

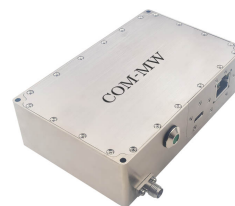
Main specifications

Parameters	Min	Typical	Max	Units
Frequency	0.1	~	18	GHz
Attenuation range	0.5	~	31.5	dB
IL			3.5	dB
VSWR			1.8	
0.5dB Accuracy	0.3	0.5	0.8	dB
1dB Accuracy	0.6	1	1.4	dB
2dB Accuracy	1.5	2	2.5	dB
4dB Accuracy	3	4	5	dB
8dB Accuracy	6.5	8	9.5	dB
16dB Accuracy	14.5	16	17.5	dB

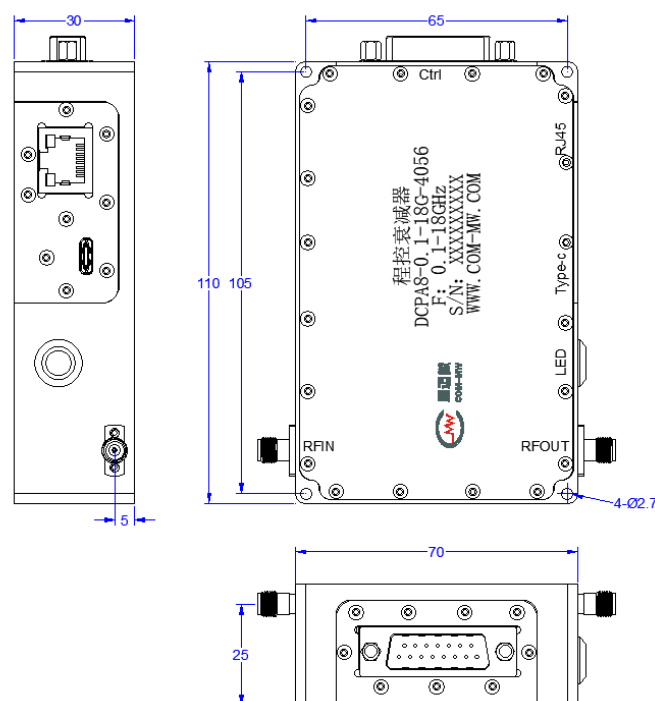
Other parameters

step	0.5dB
Power Capacity	0.4W Design assurance
Impedance	50Ω
Connector	SMA-F Detachable, Pin 0.38mm
Surface	Nickel plating
Working voltage	+5V
Working current	When using Ethernet, USB-C or RS232 to control the module, the working current is 300mA; when using TTL control, other controls need to be powered off, and the working current is 60mA.
Operation Temp.	-0~+50°C Design assurance
Storage Temp.	-30~+85°C Design assurance
Control port	USB-C/TTL/RS232/ETHERNTE CONTROLUS

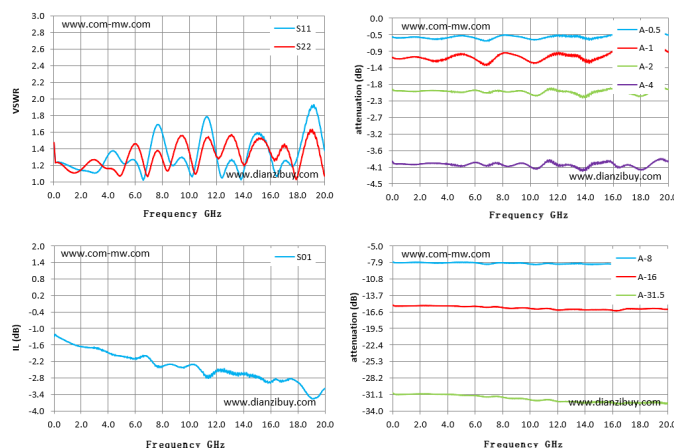
Reference picture



Configuration(mm)



Typical test curve



Note: The specifications and performance data contained in this data sheet are based on tests established by CMW.

