

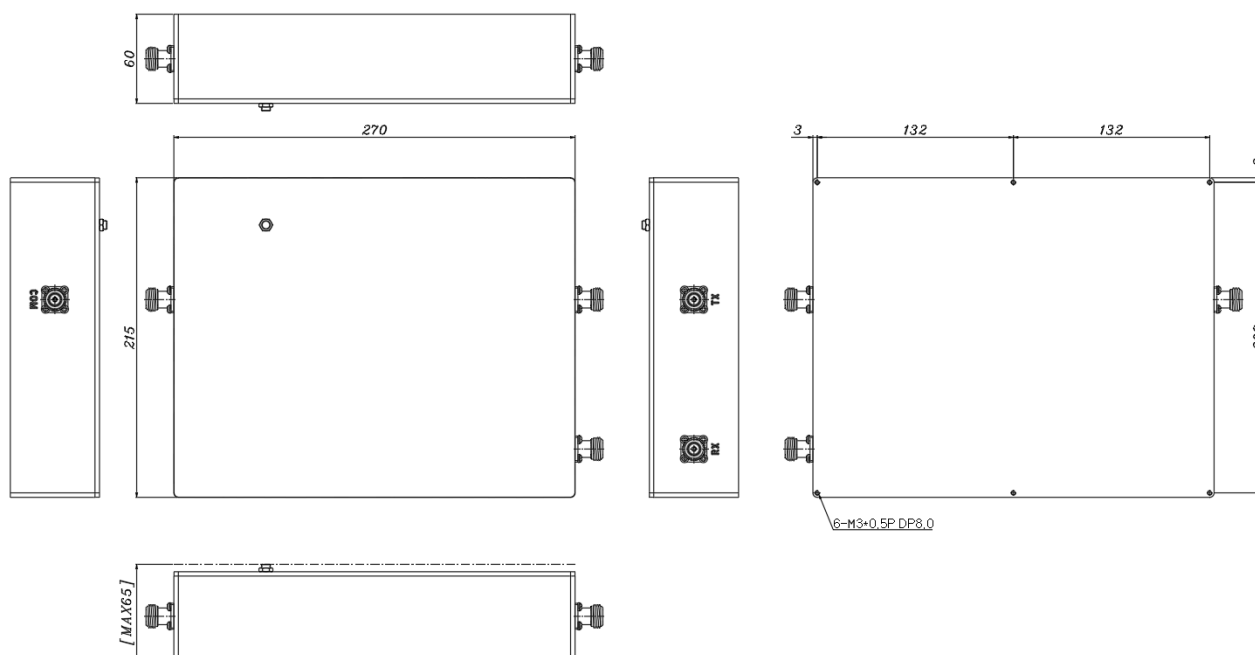
PRODUCT SPECIFICATION FOR INFORMATION

PRELIMINARY SPECIFICATION

Product Name : Cavity Diplexer
Part No : MDI-C402/C419_2M/2MN-A-R0

.	Rev. No.	Description	Date	Author	Final Approver
1	R0	Draft	2026.04.23	Jeffrey Chung	Michael Jeon

■ Mechanical Drawing



■ Electrical Specification

Item	Specification		Remark
	TX	RX	
1. Center Frequency	402 MHz	419 MHz	OK
2. Pass Band Frequency	$f_{o\pm 1}[401\sim 403]\text{MHz}$	$f_{o\pm 1}[418\sim 420]\text{MHz}$	OK
3. Insertion Loss	1.3 dB Max.	1.35 dB Max.	OK
4. Ripple	0.2 dB		OK
5. Return Loss	17.0dB Min.		OK
6. Rejection	55dB min. @ 20~88MHz	55dB min. @ 20~88MHz	OK
	55dB min. @150~240MHz	55dB min. @150~240MHz	OK
	70dB min. @220~396MHz	70dB min. @220~400MHz	OK
	80dB min. @418~420MHz	80dB min. @401~412.5MHz	OK
	85dB min. @420~450MHz	75dB min. @426~450MHz	OK
	85dB min. @450~1000MHz	85dB min. @450~1000MHz	OK
7. In/Out Impedance	50 Ω		OK
8. Input Power	CW 100 W Max.		OK
9. Operation Temperature Range	-10°C ~ +85°C		OK
10. Dimension [WxDxH]	270.0 x 215.0 x 65.0 [mm]		OK
11. Connector	N(f)		OK
12. Random Vibration	MIL-STD-810F method 541.5 Procedure C1. 3axes, 20min.per each axis.		OK
13. Dust	MIL-STD-810F method 514.4 Procedure 3 settling dust		OK
14. Finish	Black Painting		OK

