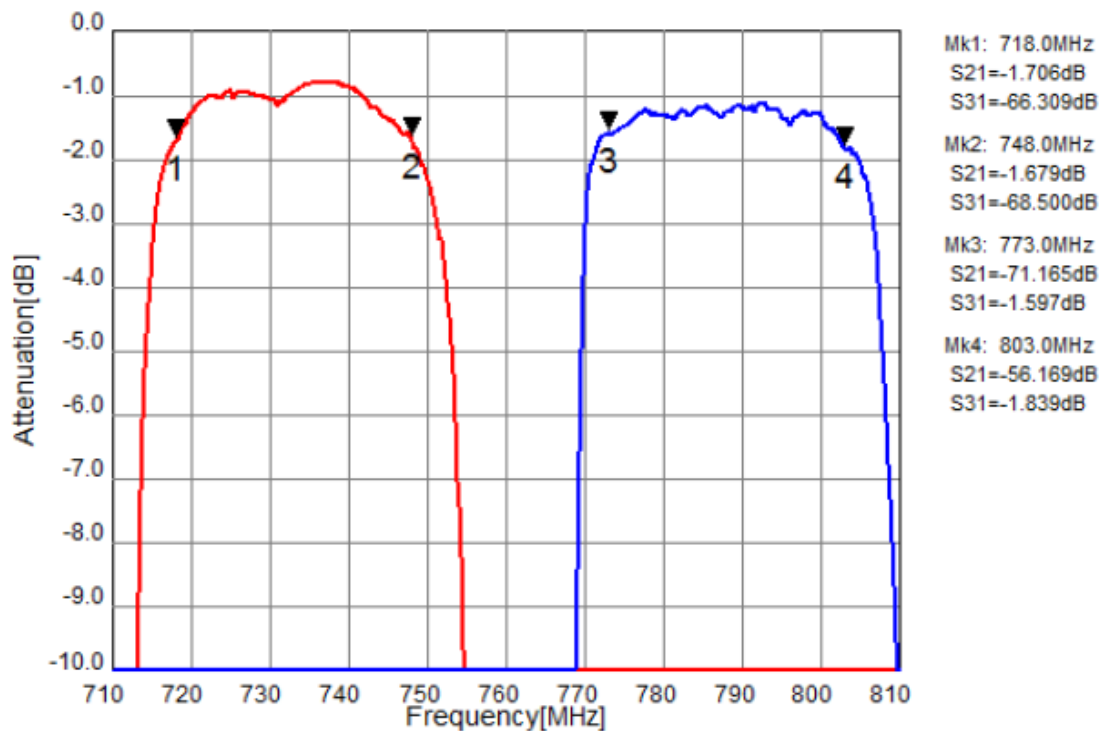
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Tx to Ant, Ant to Rx



