Supplier Name: Shenzhen Kangyuanxin Communication Technology Co.,Ltd

SPECIFICATION APPROVAL SHEET

Product Name: Antenna

Model: FPC Antenna

Specifications / materials: AMP 6500-LTE-ANT-V01-SC20-A

Brand: KYX

Package: Sealed plastic bag packaging, 100PCS per package, cartons

Product category: FPC

Material Code: 200207015310109

Product Description: AMP 6500_LTE_FPC ANT -3 mode 13 frequency -V01-161mm-terminal -SC20_A-Main-KYX

Supplier signature	Customer signature
Meader 同意 David 业务专用章	

Supplier contact address: 6Th floor, 21 Guangqian Industrial Zone, Longzhu 3rd Road, Xili Town, Nanshan District, Shenzhen

Supplier business liaison / TEL / FAX: Liyucheng /075586238626/075586238957

Supplier Technical Support Contact /TEL: Qin Xinjian /075586238967

File Version Information

Category	Date	Version Number	Describe	Recognition	Remarks
Electronic	2018/12/6	V1.0	First Edition	Zhao xiaobo	

NEW POS TECHNOLOGY CO.LIMITED		Product Inspection Specification				Number：2018120604	Edition：B
						Date：	2018/12/6
		Process name	Incoming inspection	Standard	MIL-STD-105E appearance：II； function：S-2	Acceptance：CR：0、MAJ：0.25、MIN：1.0	
Material number	200207015310109	Describe	AMP 6500_LTE_FPC ANT -3 mode 13 frequency -V01-161mm-terminal -SC20_A-Main-KYX			Supplier	KYX

Inspection items and standards

Inspection items		Verify Contents	Test criteria	Tool	Frequency	Department	Judging CR	Judging MA	Judging MI
Size	1	74.20	±0.2mm	CCD callipers visual	Submitted/approved	IQC		V	
	2	66.90	±0.2mm						
	3	161.00	±1mm						
structure appearance	Structure		According to the structure; Back glue, off-type paper, line part, hole position and drawing are the same.	visual	Submitted/approved	IQC		V	
	Appearance		No damage, no dirt on the surface, no burrs on the edges						
	Follow the bottom line.		IPEX II						
	Silk Seal		Clear and clear(no fall to see bottom bad)						
Function / Performance	Stand Bobby		≤3.0	View Recognition	Submitted/approved	IQC	V		
	Efficiency		/						
	Open and short circuit test		No open circuit between the two plates	Multimeter					
Packaging / marking	Blending, mixing, short-fitting		Not allow	Visual	Submitted/approved	IQC			V
	Moisture-Proof grade		/						
	Indicate		According to NEW POS label requirements						
material quality	According to the material requirements of the "Product Recognition"								
Packaging specifications	According to the packing specifications of the Product Recognition Book								
RoHS&HF	Decision Standard Reference & Lt; Specification for Management of Hazardous Substances & amp; Gt; execution								
Store	-40℃～+85℃								
Remarks									

Graphic：

Matters needing attention

1: Unrevised matters are subject to specification requirements or product drawings(including preparation documents);
2: The transparent parts are executed according to the transparent parts test standard, and the flame retardant is based on ANSI/UL -94 V-0;
3: This specification is based on NEW POS sampling level: normal appearance test using MIL-STD-105E II, function and size using MIL-STD-105E S-2
4: The sample of the reference must be a qualified model, pay attention to the effective preservation period of the material;
5: The material meets the requirements for the control of hazardous substances.

Approve	Countersign	Formulate
/	Fang zhaoyu	Zhao xiaobo

Accessories:

number	Specification Name	Version	Date	Publish unit	Remarks
1	Antenna test report	/	2018/8/3	KYX	
2	Antenna Size Report	/	2018/8/3	KYX	
3	Drawing	RB	2018/10/10	KYX	
4	Packaging specifications	RA	2018/10/10	KYX	
5	Installation Operations Guide	/	2018/10/10	KYX	
6	Salt fog test, constant temperature humidity, cold and hot impact test report	/	2018/12/5	KYX	
7	RoHS certificate	/	/	SGS/CTI	

4G antenna test report

Company Numbe:HZR040-B/C Customer Number: AMP 6500-LTE-SC20-A Test date: 2018.8.3		
Reasons for testing: ■New projects ☐Specification change ☐Process change ☐First confirmation		
Test data	Test tool: SATIMO-SL16-OTA.8960/E5515C.CMW500	Test method: 1. Assembly the antenna to be tested on the prototype 2. Start the prototype on the test fixture in the dark room and establish a connection with the measuring instrument. 3. Test TRP and TIS with test software.

