

AW-XM549 & AW-XM553

Certification Guide

Ver. A

Revision History

Document release	Date	Modification	Initials	Approved
A	2023/10/24	Initial Version	Crystal Hsu	Patrick Lin

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1. Certificate list of AW-XM549 and AW-XM553

AW-XM549 is using NXP IW612 and AW-XM553 is using NXP IW611, sharing the same CE, FCC, IC, Japan certificates. Certificate ID are listed as below.

- **FCC ID: TLZ-XM549**

The final end product must be labeled in a visible area with the following: Contains “FCC ID: TLZ-XM549”

- **IC: 6100A-XM549**

The final end product must be labeled in a visible area with the following: Contains “IC: 6100A-XM549”

- **Japan:**

- TELEC: 201-230675
- JATE: D230139201



R 201-230675
T D 23 0139 201

2. Antenna Filing Policy

AW-XM549 and AW-XM553 were certified with many antennas. The antenna list could be found in [Appendix 1](#). If you have preferred antenna to be used with AW-XM549 and AW-XM553, antenna filing is necessary.

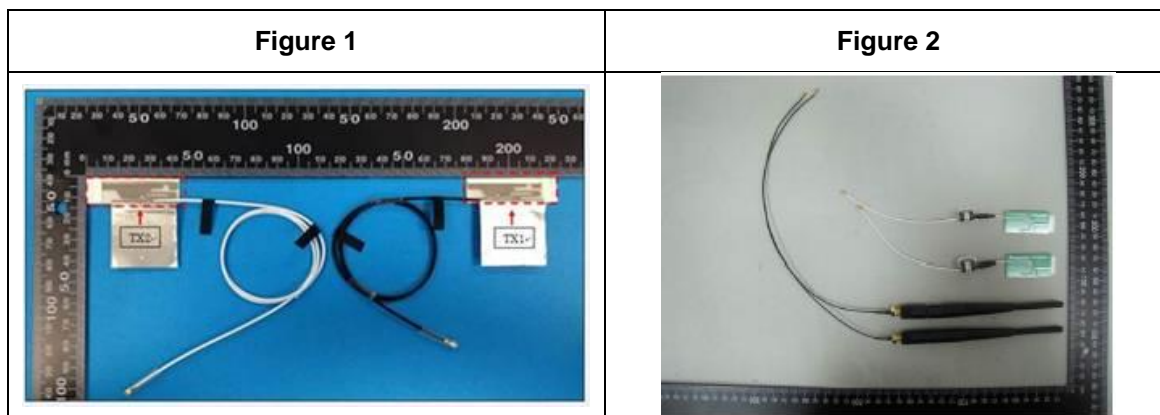
Before applying antenna filing, please notice that below policies

1. Antenna filing could be applied for the countries as below:

FCC, CE, IC, and Japan.

2. The below information must be included in the data sheet of new antenna

- Antenna Vendor and Part Number
- Antenna peak gain summary table
- Antenna pattern for each band (gains listed on plots must correctly match spec sheet summary table of gains)
- Antenna photo (including antenna length/width with L type scale) (Figure 1 or Figure 2)
- Antenna mechanical drawing showing dimensions (including length/wide)
- Antenna type
- Antenna cable length
- Connector type
- IPEX Cable drawing if the antenna type is dipole
- If it is a report from an antenna factory, basic information, contact information, and address are required
- If the ODM/OEM and manufacturer's own test report needs to provide testers, instrument calibration list, test date, test software, test photos, and describe how to measure



3. Reminder about Global Antenna Rules

- Please ensure that new antenna is PCB on board, PIFA, Dipole or Monopole type.
- Please ensure that the peak gain of new antenna is lower than AzureWave limits as [Appendix 1](#).



AzureWave

AzureWave Technologies, Inc.

