

# Amphenol

## APPROVAL SHEET WIFI Antenna

SAA function:	Name:	Sign:	Date
RD manager	Hector Li		
RF manager	Linjun Shen		
ME manager	Frank Wang		
Project manager	Eric Zhang		

Project: Z16	Author:	File Name:	
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R	
Revision: A			
CONFIDENTIAL			
Shanghai Amphenol Airwave Communication Electronics Co.,Ltd			

Date:	Revision:	Updates and changes:	Issued by:
2015-12-15	Α	Original release of the approval sheet	Shijie Lin

1	ANTENNA DESCRIPTION	1-3
1.1	Part number	1-3
1.2	Antenna pictures	1-3
1.3	Device pictures	1-3
2	ELECTRICAL PERFORMANCE	2-4
2.1	Proposal specification for mass production	2-4
2	Measurement Set-up	2-4 2-4
3	REFERENCE MEASUREMENT DATA	3-5
3.1	Return loss	3-5
3.2	Efficiency	3-6
4	MECHANICAL DESCRIPTION	4-7
4.1	Drawings	4-7
5	FAI	5-8
6	CPK	6-9

Project: Z16	110011011	File Name:	
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R	
Revision: A			
CONFIDENTIAL			
Shanghai Amphenol Airwaye Communication Electronics Co.,Ltd			

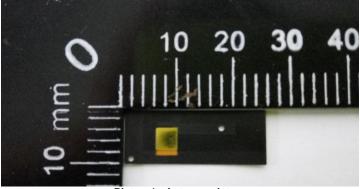
## 1 Antenna description

This antenna is WIFI internal antenna. The structure of the antenna is FPC.

#### 1.1 Part number

SAA: XY7697-12-000-R

## 1.2 Antenna pictures



Picture1. Antenna picture

## 1.3 Device pictures



Picture2. Device picture

Project: Z16	Author:	File Name:	
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R	
Revision: A			
CONFIDENTIAL			
Shanghai Amphenol Airwave Communication Electronics Co.,Ltd			

#### 2 Electrical Performance

#### 2.1 Proposal specification for mass production

Return loss

Frequency(MHz)	2400-2500	5150-5850
Return loss(dB)	≤-6	≤-5

#### 2.2 Measurement Set-up

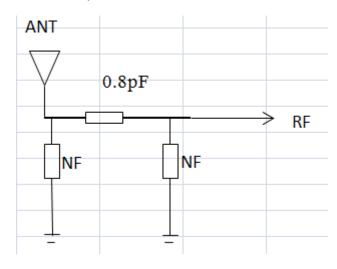
#### 2.2.1 Return loss and VSWR

Return loss measurements (S<sub>11</sub>) were performed using an Agilent ENA series Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

#### **2.2.2** Efficiency

The efficiency of the antenna was measured in Amphenol's 3D anechoic chamber in Shanghai, China. The chamber is a Satimo system capable of doing tests from 380MHz to 6GHz. Coaxial chokes on the feed cable were used to mitigate surface currents during passive tests. The measurement results are calibrated using dipole standards.

#### 2.2.3 Matching Circuit Description



Project: Z16	Author:	File Name:	
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R	
Revision: A			
CONFIDENTIAL			
Shanghai Amphenol Airwave Communication Electronics Co.,Ltd			

#### 3 Reference measurement data

#### 3.1 Return loss



Picture3. WLAN main VSWR

Project: Z16		Author:	File Name:
Date: 2015-12	2-18	Shijie Lin	XY7697-12-000-R
Revision:	A		
CONFIDENTIAL			
	Shanghai Amphenol Airwave Communication Electronics Co.,Ltd		

## 3.2 Efficiency

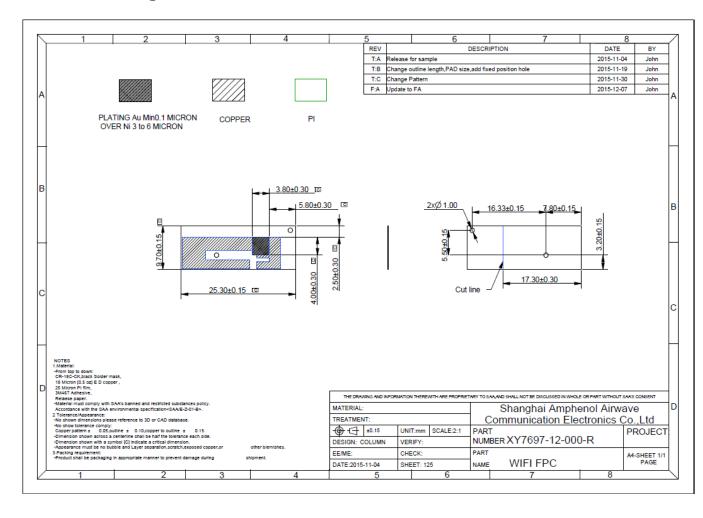
Frequency(MHz)	Efficiency (%)	Efficiency(dB)
2400	44%	-3.54
2420	45%	-3.44
2440	46%	-3.35
2450	48%	-3.22
2460	47%	-3.26
2480	46%	-3.42
2500	43%	-3.66
Average	46%	-3.41
5150	40%	-4.03
5200	41%	-3.88
5250	43%	-3.66
5300	44%	-3.55
5350	48%	-3.23
5400	50%	-3.01
5450	53%	-2.77
5500	55%	-2.58
5550	56%	-2.54
5600	56%	-2.48
5650	56%	-2.50
5700	54%	-2.64
5750	52%	-2.88
5800	48%	-3.22
5850	45%	-3.44
Average	49%	-3.09