Unit: dBm		Channel	TRP	TIS
4G	FDD_B2	18650/650	18.95	-92.81
		18900/900	18.86	-92.66
		19150/1150	18.75	-92.71
	FDD_B4	20000/2000	19.21	-92.69
		20175/2175	19.33	-92.58
		20350/2350	19.67	-93.21
	FDD_B5	20450/2450	14.11	-84.31
		20525/2525	14.31	-84.44
		20600/2600	14.59	-83.69
	FDD_B7	20800/2800	18.25	-91.88
		21100/3100	18.11	-91.87
		21400/3400	17.88	-92.11
	FDD_B25	26090/8090	18.55	-92.89
		26365/8365	18.66	-92.18
		26640/8640	18.29	-91.59
	FDD_B26	26740/8740	13.41	-84.54
		26865/8865	14.33	-84.87
		26990/8990	14.29	-84.67
3G	B2(W1900)	9262/9662	19.28	-105.73
		9400/9800	19.32	-106.81
		9538/9938	19.27	-106.85
2G	PCS1900	512	25.69	-104.27
		661	25.66	-105.57
		810	25.42	-105.06

Electrical test findings	Meeting customer needs

R&D Engineer: Qin Xinjian

4G antenna test report

Company Numbe:HZR040-B/C Customer Number: AMP 6500-LTE-SC20-A Test date: 2018.8.3		
Reasons for testing: ■New projects ☐Specification change ☐Process change ☐First confirmation		
Test data	Test tool: SATIMO-SL16-OTA.8960/E5515C.CMW500	Test method: 1. Do a good job of testing and treatment, and assemble the antenna to be tested on the prototype. 2. The prototype is placed on the test fixture in the dark room and connected to the network. 3. Test antenna Gain with test software.