- If new antenna has higher antenna gain value than [Appendix 1](#), it will trigger FCC permissive change testing or re-test in the other countries.
- If new antenna has different type from current antenna list, re-testing is necessary and charge might have to be taken by requestor

Appendix 1

Antennas listed on FCC reports

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	MAG. LAYERS	MSA-4008-25GC1-A2	PIFA Antenna	I-PEX	Note1
2	1	CEL	0032-02-07-00-001	PIFA Antenna	I-PEX	

Note1:

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth/Thread	WLAN 5GHz
1	2.98	5.16
2	1.30	4.30

Antennas listed on CE reports

Ant.	Port				Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth	Thread					
1			1		MAG. LAYERS	MSA-4008-25GC1-A2	PIFA	I-PEX	Note 1
2			1		CEL	0032-02-07-00-001	PIFA	I-PEX	
3			1		SONY	IW611-IW620-D(100)	Dipole	I-PEX	
4			1		SONY	IW611-IW620-D(110)	Dipole	I-PEX	
5			1		SONY	IW611-IW620-D(120)	Dipole	I-PEX	
6			1		SONY	IW611-IW620-D(130)	Dipole	I-PEX	
7			1		SONY	IW611-IW620-D(140)	Dipole	I-PEX	
8			1		SONY	IW611-IW620-D(150)	Dipole	I-PEX	
9			1		SONY	IW611-IW620-D(160)	Dipole	I-PEX	
10			1		SONY	IW611-IW620-D(170)	Dipole	I-PEX	
11			1		SONY	IW611-IW620-D(180)	Dipole	I-PEX	
12			1		SONY	IW611-IW620-D(190)	Dipole	I-PEX	
13			1		SONY	IW611-IW620-D(200)	Dipole	I-PEX	
14			1		SONY	IW611-IW620-D(210)	Dipole	I-PEX	
15			1		SONY	IW611-IW620-D(220)	Dipole	I-PEX	
16			1		SONY	IW611-IW620-D(230)	Dipole	I-PEX	
17			1		SONY	IW611-IW620-D(240)	Dipole	I-PEX	
18			1		SONY	IW611-IW620-D(250)	Dipole	I-PEX	
19			1		SONY	IW611-IW620-D(260)	Dipole	I-PEX	
20			1		SONY	IW611-IW620-D(270)	Dipole	I-PEX	
21			1		SONY	IW611-IW620-D(280)	Dipole	I-PEX	
22			1		SONY	IW611-IW620-D(290)	Dipole	I-PEX	
23			1		SONY	IW611-IW620-D(300)	Dipole	I-PEX	
24			1		SONY	IW611-IW620-D(310)	Dipole	I-PEX	
25			1		SONY	IW611-IW620-D(320)	Dipole	I-PEX	
26			1		SONY	IW611-IW620-D(330)	Dipole	I-PEX	
27			1		SONY	IW611-IW620-D(340)	Dipole	I-PEX	
28			1		SONY	IW611-IW620-D(350)	Dipole	I-PEX	
29			1		SONY	IW611-IW620-D(360)	Dipole	I-PEX	
30			1		SONY	IW611-IW620-D(370)	Dipole	I-PEX	
31			1		SONY	IW611-IW620-D(380)	Dipole	I-PEX	
32			1		SONY	IW611-IW620-D(390)	Dipole	I-PEX	
33			1		SONY	IW611-IW620-D(400)	Dipole	I-PEX	
34			1		SONY	IW611-IW620-D(410)	Dipole	I-PEX	
35			1		SONY	IW611-IW620-D(420)	Dipole	I-PEX	
36			1		SONY	IW611-IW620-D(430)	Dipole	I-PEX	
37			1		SONY	IW611-IW620-D(440)	Dipole	I-PEX	
38			1		SONY	IW611-IW620-D(450)	Dipole	I-PEX	
39			1		SONY	IW611-IW620-D(460)	Dipole	I-PEX	