Table1 WLAN main Efficiency

Project: Z16	Author:	File Name:	
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R	
Revision: A			
CONFIDENTIAL			
Shanghai Amphenol Airwave Communication Electronics Co.,Ltd			

## 4 Mechanical description

## 4.1 Drawings



Project: Z16	Author:	File Name:	
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R	
Revision: A			
CONFIDENTIAL			
Shanghai Amphenol Airwave Communication Electronics Co.,Ltd			

	9	9													j	7
<b>T</b>	<u> </u>	Inspection Report : First Article/ Vendor Sample Evaluation			nspec	tion Rep	ort : First	Article/	Vendor (	Sample	Evalua	ation		8	S	Z
Part Name:		Z16 FPC	Par	Part No.:	7697YX	XY7697-12-000-R	Mold No.:	N/A	A	Material Type:	ype:	N/A			Rev No.:	FA
✓ Custome	₹ XIAOYI	▼ Customer XIAOYI ▼ Supplier		SAA		Project Name:	ame:	Z16		Color.	N/A	Sub. No.	-	Page	Je: 1	of 1
Dimensional Inspetion	onal Ins	petion														
		Specification						To be fille	To be filled by Amphenol	lol				Disposition	ition	
No. Zone	Sign	Nominal	+	Sho.	Shot No. Shot.1	1 Shot.2	Shot.3	Shot.4	Shot.5	1	1	1	EQPT	Acc Con. Acc	Acq Rej	Remark
1 B2		9.70	0.15	0.15	9.62	9.64	9.65	9.63	99.6				OMM	1		
2 3		25.30	0.15	0.15	25.26	25.23	25.25	25.27	25.26				WWO	1		
3 B4		3.80	0.30	0:30	4.05	3.95	3.92	3.96	3.98				WW0	1		
4 B4		5.80	0.30	0:30	5.66	5.65	5.72	5.65	5.68				WW0	1		
5 05		2.50		0.30	2.45	2.42	2.45	2.46	2.40				OMM	1		
6 04		4.00	08'0	08'0	4.05	4.02	4.06	4.10	4.05				WWO	1		
7 B6		5.50	0.15	0.15	5.55	5.58	5.52	5.56	5.53				WWO	1		
8*2 B6		1.00	0.05	0.05 0.05	0.98	0.98	0.99	26.0	0.98				WWO	1		
B6		1.00	0.05	0.05 0.05	0.97	0.98	0.98	0.98	0.99				WW0	1		
9 B6		16.33	0.15 0.15	0.15	16.35	16.38	16.32	16.30	16.39				OMM	1		
10 B7		7.80	0.10	0.10	7.85	7.82	7.86	7.88	7.83				OMM	1		
11 B8		3.20	0.15	0.15	3.22	3.25	3.22	3.21	3.23				WWO	1		
				+												
					+	1								+	1	
Equipment ID:	₽													Disposition:	ij	
DC-"Digital Caliper"	Caliper		PLG-	PLG - "Plug Gauge"	je	RG-"Radii Gauge"	Gauge"							Acc - "Accept"	ept	
DI-"Dial Indicator"	cator"		LG-"	LG - "Loop Gauge"	"e	PP-"Profile	PP-"Profile Projector"							Rej - "Reject"	ect	
PLG - "Plug Gauge"	Gauge"		PG-"Pi	PG-"Pin Gauge"		OMM-"Obj	OMM-"Objective Measuring Machine"	ng Machine"						Con. Acc.	- "Condition	Con. Acc - "Conditional Accept
															(faulty,	(faulty, but accept)"
							Inspector	ctor	0	Date	QA Approval			Date		
			ME En	ME Engineer:	John.Jiang	ang	Xiongju	nįt	12/9/2015		Lois chen		12/9/2015	2		

Project: Z16			File Name:
Date: 2015-12-18		Shijie Lin	XY7697-12-000-R
Revision:	A		
		CONFI	DENTIAL
	Shanghai	Amphenol Airwave C	Communication Electronics Co.,Ltd