Main antenna

Unit: dBi		Gain
4G(FDD)	B2	-2.4
	B4	-2.0
	B5	-1.9
	B7	-2.1
	B25	-2
	B26	-2.8

Unit: dBi		Gain
3G	B2(W1900)	-2.4

Unit: dBi		Gain
2G	PCS1900	-2.0

Electrical test findings	Meeting customer needs

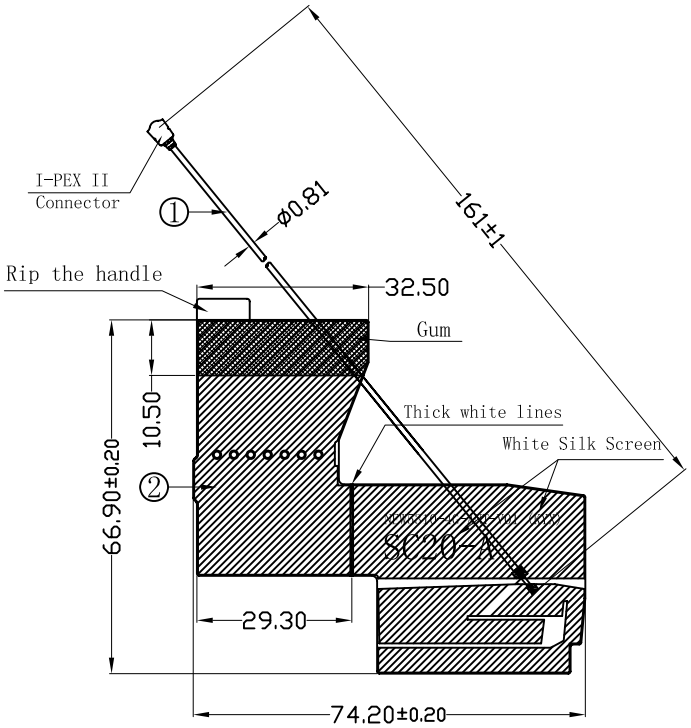
R&D Engineer: Qin Xinjian

Antenna Size Report

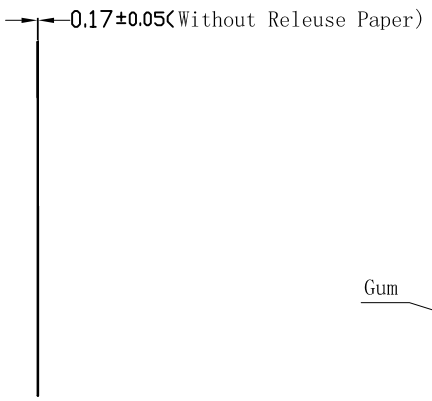
File Number: GC-ESET-001

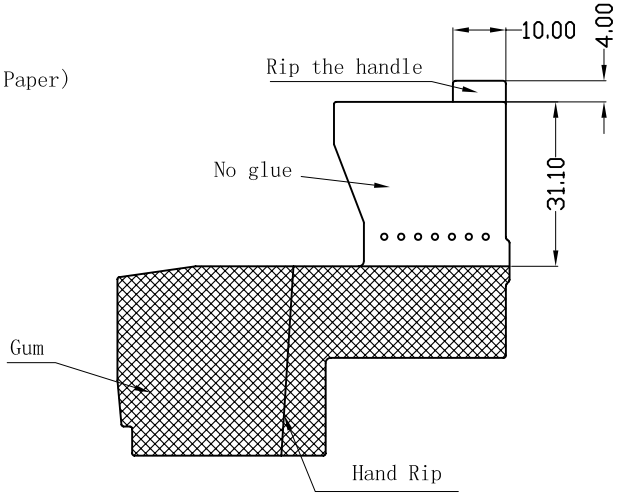
Company Number: HZR040-B Customer Number: AMP 6500-LTE-SC20-A-Main Test date: 2018-8-3					
Reasons for testing: ■New projects ☐Specification change ☐Process change ☐First confirmation					
4G Main antenna	specification	Test items		Sample 1	Sample 2	Sample 3
	0.17±0.02	Circuit board	thickness	0.175	0.172	0.174
	FPC		material	Electrolytic copper	Electrolytic copper	Electrolytic copper
	Appearance standard		appearance	No leakage of copper, shearing, oil, etc..	No leakage of copper, shearing, oil, etc..	No leakage of copper, shearing, oil, etc..
	Overall assembly					
	74.20±0.2	other	FPC length	74.18	74.24	74.22
	66.90±0.2		FPC width	66.91	66.88	66.93
	161±1		Line length	161.5	161.3	161.6
Test conclusion	Structural assembly meets customer requirements					Structural confirmer: Yao changqing
Final decision	instructions					
	conclusion	■accept ☐reject ☐Conditional acceptance Confirmation: Yao changqing				

Version	Modifications	Modifier	Date
RA	First issue	Yao	18.06.21
RB	Face off paper, increase hand tear ear.	Yao	18.10.10



Front





Back

.....Bonding pad

.....Circuit

.....Gum

Packing:

1.100 pcs per zippered bag and put into the carton .

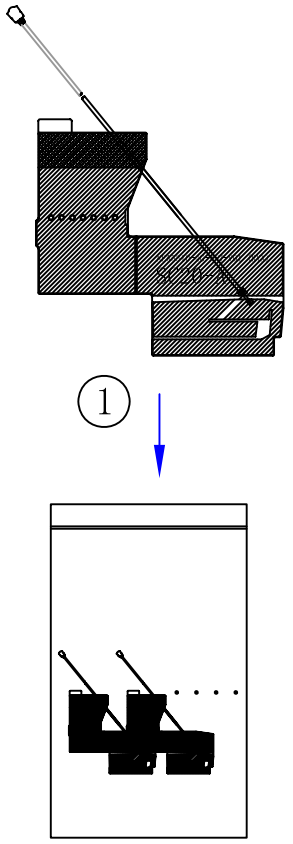
NO.	NAME	DESCRIPTION	QT'Y	REMARK
②	Antenna	FPC,Surface black oil, Back glue。	1	
①	Cable	ODO.81MM,Black body,I-PEX II connector。	1	