15 pin definition

Pin	Illustrate	Voltage
1	Supply voltage	+5V
2	GND	GND
3	RS232-TX	
4	RS232-RX	
5	TTL-EN	+3.3V/0V
6	TRIGGER	+3.3V/0V
7	Not connected	
8	ATT1-0.5 (A1)	+3.3V/0V
9	ATT1-1(A2)	+3.3V/0V
10	ATT1-2(A3)	+3.3V/0V
11	ATT1-4(A4)	+3.3V/0V
12	ATT1-8(A5)	+3.3V/0V
13	ATT1-16(A6)	+3.3V/0V
14	Not connected	
15	Not connected	

232, 网口控制命令 (232波特率115200)

0 dB	AA 00 02 03 04 05 06 55	
0.5 dB	AA 01 02 03 04 05 06 55	
1 dB	AA 02 02 03 04 05 06 55	
2 dB	AA 04 02 03 04 05 06 55	
4 dB	AA 08 02 03 04 05 06 55	
8 dB	AA 10 02 03 04 05 06 55	
16 dB	AA 20 02 03 04 05 06 55	
31.5dB	AA 3F 02 03 04 05 06 55	

TTL控制真值表 (1: 3.3~5V; 0: 0V)

Attenuation	A1	A2	A3	A4	A5	A6
0dB	1	1	1	1	1	1
0.5dB	0	1	1	1	1	1
1dB	1	0	1	1	1	1
2dB	1	1	0	1	1	1
4dB	1	1	1	0	1	1
8dB	1	1	1	1	0	1
16dB	1	1	1	1	1	0
31.5dB	0	0	0	0	0	0

Note: The specifications and performance data contained in this data sheet are based on tests established by CMW.

Typical test data

Frequency GHz	S1 1 VS W R	S0 1 IL d B	A- 0. 5 d B	A- 1 d B	A- 2 d B	A- 4 d B	A- 8 d B	A- 1 6 d B
0.01	1.4 8	-1. 32	-0. 51	-1 .0 6	-1 .9 3	-3 .8 9	-7 .8 4	-1 5. 3
1.43	1.1 7	-1. 58	-0. 52	-1 .0 6	-1 .9 9	-3 .9 8	-7 .9 1	-1 5. 5
2.86	1.1 1	-1. 70	-0. 57	-1 .1 6	-1 .9 7	-3 .9 5	-8 .0 0	-1 5. 5
4.29	1.3 7	-1. 94	-0. 52	-1 .0 6	-1 .9 9	-3 .9 8	-7 .9 4	-1 5. 5
5.71	1.2 7	-2. 08	-0. 52	-1 .0 6	-1 .9 7	-3 .9 5	-7 .9 3	-1 5. 6
7.14	1.4 2	-2. 14	-0. 59	-1 .2 1	-2 .0 1	-3 .9 8	-8 .1 8	-1 5. 7
8.57	1.2 4	-2. 30	-0. 47	-0 .9 7	-2 .0 0	-4 .0 2	-8 .0 4	-1 5. 9
10.00	1.1 3	-2. 33	-0. 57	-1 .1 9	-2 .0 6	-4 .0 4	-8 .2 0	-1 6. 0
11.43	1.7 6	-2. 77	-0. 50	-1 .0 1	-1 .9 2	-3 .8 8	-8 .1 0	-1 6. 0
12.86	1.2 2	-2. 58	-0. 49	-1 .0 1	-2 .0 0	-4 .0 0	-8 .1 6	-1 6. 1
14.29	1.3 3	-2. 70	-0. 58	-1 .2 0	-2 .0 6	-4 .0 0	-8 .2 6	-1 6. 2
15.71	1.4 5	-2. 94	-0. 47	-0 .9 6	-1 .9 2	-3 .8 9	-8 .1 6	-1 6. 2
17.14	1.2 6	-2. 90	-0. 50	-1 .0 5	-2 .0 4	-3 .9 9	-8 .1 2	-1 6. 0
18.57	1.6 9	-3. 30	-0. 48	-1 .0 0	-2 .0 4	-4 .0 3	-8 .0 5	-1 6. 0

Note: The specifications and performance data contained in this data sheet are based on tests established by CMW.

Frequency GHz	S1 1 VS W R	S0 1 IL d B	A- 0. 5 d B	A- 1 d B	A- 2 d B	A- 4 d B	A- 8 d B	A- 1 6 d B
20.00	1.3 7	-3. 19	-0. 46	-0 .9 3	-1 .9 4	-3 .8 9	-8 .2 8	-1 6. 1

Instructions for use

1. When TRIGGER=0, the network port, type-c, No matter what command 232 sends, FPGA does not respond. When TRIGGER=1, FPGA will only respond, and TRIGGER will change to 0 again. FPGA's state remains in this state until TRIGGER=1, when the next state is received;
2. When using TTL direct control, it is necessary to set TTL-EN=1 to turn off the power supply of Ethernet ports, 232, and type-c. When using Ethernet port, 232, and type-c control, TTL-EN=0 and all ATT pins on the 15 core connector need to be suspended;
3. Type-C control software available