Tx to Rx Isolation

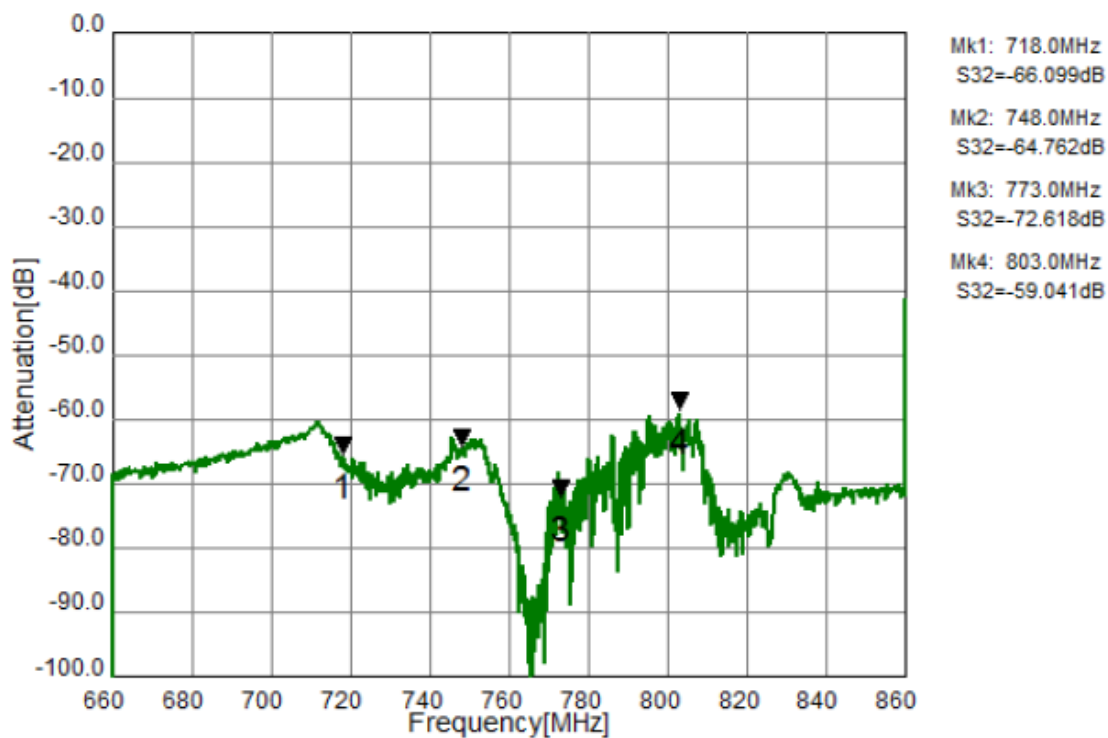


Figure 4-2. Electrical Characteristics

These data excludes loss that comes from the test board

TAIYO YUDEN

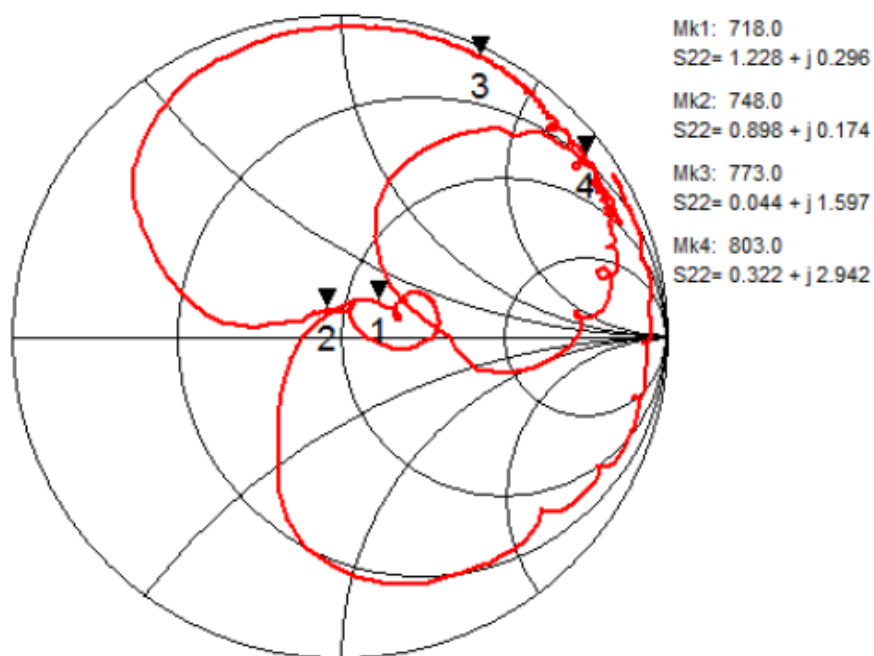
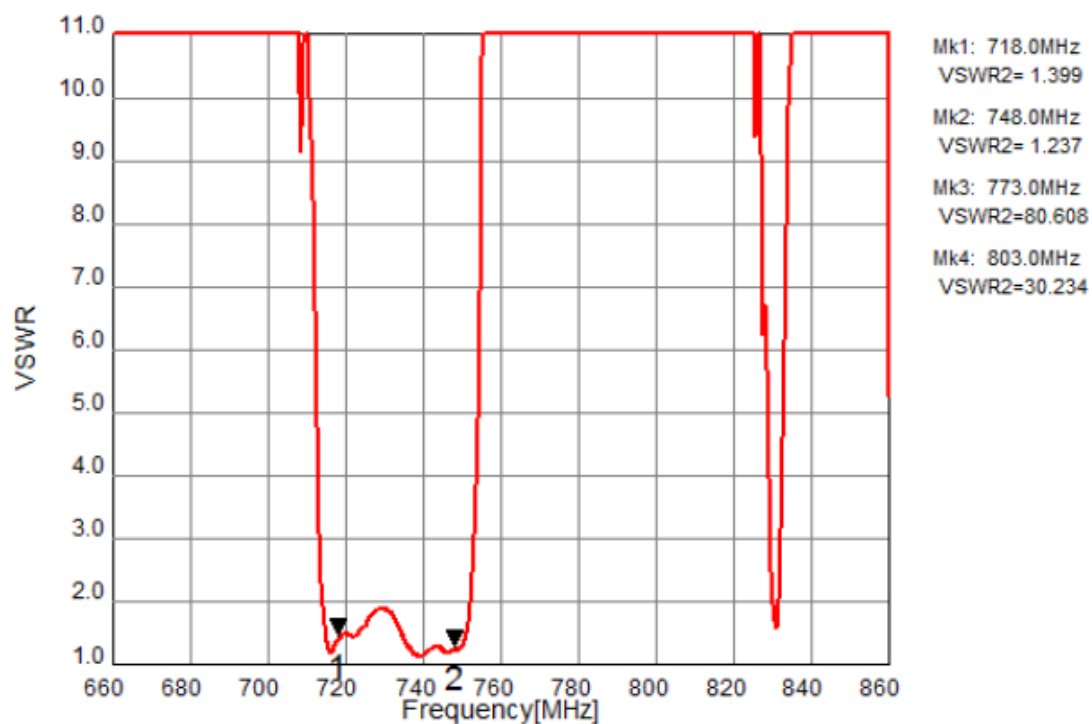


