

# Technical proposal for JX-CC10-703M2170M-75NS3P TRX Cavity Combiner

- ◆ Low Insertion Loss
- ◆ High Rejection
- ◆ High Power
- ◆ Small Volume
- ◆ High Reliability

## Revision History

Version	Date	Author	Revision description	Comment
V1.0	2020/06/16	Lee	Created	/
V1.1	2020/06/17	Lee	Updated the mechanical specification and coupling	Customer request
V1.2	2020/06/30	Lee	Updated the rejection @ 1800 band in rx	JingXin request

**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.

## Table of content

Technical proposal for JX-CC10-703M2170M-75NS3P TRX Cavity Combiner .....	1
1. Mechanical layout.....	3
2. Electrical analysis.....	4
2.1 Schematic diagram of the combiner.....	4
2.2 Electrical specifications .....	5
2.3 The simulation curve .....	6

## Figures

Figure 1 JX-CC10-703M2170M-75NS3P front panel layout .....	3
Figure 2 Topology of the TX .....	4
Figure 3 Topology of the RX.....	4
Figure 4 The simulation curve of the tx band .....	6
Figure 5 The simulation curve of the rx band .....	7

## Tables

Table 1 Mechanical specifications @ JX-CC10-703M2170M-75NS3P .....	3
Table 2 Electrical specifications @ TX .....	5
Table 3 Electrical specifications @ RX.....	5

**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.

## 1. Mechanical layout

Table 1 Mechanical specifications @ JX-CC10-703M2170M-75NS3P

Dimension	L x W x H: 129mm x 79mm (90.0mm Max) x 240mm	
Port connectors	TX Out: N-Female	Other: SMA-Female
Finish	Sliver	
Weight	≤3.6 kg	
Notes	Material shall be RoHS 6/6	