40	1	SONY	IW611-IW620-D(470)	Dipole	I-PEX	Note 1
41	1	SONY	IW611-IW620-D(480)	Dipole	I-PEX	
42	1	SONY	IW611-IW620-D(490)	Dipole	I-PEX	
43	1	SONY	IW611-IW620-D(500)	Dipole	I-PEX	
44	1	SONY	IW611-IW620-D(510)	Dipole	I-PEX	
45	1	SONY	IW611-IW620-D(520)	Dipole	I-PEX	
46	1	SONY	IW611-IW620-D(530)	Dipole	I-PEX	
47	1	SONY	IW611-IW620-D(540)	Dipole	I-PEX	
48	1	SONY	IW611-IW620-D(550)	Dipole	I-PEX	
49	1	SONY	IW611-IW620-D(560)	Dipole	I-PEX	
50	1	SONY	IW611-IW620-D(570)	Dipole	I-PEX	
51	1	SONY	IW611-IW620-D(580)	Dipole	I-PEX	
52	1	SONY	IW611-IW620-D(590)	Dipole	I-PEX	
53	1	SONY	IW611-IW620-D(600)	Dipole	I-PEX	
54	1	SONY	IW611-IW620-D(610)	Dipole	I-PEX	
55	1	SONY	IW611-IW620-D(620)	Dipole	I-PEX	
56	1	SONY	IW611-IW620-D(630)	Dipole	I-PEX	
57	1	SONY	IW611-IW620-D(640)	Dipole	I-PEX	
58	1	SONY	IW611-IW620-D(650)	Dipole	I-PEX	
59	1	SONY	IW611-IW620-D(660)	Dipole	I-PEX	
60	1	SONY	IW611-IW620-D(670)	Dipole	I-PEX	
61	1	SONY	IW611-IW620-D(680)	Dipole	I-PEX	
62	1	SONY	IW611-IW620-D(690)	Dipole	I-PEX	
63	1	SONY	IW611-IW620-D(700)	Dipole	I-PEX	
64	1	SONY	IW611-IW620-D(710)	Dipole	I-PEX	
65	1	SONY	IW611-IW620-D(720)	Dipole	I-PEX	
66	1	SONY	IW611-IW620-D(730)	Dipole	I-PEX	
67	1	SONY	IW611-IW620-D(740)	Dipole	I-PEX	
68	1	SONY	IW611-IW620-D(750)	Dipole	I-PEX	
69	1	SONY	IW611-IW620-D(760)	Dipole	I-PEX	
70	1	SONY	IW611-IW620-D(770)	Dipole	I-PEX	
71	1	SONY	IW611-IW620-D(780)	Dipole	I-PEX	
72	1	SONY	IW611-IW620-D(790)	Dipole	I-PEX	
73	1	SONY	IW611-IW620-D(800)	Dipole	I-PEX	
74	1	SONY	IW611-IW620-G(100)	Dipole	I-PEX	
75	1	SONY	IW611-IW620-G(110)	Dipole	I-PEX	
76	1	SONY	IW611-IW620-G(120)	Dipole	I-PEX	
77	1	SONY	IW611-IW620-G(130)	Dipole	I-PEX	
78	1	SONY	IW611-IW620-G(140)	Dipole	I-PEX	
79	1	SONY	IW611-IW620-G(150)	Dipole	I-PEX	
80	1	SONY	IW611-IW620-G(160)	Dipole	I-PEX	
81	1	SONY	IW611-IW620-G(170)	Dipole	I-PEX	

