

Technical proposal for CMH000165-B-B8 Cavity Duplexer

Revision History

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JING XIN MICROWAVE TECHNOLOGY CO.,LTD

E-mail: sales@cdjx-mw.com Web: <http://www.cdjx-mw.com>

TEL: +86-28-85026087 FAX: +86-28-65941390 Zip Code:610045

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

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1. Mechanical layout

Table 1 Mechanical Specifications

Dimension	LxWxH: 295mm x 200mm x 38 mm
Number of Duplexer	2
TX Port connectors	SMA 4 hole panel receptacle plug
RX Port connectors	SMP 2 hole panel receptacle plug
ANT Port connectors	4.3/10 connector type
Ingress Protection	IP67 when coupled with RRH
Finish	RAL9010
Notes	Material shall be RoHS 6/6

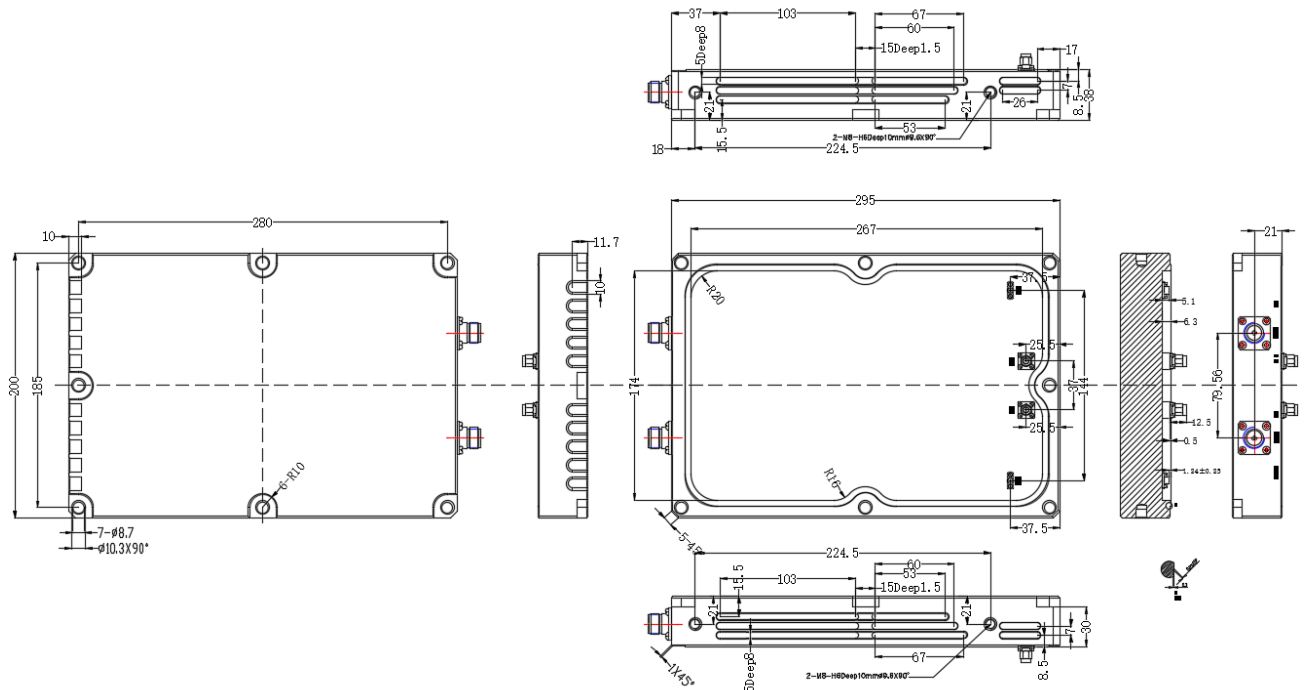


Figure 1 CMH000165-B-B8 front panel layout

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2. Electrical analysis

2.1 Schematic diagram of the Duplexer

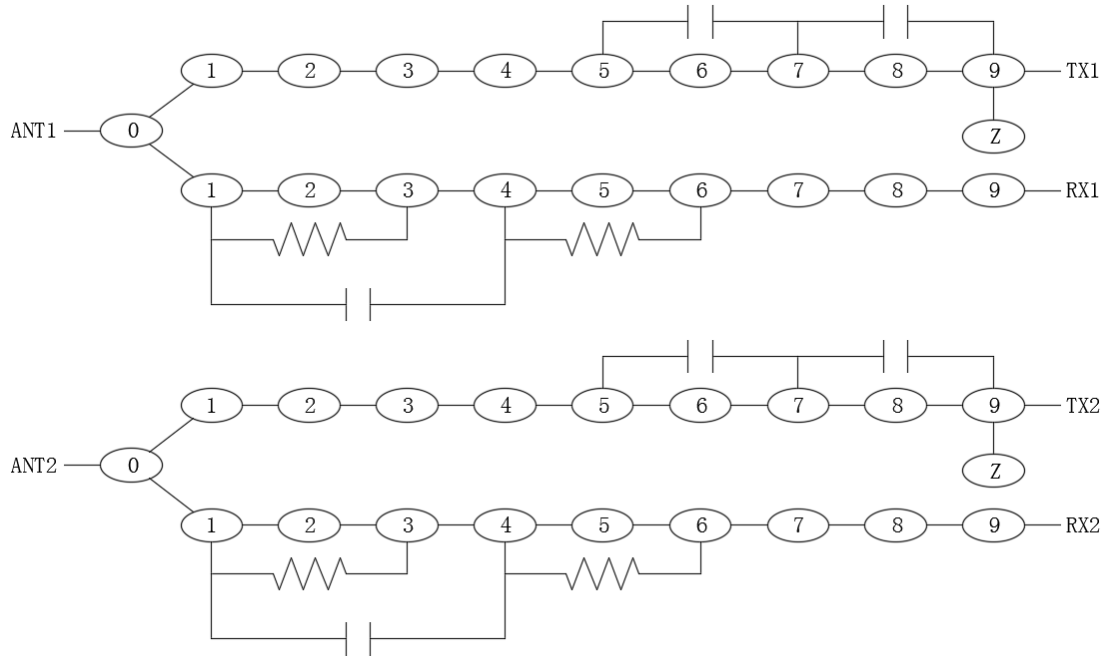


Figure 2 Topology of the Duplexer

2.2 Insertion loss budget

Table 2 Insertion loss budget @ TRX1/2 path

No.	Parameter Name	Insertion Loss @ TX1/2 path		Insertion Loss @ RX1/2 path	
		925~960MHz		880~915MHz	
1	TEMP	Normal	FULL	Normal	FULL