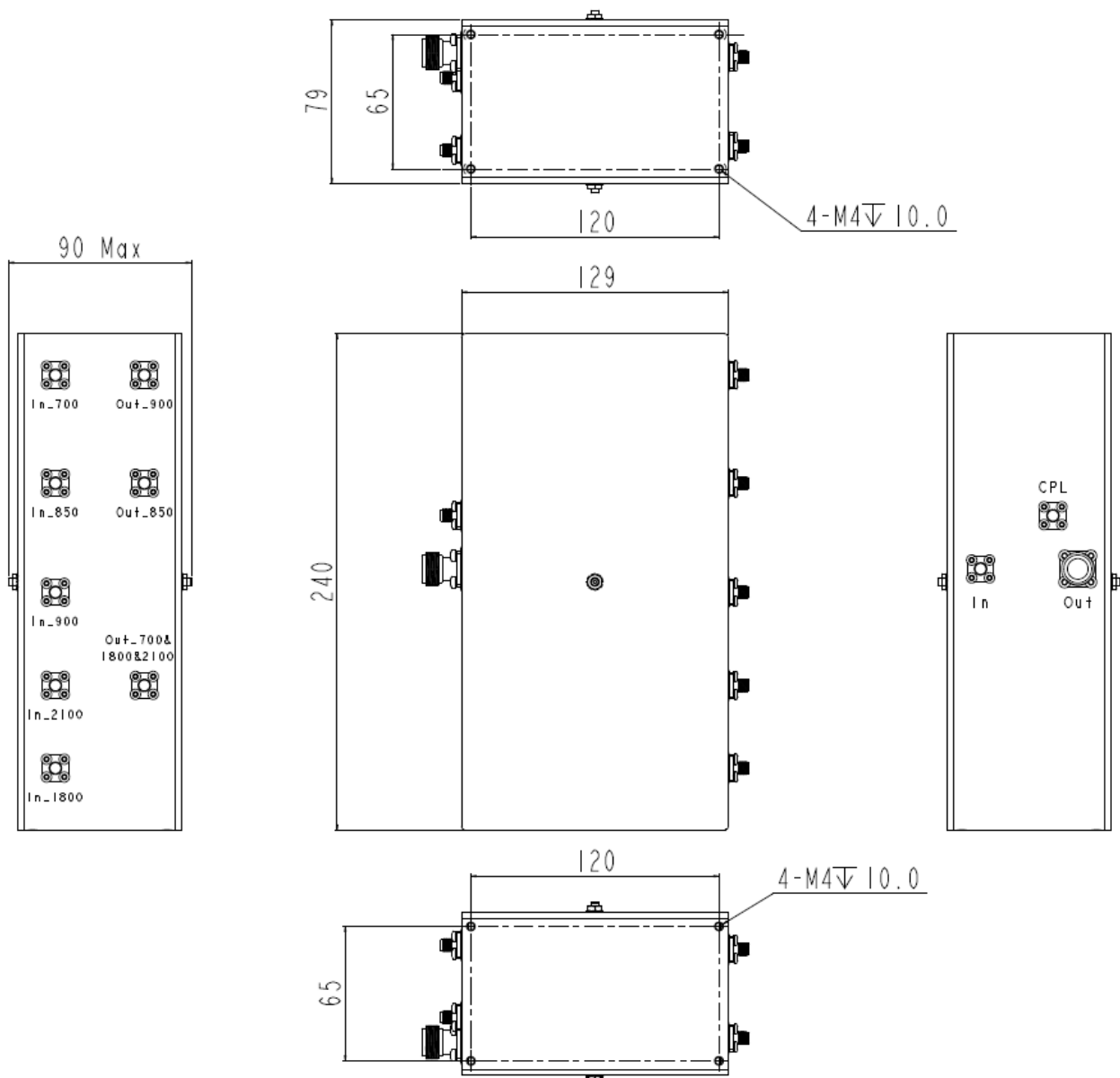


Figure 1 JX-CC10-703M2170M-75NS3P front panel layout

**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