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Tx Port**Figure 4-3. Electrical Characteristics**

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Rx Port

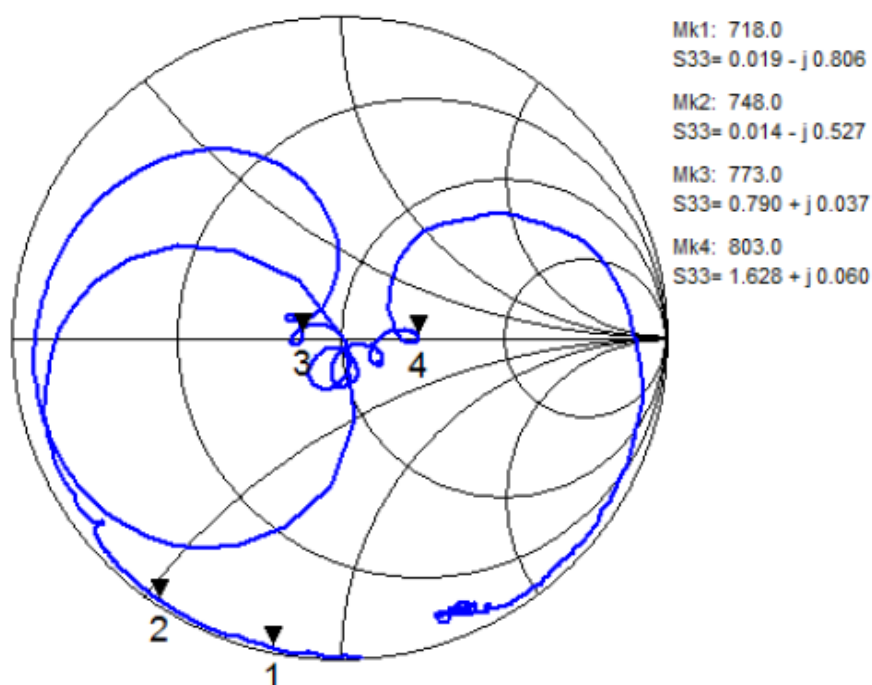
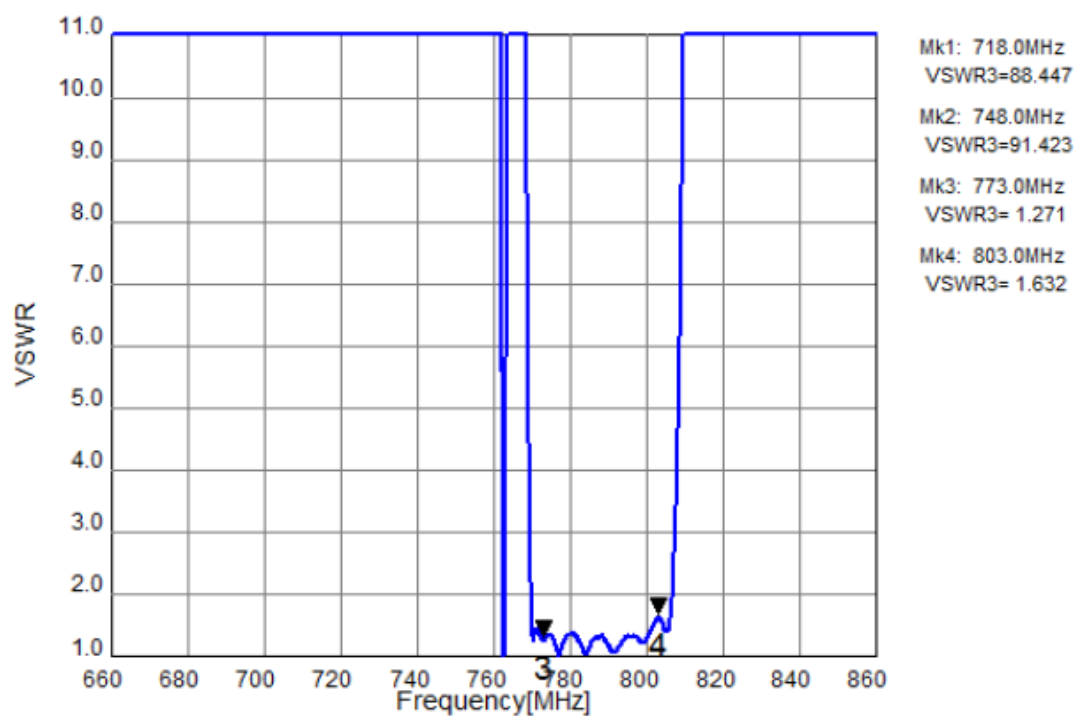