82	1	SONY	IW611-IW620-G(180)	Dipole	I-PEX
83	1	SONY	IW611-IW620-G(190)	Dipole	I-PEX
84	1	SONY	IW611-IW620-G(200)	Dipole	I-PEX
85	1	SONY	IW611-IW620-G(210)	Dipole	I-PEX
86	1	SONY	IW611-IW620-G(220)	Dipole	I-PEX
87	1	SONY	IW611-IW620-G(230)	Dipole	I-PEX
88	1	SONY	IW611-IW620-G(240)	Dipole	I-PEX
89	1	SONY	IW611-IW620-G(250)	Dipole	I-PEX
90	1	SONY	IW611-IW620-G(260)	Dipole	I-PEX
91	1	SONY	IW611-IW620-G(270)	Dipole	I-PEX
92	1	SONY	IW611-IW620-G(280)	Dipole	I-PEX
93	1	SONY	IW611-IW620-G(290)	Dipole	I-PEX
94	1	SONY	IW611-IW620-G(300)	Dipole	I-PEX
95	1	SONY	IW611-IW620-G(310)	Dipole	I-PEX
96	1	SONY	IW611-IW620-G(320)	Dipole	I-PEX
97	1	SONY	IW611-IW620-G(330)	Dipole	I-PEX
98	1	SONY	IW611-IW620-G(340)	Dipole	I-PEX
99	1	SONY	IW611-IW620-G(350)	Dipole	I-PEX
100	1	SONY	IW611-IW620-G(360)	Dipole	I-PEX
101	1	SONY	IW611-IW620-G(370)	Dipole	I-PEX
102	1	SONY	IW611-IW620-G(380)	Dipole	I-PEX
103	1	SONY	IW611-IW620-G(390)	Dipole	I-PEX
104	1	SONY	IW611-IW620-G(400)	Dipole	I-PEX
105	1	SONY	IW611-IW620-G(410)	Dipole	I-PEX
106	1	SONY	IW611-IW620-G(420)	Dipole	I-PEX
107	1	SONY	IW611-IW620-G(430)	Dipole	I-PEX
108	1	SONY	IW611-IW620-G(440)	Dipole	I-PEX
109	1	SONY	IW611-IW620-G(450)	Dipole	I-PEX
110	1	SONY	IW611-IW620-G(460)	Dipole	I-PEX
111	1	SONY	IW611-IW620-G(470)	Dipole	I-PEX
112	1	SONY	IW611-IW620-G(480)	Dipole	I-PEX
113	1	SONY	IW611-IW620-G(490)	Dipole	I-PEX
114	1	SONY	IW611-IW620-G(500)	Dipole	I-PEX
115	1	SONY	IW611-IW620-G(510)	Dipole	I-PEX
116	1	SONY	IW611-IW620-G(520)	Dipole	I-PEX
117	1	SONY	IW611-IW620-G(530)	Dipole	I-PEX
118	1	SONY	IW611-IW620-G(540)	Dipole	I-PEX
119	1	SONY	IW611-IW620-G(550)	Dipole	I-PEX
120	1	SONY	IW611-IW620-G(560)	Dipole	I-PEX
121	1	SONY	IW611-IW620-G(570)	Dipole	I-PEX
122	1	SONY	IW611-IW620-G(580)	Dipole	I-PEX
123	1	SONY	IW611-IW620-G(590)	Dipole	I-PEX

Note 1

124	1	SONY	IW611-IW620-G(600)	Dipole	I-PEX	Note 1
125	1	SONY	IW611-IW620-G(610)	Dipole	I-PEX	
126	1	SONY	IW611-IW620-G(620)	Dipole	I-PEX	
127	1	SONY	IW611-IW620-G(630)	Dipole	I-PEX	
128	1	SONY	IW611-IW620-G(640)	Dipole	I-PEX	
129	1	SONY	IW611-IW620-G(650)	Dipole	I-PEX	
130	1	SONY	IW611-IW620-G(660)	Dipole	I-PEX	
131	1	SONY	IW611-IW620-G(670)	Dipole	I-PEX	
132	1	SONY	IW611-IW620-G(680)	Dipole	I-PEX	
133	1	SONY	IW611-IW620-G(690)	Dipole	I-PEX	
134	1	SONY	IW611-IW620-G(700)	Dipole	I-PEX	
135	1	SONY	IW611-IW620-G(710)	Dipole	I-PEX	
136	1	SONY	IW611-IW620-G(720)	Dipole	I-PEX	
137	1	SONY	IW611-IW620-G(730)	Dipole	I-PEX	
138	1	SONY	IW611-IW620-G(740)	Dipole	I-PEX	
139	1	SONY	IW611-IW620-G(750)	Dipole	I-PEX	
140	1	SONY	IW611-IW620-G(760)	Dipole	I-PEX	
141	1	SONY	IW611-IW620-G(770)	Dipole	I-PEX	
142	1	SONY	IW611-IW620-G(780)	Dipole	I-PEX	
143	1	SONY	IW611-IW620-G(790)	Dipole	I-PEX	
144	1	SONY	IW611-IW620-G(800)	Dipole	I-PEX	

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth/Thread	WLAN 5GHz
1	2.98	5.16
2	1.30	4.30