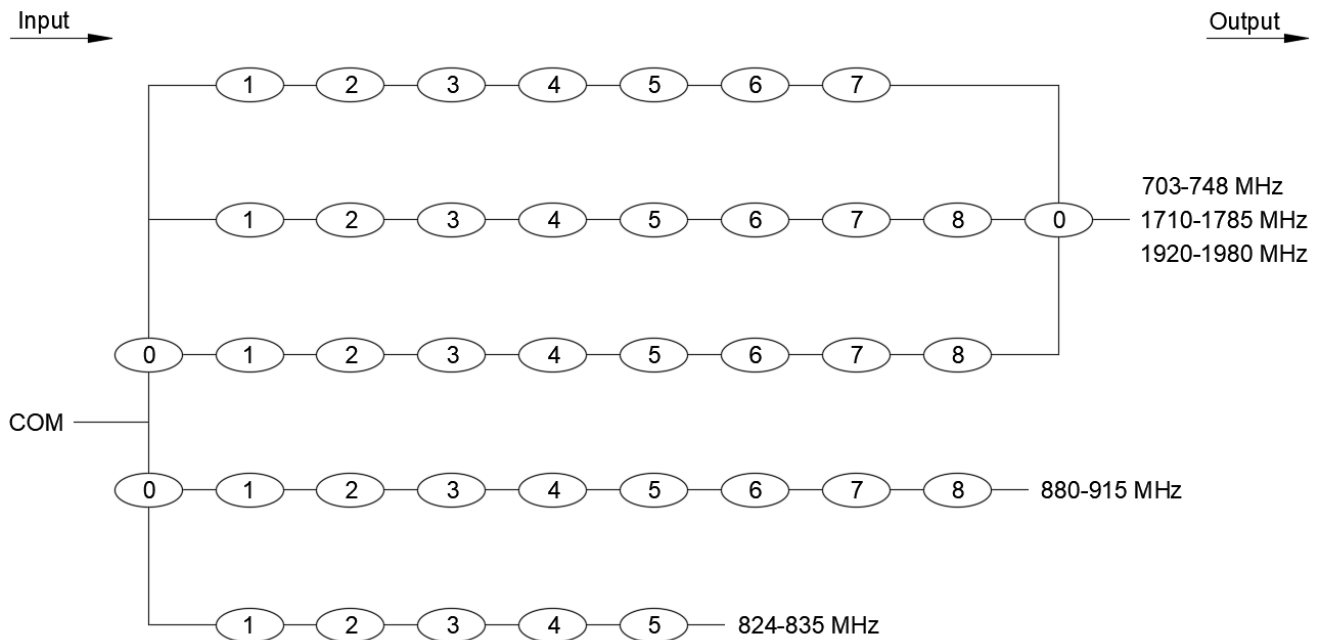
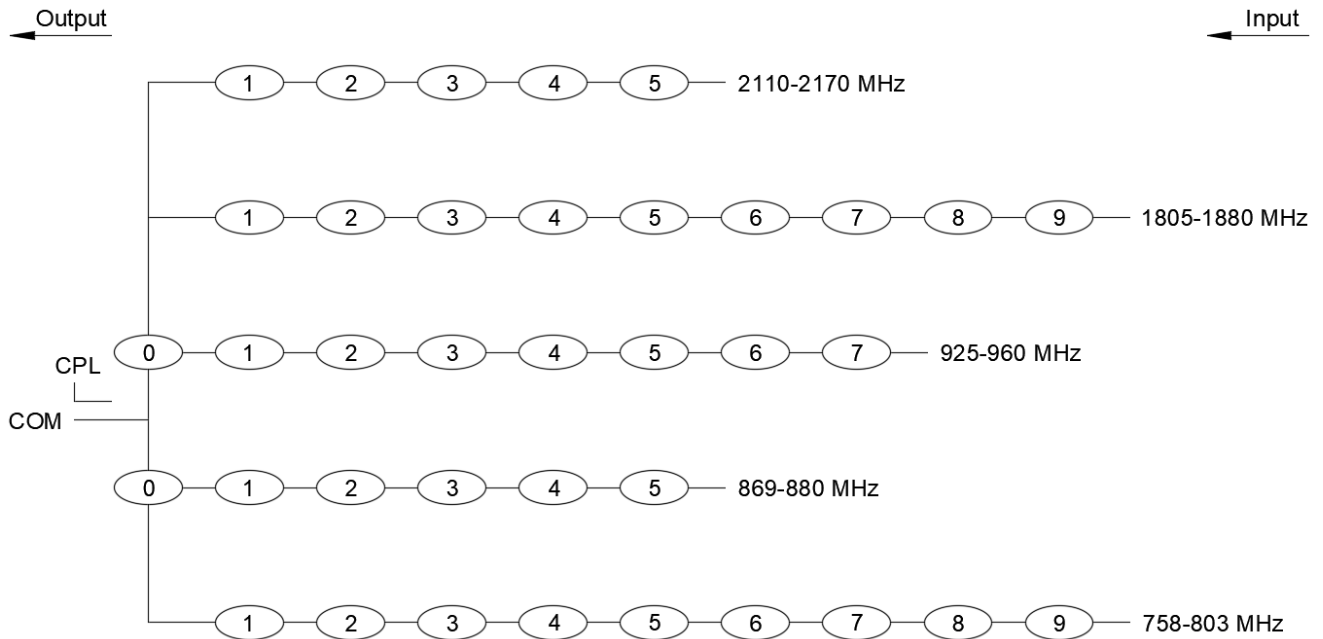
E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.