Figure 4-4. Electrical Characteristics

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Ant Port

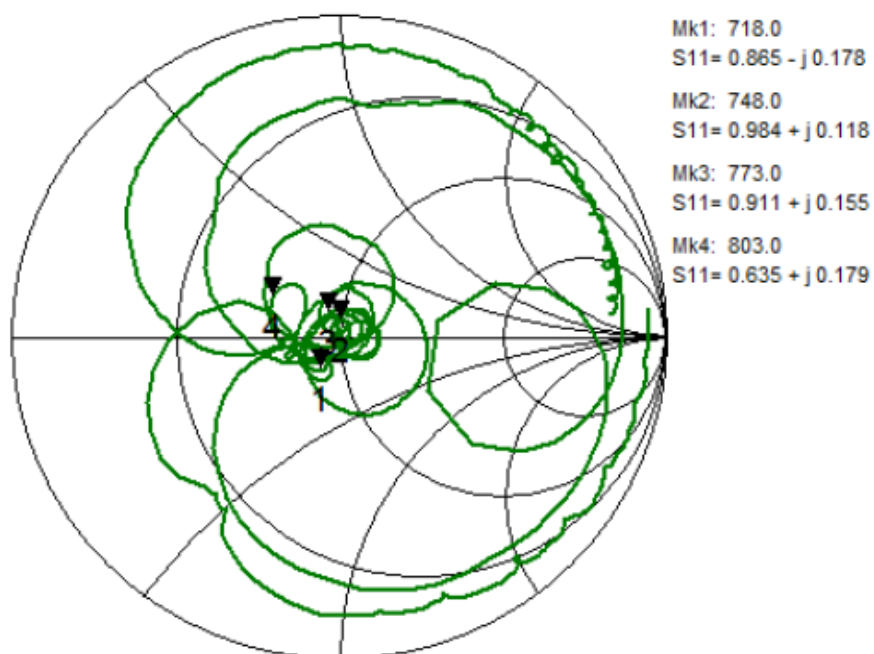
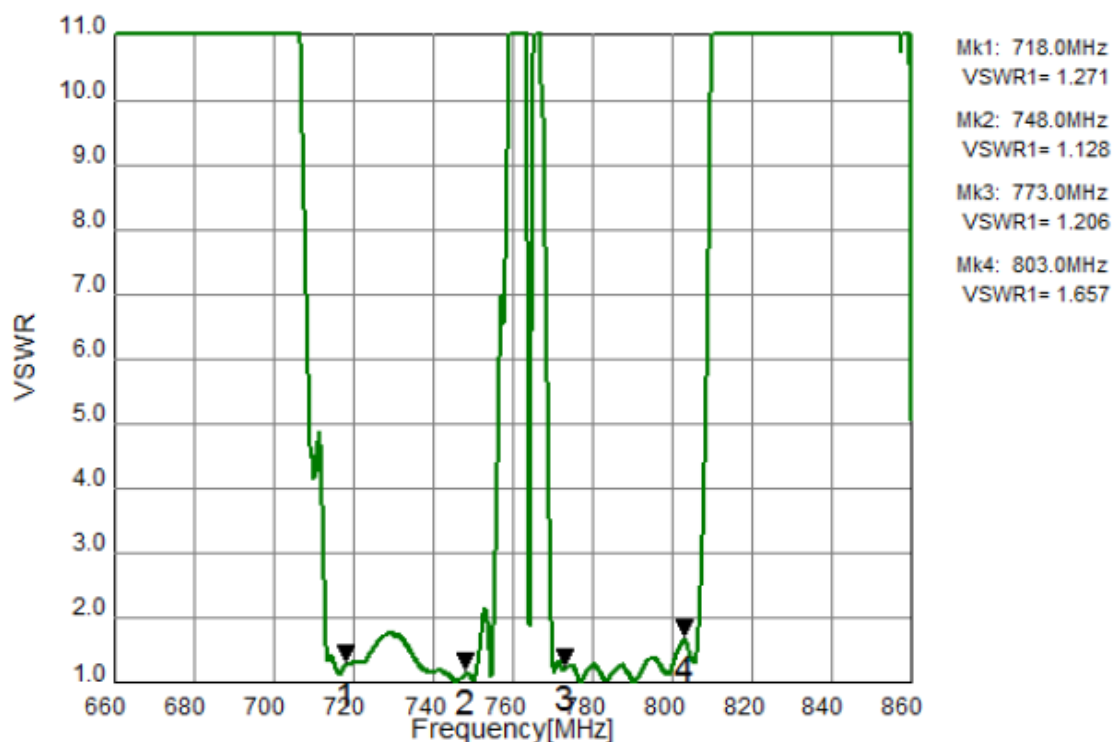