## 6 CPK

Amp	nei	101				C	PK Da	ta She	et		Shanghai Amphe	nc) Firmane		
art Name: Z1	I6 FPC	Part No.:	XY	7697-12-0	00-R	Mold No.:		N/A		Material	Tune:	N/A	Rev No.:	FA
Customer	☑ Suppl			Project Na		-	16	Color:	N	/A	Sub. No.	1		1
		3	in.	riojectiv	anno.		10				Sub. No.		- 01	
Dian No.	_	_	_	,	_	_								
Dim. No.	1 0.70	2	3	4	5	6								
Nominal Dim.	9.70	25.30	3.80	5.80	2.50	4.00								
Tol. Max. (+)	0.15	0.15	0.30	0.30	0.30	0.30								Rema
Tol. Min. (-)	0.15	0.15	0.30	0.30	0.30	0.30								
USL	9.85	25.45	4.10	6.10	2.80	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LSL	9.55	25.15	3.50	5.50	2.20	3.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sampl.1	9.62	25.26	4.05	5.66	2.45	4.05								
Sampl.2	9.64	25.23	3.95	5.65	2.42	4.02								
Sampl.3	9.65	25.25	3.92	5.72	2.45	4.06								
Sampl.4	9.63	25.27	3.96	5.65	2.46	4.11								
Sampl.5	9.66 9.65	25.26 25.32	3.98 3.92	5.56 5.68	2.41	4.05								
Sampl.6 Sampl.7	9.68	25.32	3.85	5.75	2.46	4.05								
Sampl.8	9.64	25.26	3.88	5.72	2.42	4.12								
Sampl.9	9.65	25.25	3.90	5.75	2.43	4.06								
Sampl.10	9.62	25.26	3.92	5.68	2.45	4.08								
Sampl.11	9.65	25.24	3.91	5.66	2.46	4.09								
Sampl. 12	9.72	25.28	3.86	5.75	2.48	4.12								
Sampl.13	9.68 9.68	25.25 25.30	3.88 3.91	5.72 5.71	2.51 2.48	4.11								
Sampl. 14 Sampl. 15	9.66	25.31	3.86	5.73	2.42	4.06								
Sampl. 16	9.67	25.32	3.92	5.69	2.46	4.05								
Sampl.17	9.65	25.28	3.86	5.68	2.49	4.08								
Sampl. 18	9.66	25.29	3.85	5.72	2.45	4.06								
Sampl. 19	9.70	25.25	3.92	5.75	2.42	4.07								
Sampl.20	9.72	25.27	3.85	5.73	2.43	4.08								
Sampl.21	9.68 9.65	25.26 25.31	3.86 3.95	5.68 5.71	2.46 2.46	4.05 4.10								
Sampl.22 Sampl.23	9.63	25.28	3.92	5.73	2.48	4.03								
Sampl.24	9.65	25.32	3.85	5.68	2.51	4.06								
Sampl.25	9.64	25.28	3.88	5.72	2.45	4.05								
Sampl.26	9.65	25.26	3.86	5.75	2.46	4.10								
Sampl.27	9.67	25.25	3.92	5.71	2.48	4.06								
Sampl.28	9.68 9.65	25.26 25.31	3.87 3.92	5.68 5.69	2.49	4.08								
Sampl.29 Sampl.30	9.66	25.31	3.85	5.75	2.45	4.03								
Sampl.31	9.64	25.29	3.88	5.72	2.47	4.09								
Sampl.32	9.63	25.28	3.86	5.69	2.46	4.05								
Sampl.33	9.68	25.26	3.85	5.68	2.48	4.06								
Sampl.34	9.65	25.28	3.89	5.67	2.45	4.05								
Sampl.35	9.70	25.29	3.91	5.71	2.46	4.07								
Maximum	9.720	25.320	4.050	5.750	2.510	4.120	0.000	0.000	0.000	0.000	0.00	0.00	0.00	
Maximum	9.620	25.230	3.850	5.560	2.410	4.020	0.000	0.000	0.000	0.000	0.00	0.00	0.00	
Minimum														
Std Dev	0.025	0.026	0.045	0.039	0.026	0.026	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Mean	9.660	25.277	3.898	5.701	2.459	4.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Ср	1.988	1.945	2.236	2.550	3.855	3.806	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Cpkl	1.454	1.652	2.964	1.708	3.330	4.687	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Cpku	2.523	2.238	1.508	3.393	4.380	2.925	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Cpk	1.454	1.652	1.508	1.708	3.330	2.925	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

Project: Z16		File Name:
Date: 2015-12-18	Shijie Lin	XY7697-12-000-R
Revision: A		
	CONFI	DENTIAL
Shanghai	Amphenol Airwave C	Communication Electronics Co.,Ltd