

PRODUCT SPECIFICATION FOR INFORMATION

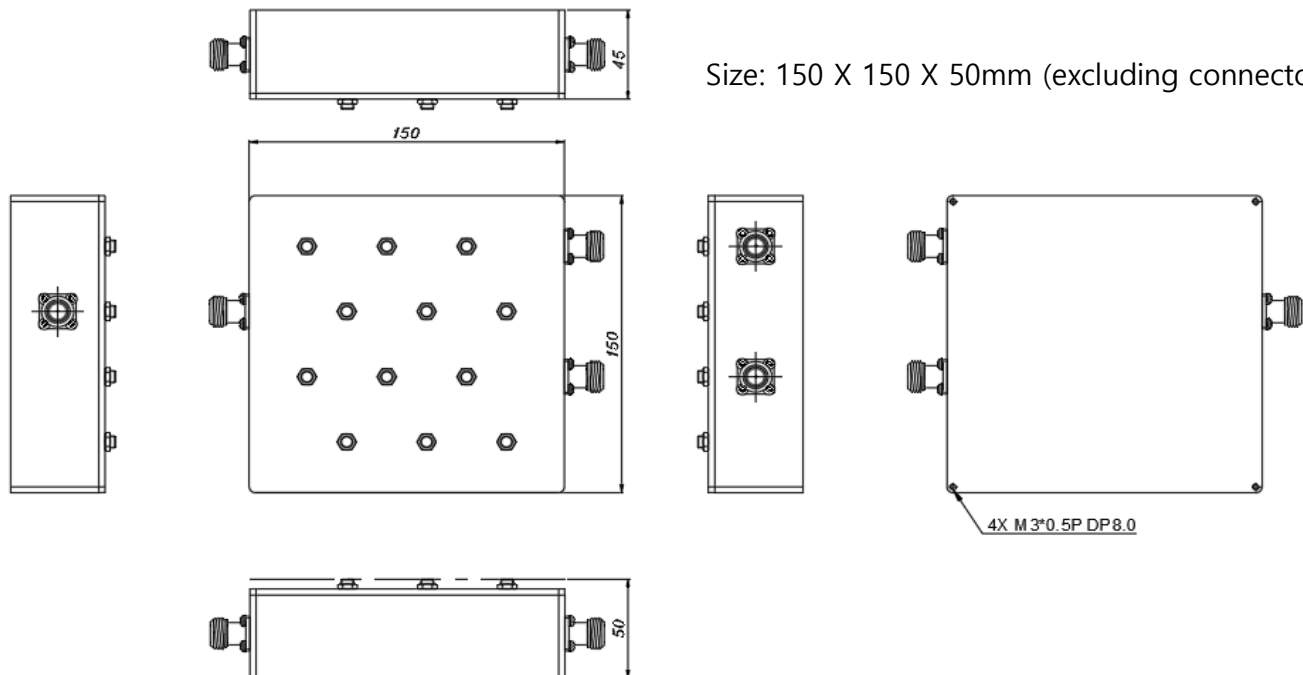
PRELIMINARY SPECIFICATION

Product Name : Cavity Diplexer

Part No : MDI-C403-C419_2M-2MN-B-R0

.	Rev. No.	Description	Date	Author	Final Approver
1	R0	First Draft	2025.03.11	Jeffrey Chung	Michael Jeon

■ Mechanical Drawing



■ Electrical Specification

Item	Specification		Remark
	TX	RX	
1. Center Frequency	403 MHz	419 MHz	OK
2. Pass Band Frequency	$f_o \pm 1[402 \sim 404]\text{MHz}$	$f_o \pm 1[418 \sim 420]\text{MHz}$	OK
3. Insertion Loss	1.8 dB Max.	1.85 dB Max.	Proposal
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. @150~204MHz	55dB min. @150~204MHz	OK
	70dB min. @220~396MHz	70dB min. @220~400MHz	Proposal
	80dB min. @418~420MHz	80dB min. @402~404MHz	OK
	85dB min. @420~450MHz	75dB min. @426~450MHz	Proposal
	85dB min. @450~1000MHz	85dB min. @450~1000MHz	OK
7. In/Out Impedance	50 Ω		OK
8. Input Power	CW 75 W Max.		OK
9. Operation Temperature Range	-10°C ~ +85°C		OK
10. Dimension [WxDxH]	150.0 x 150.0 x 50.0 [mm]		Proposal
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		Proposal

■ Simulation Data

[TX] Insertion loss

IL_TX	Ripple_TX
-1.58	-0.13

[RX] Insertion loss

IL_RX	Ripple_RX
-1.66	-0.13

Insertion loss

A1
freq=402.00MHz
dB(S(2,1))=-1.5777

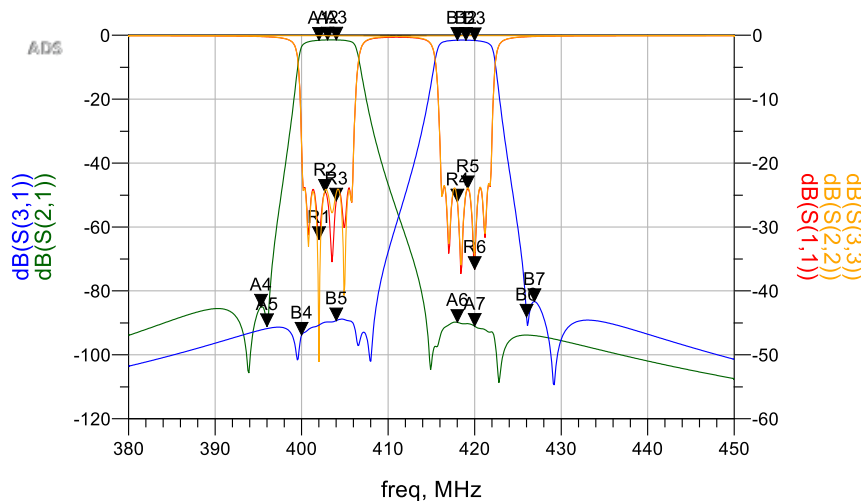
A2
freq=403.00MHz
dB(S(2,1))=-1.4689

A3
freq=404.00MHz
dB(S(2,1))=-1.4765

B1
freq=418.00MHz
dB(S(3,1))=-1.5652

B2
freq=419.00MHz
dB(S(3,1))=-1.5508

B3
freq=420.00MHz
dB(S(3,1))=-1.6572



Rejection

A4
freq=395.30MHz
dB(S(2,1))=-85.0207

B4
freq=400.00MHz
dB(S(3,1))=-93.8278

A5
freq=396.00MHz
dB(S(2,1))=-91.1511

B5
freq=404.00MHz
dB(S(3,1))=-89.3327

A6
freq=418.00MHz
dB(S(2,1))=-89.8524

B6
freq=426.00MHz
dB(S(3,1))=-88.1443

A7
freq=420.00MHz
dB(S(2,1))=-91.0714

B7
freq=426.90MHz
dB(S(3,1))=-83.3418

Return loss

R1
freq=402.00MHz
dB(S(1,1))=-31.9543

R2
freq=402.70MHz
dB(S(1,1))=-24.5595

R3
freq=404.00MHz
dB(S(1,1))=-25.9107

R4
freq=418.00MHz
dB(S(1,1))=-26.0746

R5
freq=419.20MHz
dB(S(1,1))=-24.0051

R6
freq=420.00MHz
dB(S(1,1))=-36.6420