Figure 4-5. Electrical Characteristics

These data excludes loss that comes from the test board

TAIYO YUDEN



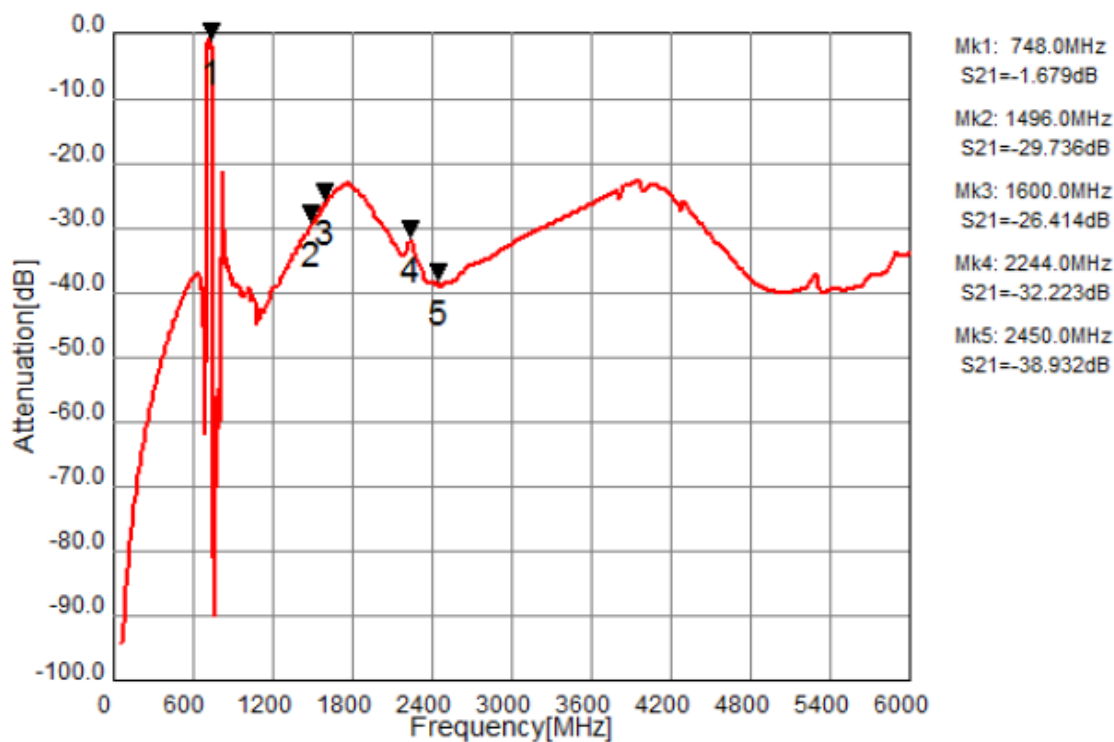
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Tx to Ant(Wide span)