Tolerance Range					KOYOX Kangyuan Organism Magnet Industry Co.,Ltd			
	0-10	±0.1			Product No.	HZR040-B	Material	FPC/CABLE
	10-20	±0.12	Design	Yao	Customer No.	AMP 6500 4G (SC20-A)	Version	RB
	20-40	±0.15	Audit	Qin	Part Name	Antenna parts	PN	HZR040
	40以上	±0.2	Approval		Date	2018-10-10	Unit: mm	page1/1

Version	Modifications	Modifier	Date
RA	First issue	Yao	18.10.10

Packaging instructions:

1. Each 100 antenna components are zipped into a bag and then packaged.



Cardboard physical properties parameters:

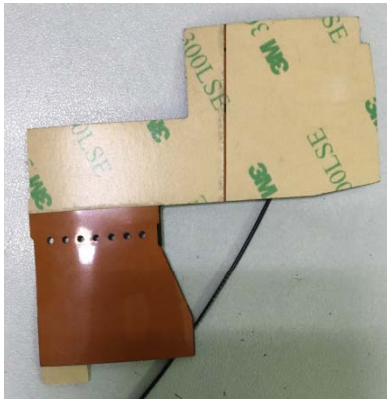
1. Material: <UNK> type(BCB) K = K
2. Break resistance: 11 ± 1 kgf/cm
3. Side pressure: 5500(N/m) ± 500
4. Water content: 8 ± 2 %

					KOYOX Kangyuan Organism Magnet Industry Co.,Ltd			
Tolerance Range	0-10	±0.1			Product No.	HZR040-B	Material	/
	10-20	±0.12	Design	Yao	Customer No.	/	Version	RA
	20-40	±0.15	Audit	Qin	Part Name	Packaging diagram	PN	HZR040
	40以上	±0.2	Approval		Date	2018-10-10	Unit: mm	page1/1

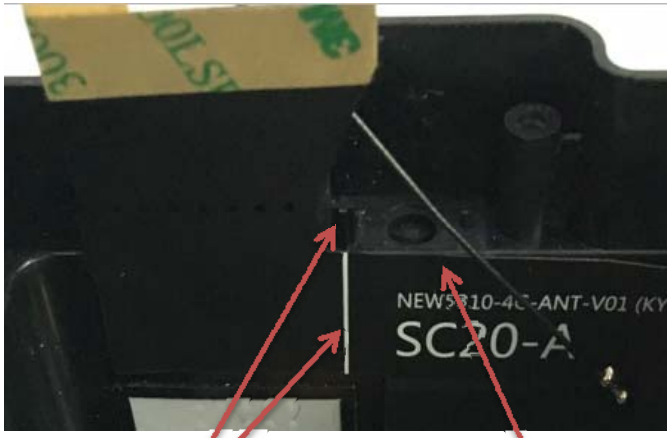
Guidelines for antenna installation operations

Company Number: HZR040-B Customer Number: AMP 6500 4G (SC20-A) Date: 2018-10-10

Step 1:
Turn the FPC antenna to the left.
Rip the paper off.



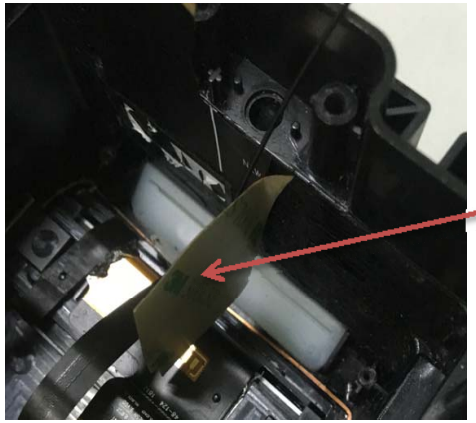
Step 2: Paste FPC
(Paste left end)



FPC wire printing line and shell here bone alignment paste

FPC edges are pasted evenly with shell edges

Step 3: Paste FPC
(Paste right end)



Rip the FPC antenna off paper.