■ Simulation Data

[TX] Insertion loss

IL_TX	Ripple_TX
-1.11	-0.08

Insertion loss

A1
freq=401.00MHz
dB(S(2,1))=-1.1138

A2
freq=402.00MHz
dB(S(2,1))=-1.0585

A3
freq=403.00MHz
dB(S(2,1))=-1.0410

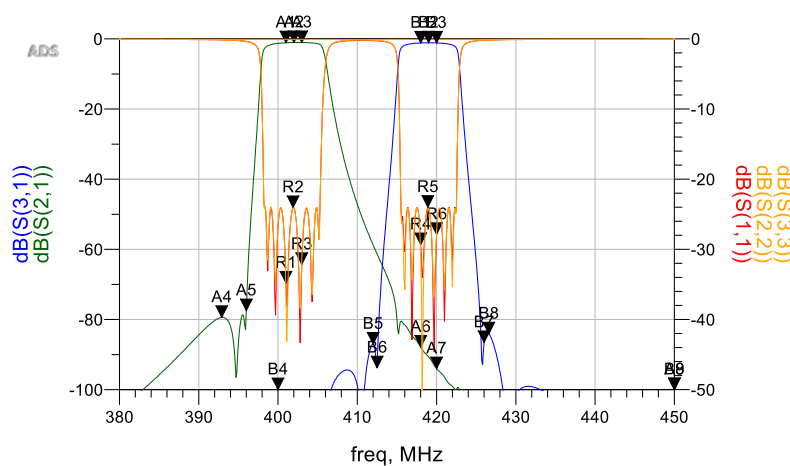
[RX] Insertion loss

IL_RX	Ripple_RX
-1.17	-0.04

B1
freq=418.00MHz
dB(S(3,1))=-1.1660

B2
freq=419.00MHz
dB(S(3,1))=-1.1313

B3
freq=420.00MHz
dB(S(3,1))=-1.1593



Rejection

A4
freq=392.90MHz
dB(S(2,1))=-79.4123

B4
freq=400.00MHz
dB(S(3,1))=-110.9358

A5
freq=396.00MHz
dB(S(2,1))=-77.4757

B5
freq=412.00MHz
dB(S(3,1))=-86.9987

A6
freq=418.00MHz
dB(S(2,1))=-87.8910

B6
freq=412.50MHz
dB(S(3,1))=-93.7654

A7
freq=420.00MHz
dB(S(2,1))=-94.0292

B7
freq=426.00MHz
dB(S(3,1))=-86.5879

A8
freq=450.00MHz
dB(S(2,1))=-133.5292

B8
freq=426.60MHz
dB(S(3,1))=-84.1029

B9
freq=450.00MHz
dB(S(3,1))=-120.5907

Return loss

R1
freq=401.00MHz
dB(S(1,1))=-34.8059

R2
freq=401.90MHz
dB(S(1,1))=-24.0396

R3
freq=403.00MHz
dB(S(1,1))=-32.1494

R4
freq=418.00MHz
dB(S(1,1))=-29.3284

R5
freq=418.90MHz
dB(S(1,1))=-23.9953

R6
freq=420.00MHz
dB(S(1,1))=-27.8676

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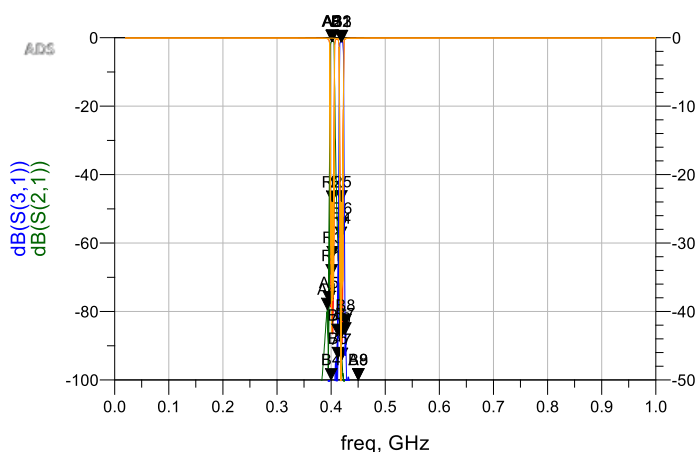
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