Ant to Rx(Wide span)

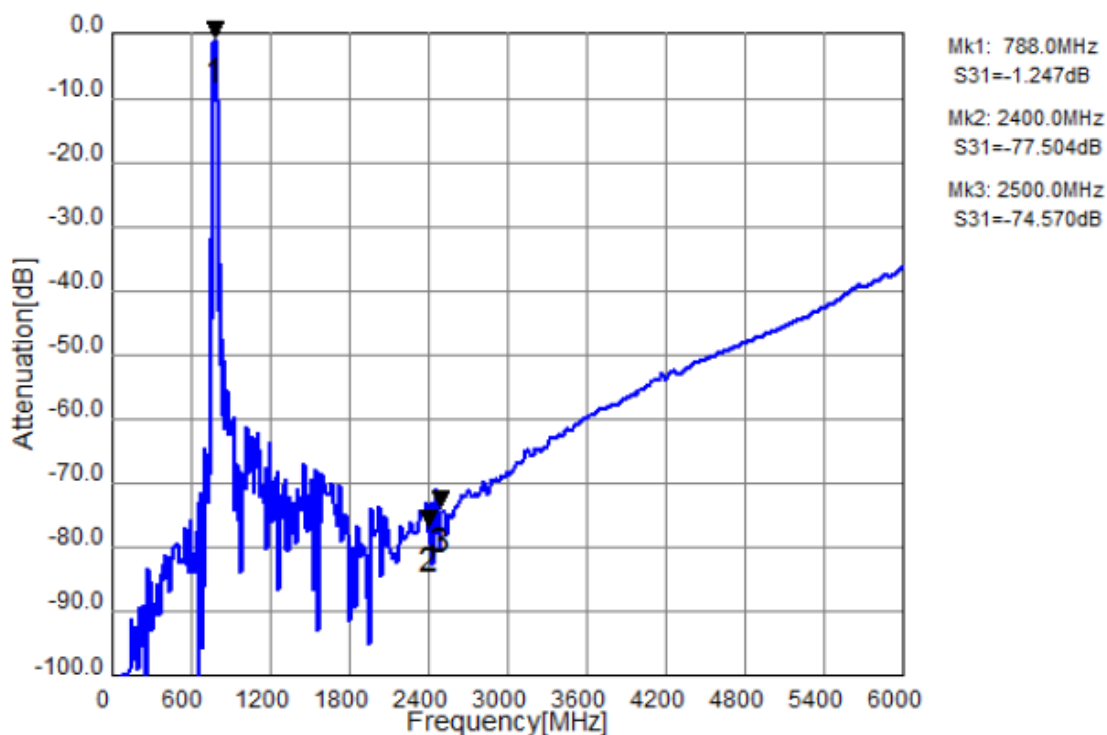


Figure 4-6. Electrical Characteristics

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OPTION

External circuit addition (Second and Third Harmonics trap circuit)

Adding an inductor ($L=10.0\text{nH}$) and a capacitor ($C=5.1\text{pF}$) at ANT port

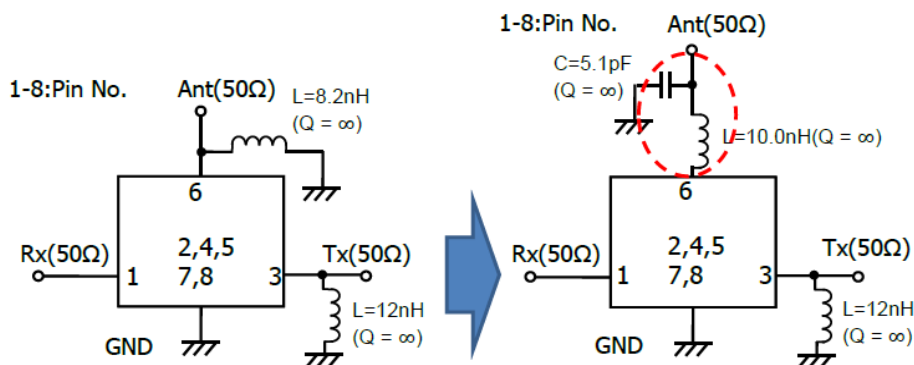
Simulation result

There are some trade-offs of the characteristic

Improvement point : Tx-Second Harmonic Attenuation(12dB Improved)