2	Simulate	1.46	1.55	1.5	1.62
3	Loss Variation by ambient temperature	/	0.10	/	0.10
4	Coupler+Lowpassfilter+connection link	0.05	0.05	0.05	0.05
5	Margin	0.1	0.1	0.1	0.1
6	Total	1.61	1.8	1.65	1.87
7	Spec	1.9	1.9	1.9	1.9

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2.3 Electrical specifications

Table 3 Electrical specifications of TRX1/2 path

Item	Parameter	TX	RX	Spec	JX Suggest
1	Return loss (Normal Temp)	925-960MHz	880-915MHz	≥20 dB	≥18 dB
	Return loss (Full Temp)	925-960MHz	880-915MHz	≥20 dB	≥16 dB
2	Max insertion loss (Normal Temp)	925-960MHz	880-915MHz	≤1.9 dB	OK
	Max insertion loss (Full Temp)	925-960MHz	880-915MHz	≤1.9 dB	OK
3	In-band ripple(Full Temp)	925-960MHz	880-915MHz	≤1.1 dB	OK
4	Rejections(Full Temp)	880MHz	865MHz	≥50 dB	OK
		880-915MHz	925-960MHz	≥80 dB	OK
		975MHz	960MHz	≥50 dB	OK
5	Isolation TX-RX	880-915MHz&925-960MHz		≥80 dB	OK
6	Isolation between the 2 duplexers	880-960MHz		≥60 dB	OK
7	Impedance all ports			50 Ohm	OK
8	Admissible Power			150W CW	OK
9	PIMD			≤153 dBc	OK
10	Temperature Range			-40°C to 85°C	OK

2.4 The simulation curve

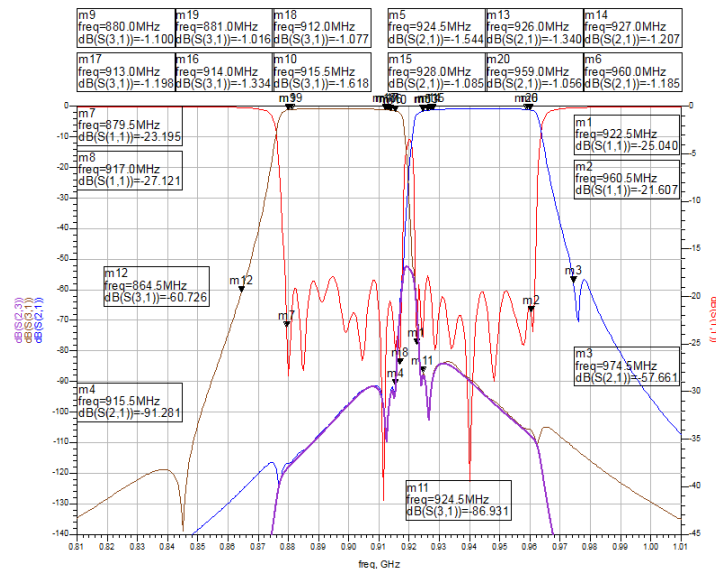


Figure 3 The simulation curve of the Duplexer

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