## 2. Electrical analysis

### 2.1 Schematic diagram of the combiner



**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.

## 2.2 Electrical specifications

Table 2 Electrical specifications @ TX

Item	Parameter	700	850(B5)	900	1800	2100
1	Frequency range	758-803 MHz	869-880 MHz	925-960 MHz	1805-1880 MHz	2110-2170 MHz
2	Return loss	≥18 dB	≥18 dB	≥18 dB	≥18 dB	≥18 dB
3	Insertion loss	≤1.5 dB	≤1.5 dB	≤1.5 dB	≤1.5 dB	≤1.0 dB
4	Rejection at all stop bands	≥75 dB	≥75 dB	≥75 dB	≥75 dB	≥60 dB
5	Stop band ranges	703-748 MHz & 824-835 MHz & 880-915 MHz & 1710-1785 MHz & 1920-1980 MHz Note: For band 850, the stop band int the 900 band is not applied.				
6	Coupling	60dB±8.0dB				
7	Average power	+48dBm(60Watt) @ each input		+55dBm(300Watt) @ output		
8	Peak power	+53dBm(200Watt) @ each input		+60dBm(1000Watt) @ output		
9	Impedance	50 Ω				

Table 3 Electrical specifications @ RX

Item	Parameter	850(B5)	900	700 & 1800 & 2100		
1	Frequency range	824-835 MHz	880-915 MHz	703-748 MHz	1710-1785 MHz	1920-1980 MHz
2	Return loss	≥18 dB	≥18 dB	≥18 dB	≥18 dB	≥18 dB
3	Insertion loss	≤1.5 dB	≤1.5 dB	≤1.5 dB	≤1.5 dB	≤1.0 dB
4	Rejection	≥70 dB @ 758-803&869-880&1805-1880&2110-2170&2300-2400	≥70 dB @ 758-803&925-960&1805-1880&2110-2170&2300-2400	≥70 dB @ 758-803&869-880&925-960&2110-2170&2300-2400 <b>≥65 dB @ 1805-1880</b>		
5	Average power	+30dBm				
6	Impedance	50 Ω				

