

# Technical Proposal for JX-CD-813S Cavity Duplexer

## Revision History

Version	Date	Author	Revision description	Comment
V1.0	2017/09/12	Lee	Created	/
V1.1	2018/04/11	Lee	Update the port configuration	customer request

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## 1. Mechanical layout

Table 1 Mechanical Specifications @ JX-CD-813S

Dimension	LxWxH: 183mm x 164mm x 36 mm (Max 43mm)
Port connectors	SMA 4 hole panel receptacle plug
Surface Finish	Silver
Notes	Material shall be RoHS 6/6

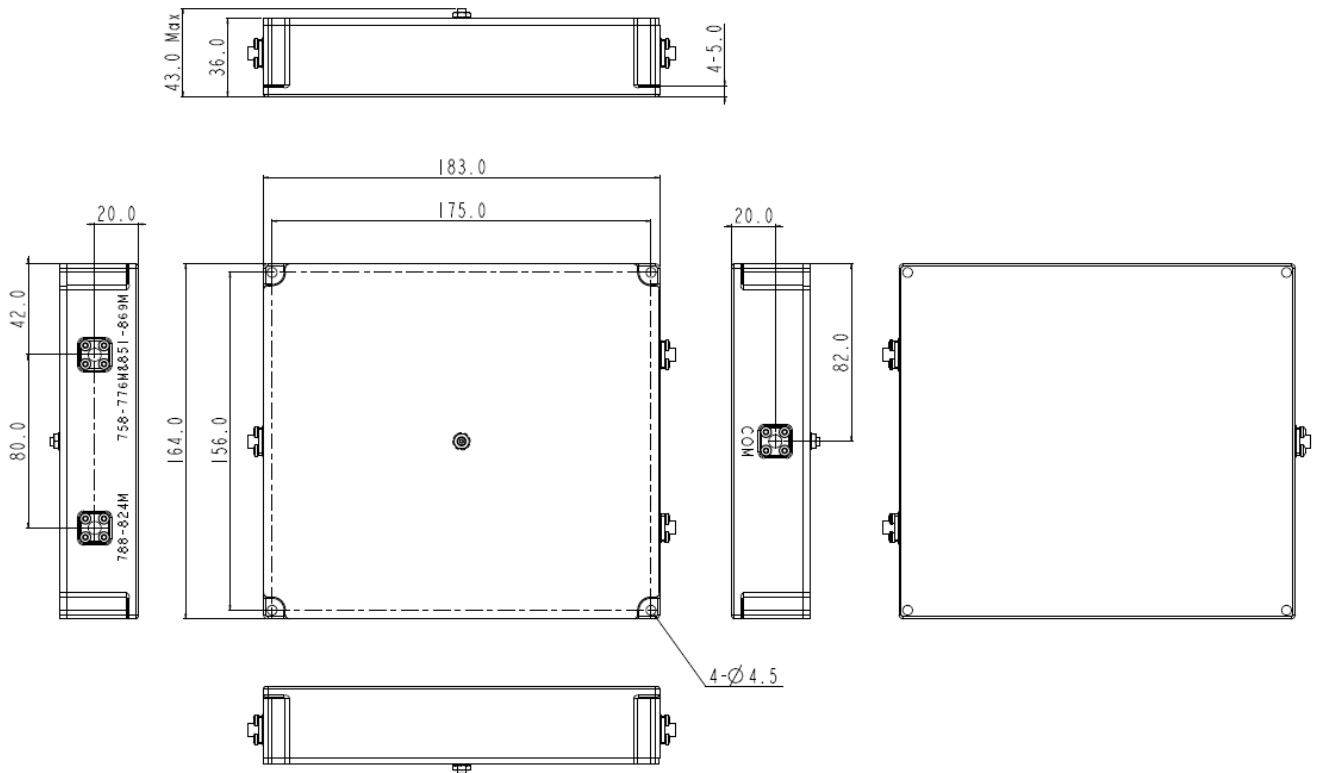


Figure 1 JX-CD-813S front panel layout

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## 2. Electrical analysis

### 2.1 Schematic diagram of the Duplexer

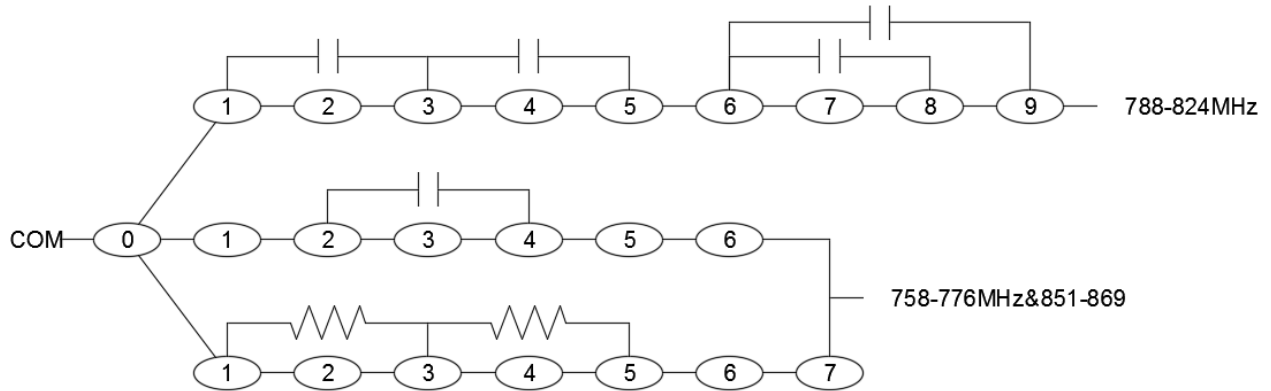


Figure 2 Topology of the Duplexer

### 2.2 Insertion loss budget

Table 2 Insertion loss budget @ JX-CD-813S

No.	Parameter Name	758-776MHz		788-824MHz		851-869MHz	
		Normal	FULL	Normal	FULL	Normal	FULL
1	TEMP	Normal	FULL	Normal	FULL	Normal	FULL