Tx-Third Harmonic Attenuation(19dB Improved)

Deterioration point : Tx / Rx Insertion loss(0.1dB / 0.2dB deteriorated)



Optional Circuit

Tx to Ant, Ant to Rx

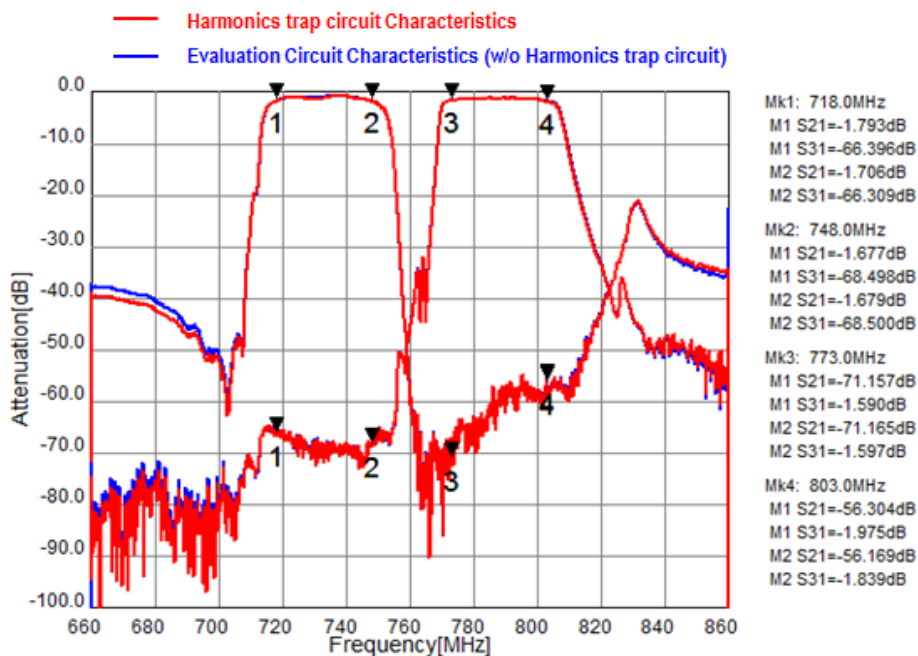


Figure 4-7. Electrical Characteristics

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TAIYO YUDEN



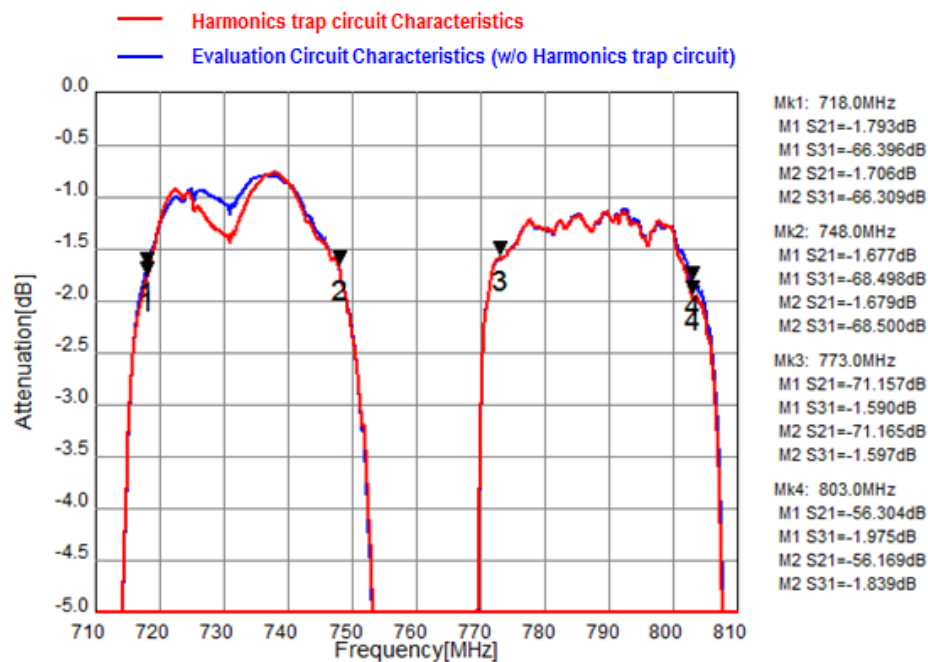
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Tx to Ant, Ant to Rx(Narrow span)