**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.

2.3 The simulation curve

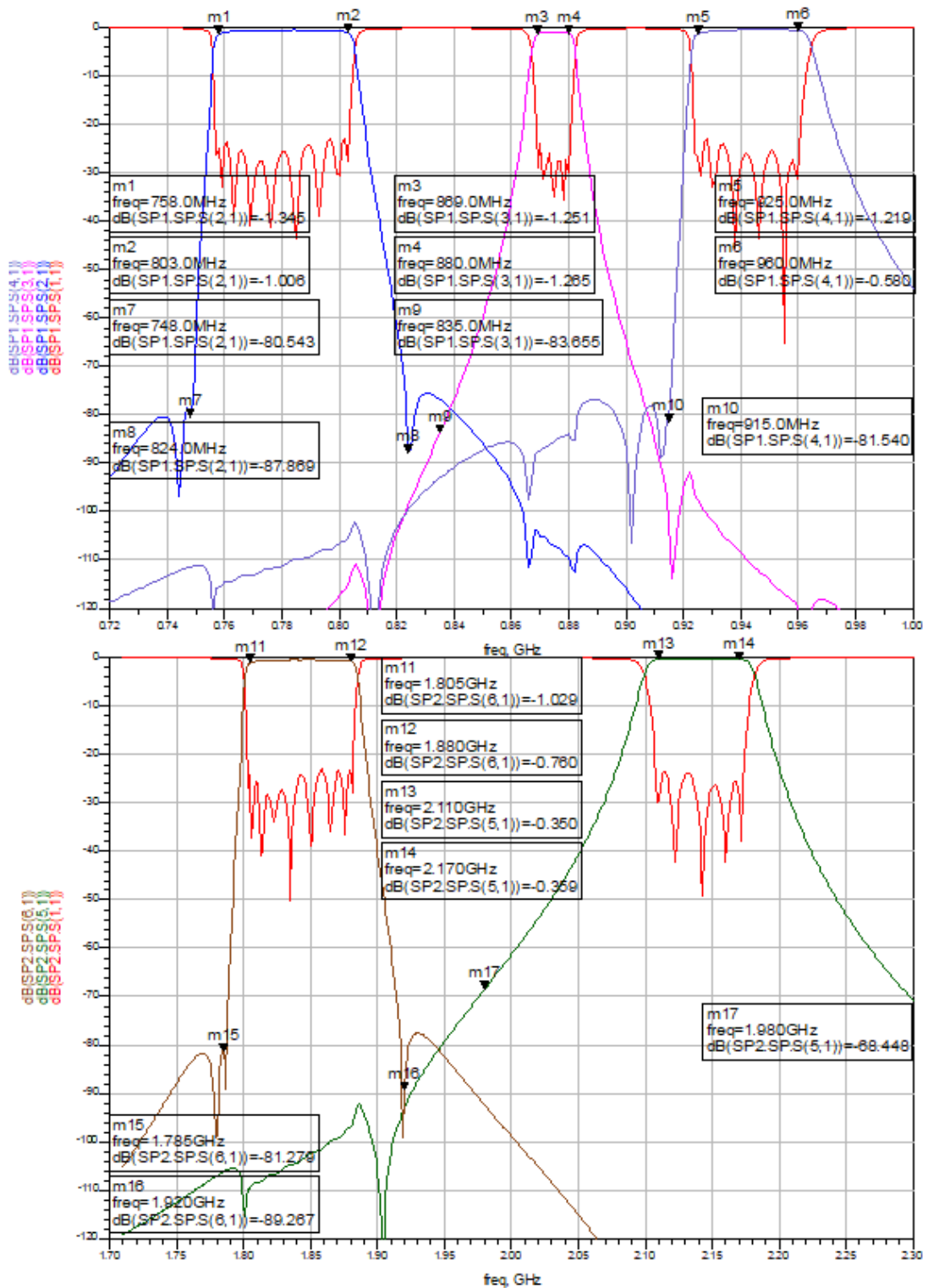


Figure 4 The simulation curve of the tx band

**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.

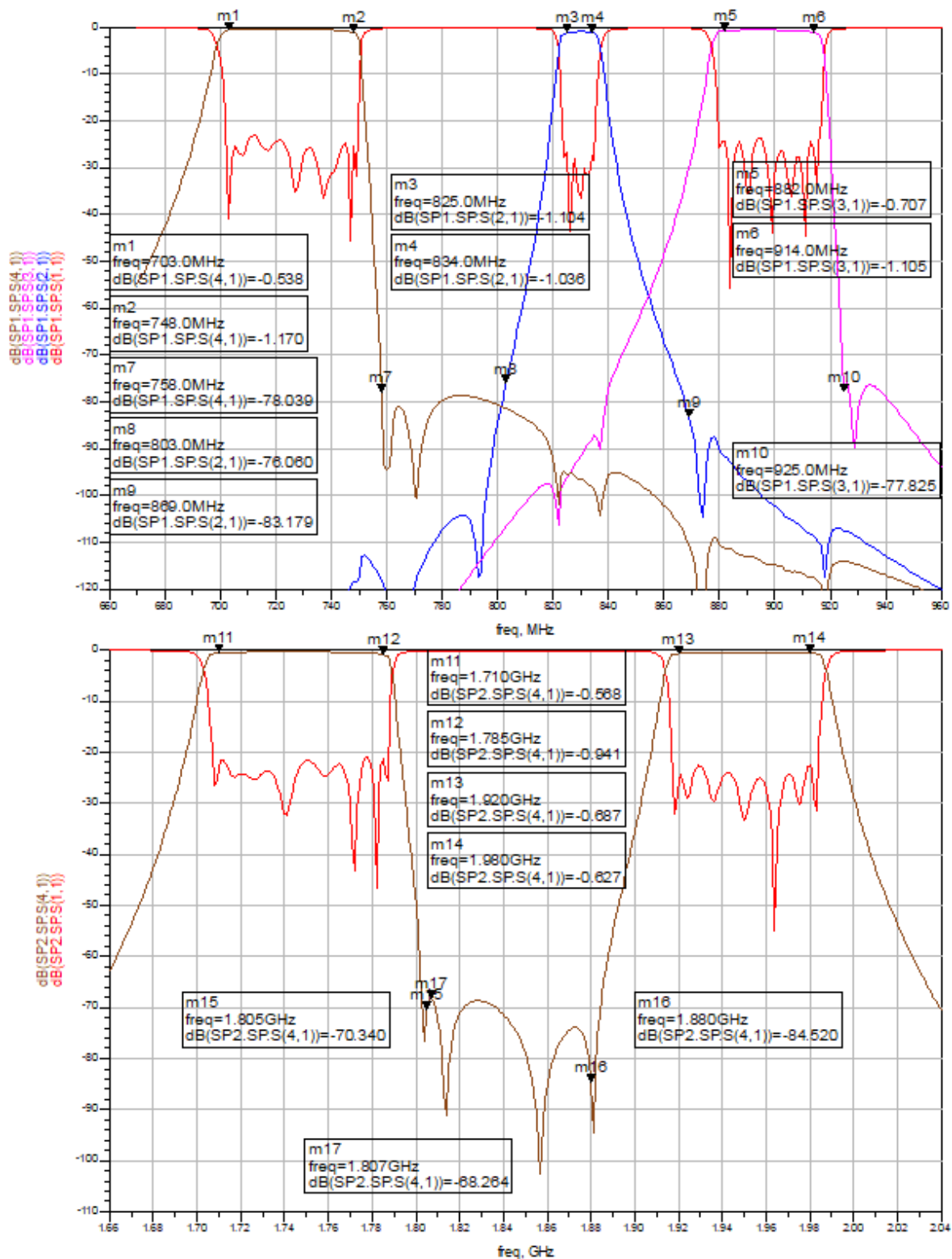


Figure 5 The simulation curve of the rx band

**JING XIN MICROWAVE TECHNOLOGY CO.,LTD**

E-mail: [sales@cdjx-mw.com](mailto:sales@cdjx-mw.com) Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65026087 ext.8033 Zip Code:610045

Add: No.65,West 1st Wu Ke Road, Wu Hou District, Cheng Du City, Si Chuan Province, China.