Speci	ficationfor Approval
Customer.:	Point Moblie
Project:	PM84
Brand Name:	
Part No:	
Type: <u>BAR phone</u>	
GSM850,	/CSM000/DCS/DCS/W1/W9/W4/W5/W9/W10
Band: B1/B2/B3/B4/	<u>/B5/B7/B8/B12/B13/B17/B19/B20/B25/B26/B28/B66/B38/B39/B40</u>
Band: <u>B1/B2/B3/B4/</u> Manufacturer:	/B5/B7/B8/B12/B13/B17/B19/B20/B25/B26/B28/B66/B38/B39/B40
Band: <u>B1/B2/B3/B4/</u> Manufacturer: Part Name:	<u>/B5/B7/B8/B12/B13/B17/B19/B20/B25/B26/B28/B66/B38/B39/B4(</u>
Band:B1/B2/B3/B4/ Manufacturer: Part Name: Date.:	/B5/B7/B8/B12/B13/B17/B19/B20/B25/B26/B28/B66/B38/B39/B4(SPEED FPC 2023/10/26
Band: B1/B2/B3/B4/ Manufacturer: Part Name: Date.: Version:	/85/87/88/812/813/817/819/820/825/826/828/866/838/839/840 SPEED FPC 2023/10/26 A
Band:B1/B2/B3/B4/ Manufacturer: Part Name: Date.: Version: Editor:	/B5/B7/B8/B12/B13/B17/B19/B20/B25/B26/B28/B66/B38/B39/B4(SPEED FPC 2023/10/26 A xw

Customer Approval

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Antenna Specification

1. Electrical Characteristics					
Frequency	700/850/900/1800/1900/2100/2500/2700MHZ				
V.S.W.R.	1.5 : 1 Max				
Return Loss	-10 dB Max				
Polarization	Linear				
Impedance	50 Ohm				
2. Material & Mechar	nical Characteristics				
Material of antenna	FPC				
3. Enviro	onmental				
Operation Temperature	- 40 °C ~ + 65 °C				
Storage Temperature	- 40 °C ~ + 80 °C				
Antenna Color Storage life	< 2 year				

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4、Test &Item Equipment						
List	Test Item	Equipment				
1.S11 Parameter	VSWR, Return Loss	Agilent VNA				
2.Active Test	TRP, TIS	Agilent 8960 Satimo Starlab				
3.Passive Test	Gain, Efficiency, Pattern	Agilent VNA				
<text></text>						
	A Th Te 2 ° 15 Ag	darkroom test parameters e test system: SATIMO-SG24 st environment: temperature 20 °C + C, humidity of 50% plus or minus % gilent 8960 Active test equipment, test				

5. Test methods and specifications:

Testing equipment: network analyzer (HP 8753 E)Test method: with a 50 ohm CABLE CABLE from the instrument test port export, calibration using a calibration after connection

Rf fixture of the SMA connector, records related to the frequency points corresponding return loss and standing wave ratio.

Test schematic diagram is as follows:

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6.1. Machine Status

6.2. Overview

GSM850/GSM900/DCS/PCS/W1/W2/W4/W5/W6/W8/W19 LTE B1/2/3/4/5/7/8/12/13/17/19/20/25/26/28/38/39/40/41/66

7、Antenna Test Results

7.1. Main antenna status

7.1.1 Main refection loss 1 (Switch RF1 parallel Oohm Oohm)

Frequency(MHz)	S11(dB)
880	-8.5
960	-3.1
1710	-11.9
2690	-16.9

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Frequency	Efficiency	Frequency	Efficiency	Frequency	Efficiency
(MHz)	(dB)	(MHz)	(dB)	(MHz)	(dB)
880	-4.19	1890	-2.55	2300	-2.34
890	-3.68	1900	-2.58	2310	-2.20
900	-3.56	1910	-2.68	2320	-2.27
910	-3.41	1920	-2.74	2330	-2.24
920	-3.71	1930	-2.63	2340	-2.25
930	-4.11	1940	-2.84	2350	-2.38
940	-4.28	1950	-2.93	2360	-2.44
950	-4.61	1960	-3.02	2370	-2.41
960	-5.93	1970	-2.96	2380	-2.33
		1980	-2.78	2390	-2.12
1710	-2.01	1990	-2.85	2400	-2.02
1720	-1.91	2000	-2.94	2410	-2.08
1730	-1.83	2010	-3.08	2420	-2.04
1740	-1.92	2020	-3.15	2430	-2.17
1750	-2.21	2030	-3.33	2440	-2.40
1760	-2.37	2040	-3.42	2450	-2.32
1770	-2.52	2050	-3.46	2460	-2.20
1780	-2.59	2060	-3.53	2470	-2.19
1790	-2.61	2070	-3.37	2480	-2.05
1800	-2.56	2080	-3.08	2490	-1.88
1810	-2.56	2090	4	2500	-1.78
1820	-2.76	2100	-3.02	2510	-1.61
1830	-2.71	2110	-3.13	2520	-1.65
1840	-2.48	2120	-3.25	2530	-1.65
1850	-2.69	2130	-3.32	2540	-1.73
1860	-2.85	2140	-3.38	2550	-1.86
1870	-2.86	2150	-3.32	2560	-2.06
1880	-2.76	2160	-3.2	2570	-2.05
		2170	-3.08	2580	-1.94
		2180	-2.98	2590	-1.88
		2190	-2.79	2600	-1.8
		2200	-2.71	2610	-1.68
				2620	-1.59
				2630	-1.72
				2640	-1.86
				2650	-2.04
				2660	-2.21
				2670	-2.29
				2680	-2.37
				2690	-2.51
				2700	-2.51