Tx to Ant(Wide span)

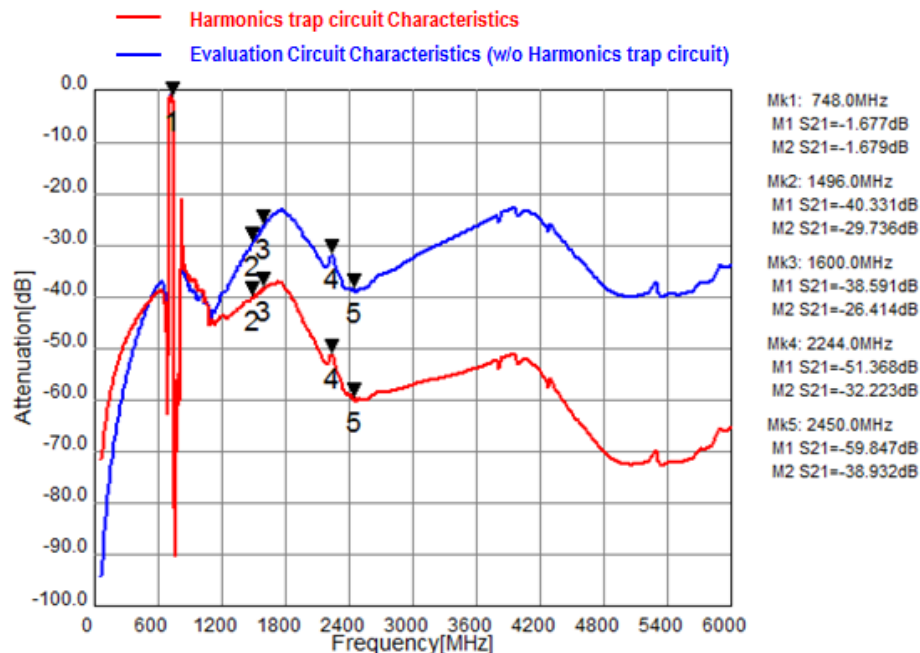


Figure 4-8. Electrical Characteristics

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Ordering Code

Ordering Code	Packing	Reel size	Status
D5FC788M0K3ND-Z	Tape & Reel	3,000 pcs.	MP
D5FC788M0K3ND-ZA	Tape & Reel	less than 3,000 pcs.	MP
D5FC788M0K3ND-Y	Tape & Reel	15,000 pcs.	MP
D5FC788M0K3ND-YA	Tape & Reel	less than 15,000 pcs.	MP
D5FC788M0K3ND-Q	Bulk	few pcs.	MP

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

*MP : Mass Production

Notice

- Please conduct validation and verification of our products in actual condition of mounting and operating environment before using our products.
- The products listed in this specification are intended for use in general electronic equipment (e.g., AV equipment, OA equipment, home electric appliances, office equipment, information and communication equipment including, without limitation, mobile phone, and PC). Please be sure to contact TAIYO YUDEN for further information before using the products for any equipment which may directly cause loss of human life or bodily injury (e.g., transportation equipment including, without limitation, automotive powertrain control system, train control system, and ship control system, traffic signal equipment, disaster prevention equipment, medical equipment classified as Class I, II or III by IMDRF, highly public information network equipment including, without limitation, telephone exchange, and base station).
Please do not incorporate our products into any equipment requiring high levels of safety and/or reliability (e.g., aerospace equipment, aviation equipment, medical equipment classified as Class IV by IMDRF, nuclear control equipment, undersea equipment, military equipment).
When our products are used even for high safety and/or reliability-required devices or circuits of general electronic equipment, it is strongly recommended to perform a thorough safety evaluation prior to use of our products and to install a protection circuit as necessary.
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