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth	WLAN 5GHz
3	0.38	1.68
4	0.35	1.63
5	0.32	1.59
6	0.28	1.54
7	0.25	1.49
8	0.22	1.45
9	0.19	1.4
10	0.16	1.36
11	0.13	1.31
12	0.09	1.26
13	0.06	1.22
14	0.03	1.17
15	0.00	1.12
16	-0.03	1.08
17	-0.06	1.03
18	-0.10	0.99
19	-0.13	0.94
20	-0.16	0.89
21	-0.19	0.85
22	-0.22	0.8
23	-0.25	0.75
24	-0.29	0.71
25	-0.32	0.66
26	-0.35	0.62
27	-0.38	0.57
28	-0.41	0.52
29	-0.44	0.48
30	-0.48	0.43
31	-0.51	0.38
32	-0.54	0.34
33	-0.57	0.29
34	-0.60	0.24
35	-0.63	0.2
36	-0.67	0.15
37	-0.70	0.11
38	-0.73	0.06
39	-0.76	0.01
40	-0.79	-0.03
41	-0.82	-0.08
42	-0.86	-0.13

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth	WLAN 5GHz
43	-0.89	-0.17
44	-0.92	-0.22
45	-0.95	-0.26
46	-0.98	-0.31
47	-1.01	-0.36
48	-1.05	-0.4
49	-1.08	-0.45
50	-1.11	-0.5
51	-1.14	-0.54
52	-1.17	-0.59
53	-1.21	-0.64
54	-1.24	-0.68
55	-1.27	-0.73
56	-1.30	-0.77
57	-1.33	-0.82
58	-1.36	-0.87
59	-1.40	-0.91
60	-1.43	-0.96
61	-1.46	-1.01
62	-1.49	-1.05
63	-1.52	-1.1
64	-1.55	-1.14
65	-1.59	-1.19
66	-1.62	-1.24
67	-1.65	-1.28
68	-1.68	-1.33
69	-1.71	-1.38
70	-1.74	-1.42
71	-1.78	-1.47
72	-1.81	-1.51
73	-1.84	-1.56
74	0.29	1.36
75	0.26	1.31
76	0.23	1.27
77	0.19	1.22
78	0.16	1.17
79	0.13	1.13
80	0.10	1.08
81	0.07	1.04
82	0.04	0.99
83	0.00	0.94

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth	WLAN 5GHz
84	-0.03	0.9
85	-0.06	0.85
86	-0.09	0.8
87	-0.12	0.76
88	-0.15	0.71
89	-0.19	0.67
90	-0.22	0.62
91	-0.25	0.57
92	-0.28	0.53
93	-0.31	0.48
94	-0.34	0.43
95	-0.38	0.39
96	-0.41	0.34
97	-0.44	0.3
98	-0.47	0.25
99	-0.50	0.2
100	-0.53	0.16
101	-0.57	0.11
102	-0.60	0.06
103	-0.63	0.02
104	-0.66	-0.03
105	-0.69	-0.08
106	-0.72	-0.12
107	-0.76	-0.17
108	-0.79	-0.21
109	-0.82	-0.26
110	-0.85	-0.31
111	-0.88	-0.35
112	-0.91	-0.4
113	-0.95	-0.45
114	-0.98	-0.49
115	-1.01	-0.54
116	-1.04	-0.58
117	-1.07	-0.63
118	-1.10	-0.68
119	-1.14	-0.72
120	-1.17	-0.77
121	-1.20	-0.82
122	-1.23	-0.86
123	-1.26	-0.91
124	-1.30	-0.96

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth	WLAN 5GHz
125	-1.33	-1
126	-1.36	-1.05
127	-1.39	-1.09
128	-1.42	-1.14
129	-1.45	-1.19
130	-1.49	-1.23
131	-1.52	-1.28
132	-1.55	-1.33
133	-1.58	-1.37
134	-1.61	-1.42
135	-1.64	-1.46
136	-1.68	-1.51
137	-1.71	-1.56
138	-1.74	-1.6
139	-1.77	-1.65
140	-1.80	-1.7
141	-1.83	-1.74
142	-1.87	-1.79
143	-1.90	-1.83
144	-1.93	-1.88