2	Simulate	1.1	1.32	0.85	0.88	0.96	1.21
3	Loss Variation by ambient temperature	/	0.07	/	0.07	/	0.07
4	Coupler+Lowpassfilter+connection link	0.02	0.02	0.02	0.02	0.02	0.02
5	Margin	0.1	0	0.05	0	0.1	0
6	Total	1.22	1.41	0.92	0.97	1.08	1.3
7	Spec	2.0	2.0	1.0	1.0	2.0	2.0

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### 2.3 Electrical specifications

Table 3 Electrical specifications @ JX-CD-813S

Item	Frequency Range	758-776MHz&851-869MHz	788-824MHz	JX Suggest
1	Return loss (Normal Temp)	≥18 dB	≥18 dB	OK
	Return loss (Full Temp)	≥18 dB	≥18 dB	≥16 dB
2	Insertion loss (Normal Temp)	≤2.0 dB	≤1.0 dB	OK
	Insertion loss (Full Temp)	≤2.0 dB	≤1.0 dB	OK
3	In-band ripple (Full Temp)	≤0.8 dB	≤0.8 dB	OK
4	Rejections (Full Temp)	≥80dB@788-824MHz	≥80dB@758-776MHz&851-869MHz	OK
5	Impedance all ports	50 Ohms		OK
6	Temperature Range	-30°C to 60°C		OK

### 2.4 The simulation curve

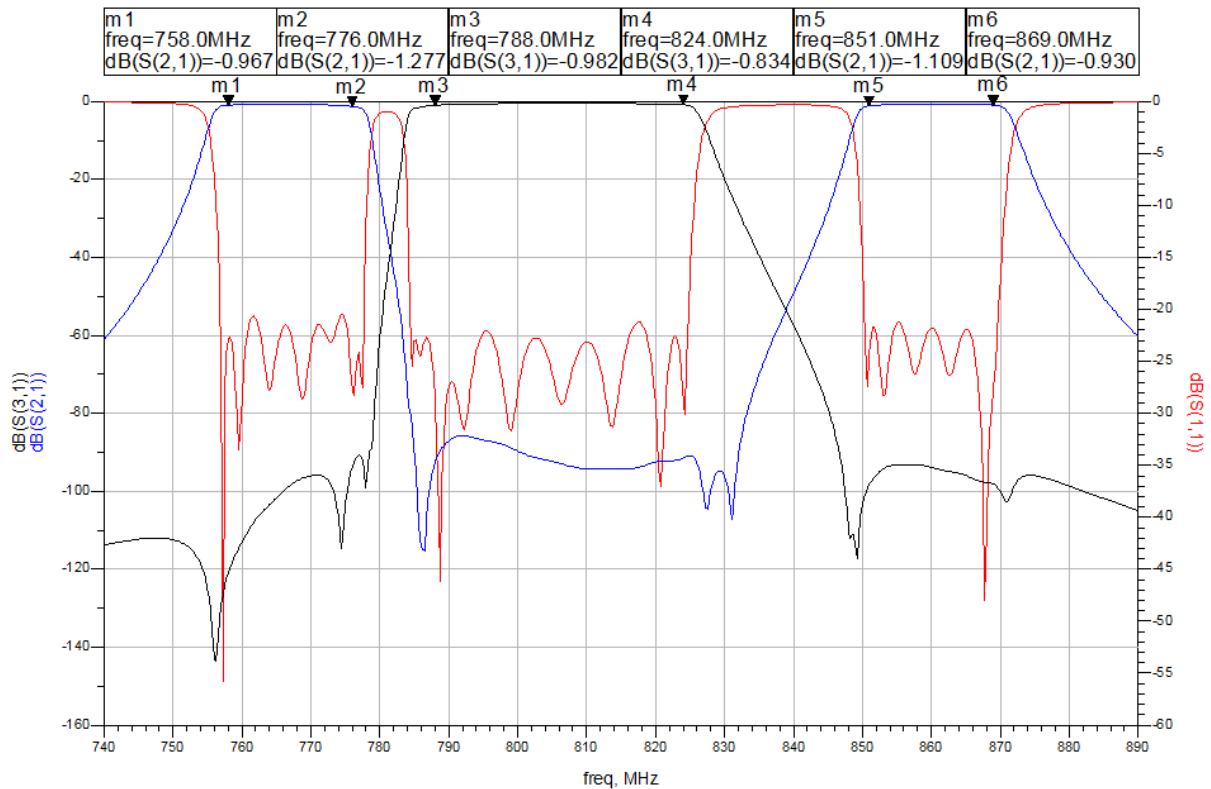


Figure 3 The simulation curve of Duplexer

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