Paste the right end of FPC.

Step 4: Button antenna terminal

The cable line passes below the gap in the bracket.

Step 5: Install motherboard, IC card support, horn, and cycloid

The radio frequency wire of the antenna passes between the horn support and the IC card support.

Step 6: Paste FPC

Tear off the FPC antenna here.

Paste the FPC on the horn.

Icon after antenna assembly

Antenna installation steps:
1/2. Paste the left end of the FPC antenna(as shown);
3. Paste the right end of the FPC antenna(as shown);
4. Buckle antenna terminal, and cable alignment at terminal(as shown);
5. Install the motherboard, install the IC card bracket, install the horn, and the antenna with the axis cycloid(as shown);
6. Paste the FPC on the horn(as shown);
(Note: FPC should be flat on the surface of the bracket, and there must be no undesirable phenomena such as edges or middle bulges)

Shenzhen Kangyuanxin Communication Technology Co.,Ltd

Salt Fog Experimental Report

Customer	HZR	Type of electroplating	Gilding
trade name	AMP 6500 4G SC20-A	Number of samples tested	15PCS
Test specifications	NSS Neutral Test	Criteria for testing	IPC-TM650
Solution value	5%NaCl	Temperature	40℃
Atmospheric pressure	1Mpa		
Spray mode	Continuity	Settlement number (h.80cm)	2ml
Composition	AASS	Material for goods	Antenna board
Spray start time.	2018-12-05-10:00	Test End Time	2018-12-06-10:00
Observation time	Observation		
2018-12-05-10:00	Check for no exceptions		
2018-12-06-10:00	24 hours of continuous spray.		
Test:	Zhong haiping	Audit:	Deng faying
conclusion	Qualified	Approve	Zhang yanmin

Remarks: Commonly used salt mist test methods are: NSS neutral salt mist test: AASS acid salt mist test, CASSketonic acid acceleration test
The AASS test is to add glacial acid adjustment PH = 3.03.3 to the NSS neutral salt fog test
CASS test is to add 0.26 g / L copper chloride to NSS neutral salt mist test solution.

Shenzhen Kangyuanxin Communication Technology Co.,Ltd

Test Report on Constant Temperature, Cold and Hot Impact

Customer	HZR	Date	2018/12/5	Number	HZR040-B
Trade name	AMP 6500 4G_SC20-A	Number	15PCS	Test time	24H
Material	FPC+Cable	Supplier	BYK	Standard	MIL-SDT-202Method017IEC60749-25 JEDEC JESD22-A104-B IEC68-2-1MIL-STD-2168-85

Objective: To test the reliability of the product and the binding force,anti-oxidation and anti-corrosion ability of the coating.

Equipment Name: High and Low Temperature Test Box

Laboratory environment:

Temperature	45℃	Humidity	85%	Atmosphere	1Mpa

Test parameters

Temperature	High temperature		70℃	Low temperature	Negative 40℃		Tolerance	1℃
Time	constant temperature	High	60min	Warming	5min		Remarks	
		Low	60min	Cooling	5min			
Circulate	12 times		Other	Humidity	85%			
Check	separation	No	oxide	No	blistering	No	Ink shedding	No
Test	stripping	≥1.0kgf/cm^2	Wweld	ACC	Baige.	ACC	wear-resisting	ACC

The ACC was passed and NG was unqualified.

Test record:

Product Number	Product Test Results	Judging
1	Non-stratification, foaming, discoloration, degumming, upping, oxidation and appearance damage	Qualified
2		Qualified
3		Qualified
4		Qualified
5		Qualified
6		Qualified
7		Qualified
8		Qualified
9		Qualified
10		Qualified
11		Qualified
12		Qualified
13		Qualified
14		Qualified
15		Qualified

Tester.: Zhong haiping Audit: Deng faying Approve: Zhang yanmin