7.1.2 . Main passive efficiency 1

7.1.3 Main antenna status 2 (Switch RF2 parallel 4.3nh)7.1.4 Main refection loss 2



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$7.\,1.\,5$, Main passive efficiency 2

Frequency	Efficiency	Frequency	Efficiency	Frequency	Efficiency
(MHz)	(dB)	(MHz)	(dB)	(MHz)	(dB)
820	-3.5	1890	-2.34	2300	-2.23
830	-3.83	1900	-2.33	2310	-2.17
840	-3.32	1910	-2.38	2320	-2.26
850	-2.77	1920	-2.43	2330	-2.29
860	-3.39	1930	-2.35	2340	-2.36
870	-4.15	1940	-2.52	2350	-2.53
880	-4.87	1950	-2.62	2360	-2.59
890	-4.49	1960	-2.65	2370	-2.55
		1970	-2.52	2380	-2.48
1710	-2.14	1980	-2.32	2390	-2.28
1720	-1.97	1990	-2.35	2400	-2.2
1730	-1.91	2000	-2.41	2410	-2.25
1740	-1.93	2010	-2.57	2420	-2.26
1750	-2.22	2020	-2.63	2430	-2.35
1760	-2.36	2030	-2.85	2440	-2.57
1770	-2.54	2040	-2.9	2450	-2.45
1780	-2.58	2050	-2.94	2460	-2.32
1790	-2.74	2060	-3.02	2470	-2.25
1800	-2.63	2070	-2.88	2480	-2.13
1810	-2.66	2080	-2.63	2490	-1.94
1820	-2.82	2090	-2.58	2500	-1.88
1830	-2.76	2100	-2.62	2510	-1.74
1840	-2.54	2110	-2.72	2520	-1.76
1850	-2.73	2120	-2.86	2530	-1.75
1860	-2.86	2130	-2.95	2540	-1.85
1870	-2.79	2140	-3.02	2550	-1.96
1880	-2.64	2150	-2.98	2560	-2.08
		2160	-2.9	2570	-2.12
		2170	-2.78	2580	-2.07
		2180	-2.64	2590	-2.01
		2190	-2.52	2600	-1.99
		2200	-2.45	2610	-1.93
				2620	-1.88
				2630	-2.01
				2640	-2.2
				2650	-2.41
				2660	-2.68
				2670	-2.88
				2680	-3.05
				2690	-3.34
				2700	-3.42

7.1.7 、 Main circuit match 3 (Switch RF3 parallel 4.7nh)

7.1.8 、 Main refection loss 3

Frequency(MHz)	S11(dB)
791	-4.1
862	-10.1



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7.1.9 Main passive efficiency 3

Frequency	Efficiency	Frequency	Efficiency	Frequency	Efficiency
(MHz)	(dB)	(MHz)	(dB)	(MHz)	(dB)
790	-5.96	1890	-2.79	2300	-3.8
800	-5.41	1900	-2.71	2310	-3.55
810	-4.75	1910	-2.82	2320	-3.49
820	-5.21	1920	-2.81	2330	-3.26
830	-5.47	1930	-2.81	2340	-3.08
840	-5.16	1940	-2.99	2350	-3.16
850	-5.42	1950	-3.12	2360	-3.13
860	-6.77	1960	-3.13	2370	-3
		1970	-2.96	2380	-2.88
1710	-3.88	1980	-2.72	2390	-2.66
1720	-3.66	1990	-2.73	2400	-2.55
1730	-3.55	2000	-2.86	2410	-2.52
1740	-3.43	2010	-3.08	2420	-2.48
1750	-3.68	2020	-3.33	2430	-2.48
1760	-3.69	2030	-3.75	2440	-2.59
1770	-3.76	2040	-4.04	2450	-2.44
1780	-3.68	2050	-4.41	2460	-2.3
1790	-3.77	2060	-5.08	2470	-2.26
1800	-3.61	2070	-5.56	2480	-2.14
1810	-3.68	2080	-5.96	2490	-1.94
1820	-3.74	2090	-6.81	2500	-1.84
1830	-3.65	2100	-7.81	2510	-1.74
1840	-3.35	2110	-8.77	2520	-1.73
1850	-3.43	2120	-9.67	2530	-1.73
1860	-3.44	2130	-10.45	2540	-1.82
1870	-3.3	2140	-10.73	2550	-1.95
1880	-3.06	2150	-10.54	2560	-2.08
		2160	-9.99	2570	-2.12
		2170	-9.17	2580	-2.03
		2180	-8.36	2590	-1.98
		2190	-7.47	2600	-1.87
		2200	-6.85	2610	-1.79
				2620	-1.69
				2630	-1.82
				2640	-1.98
				2650	-2.23
				2660	-2.4
				2670	-2.49
				2680	-2.56
				2690	-2.73
				2700	-2.68

- 7.1.10 Main circuit match 4 (Switch RF4 parallel 18nh)
- 7.1.11 Main refection loss 4

Frequency(MHz)	S11(dB)	
703	-5.1	
803	-3.8	

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7.1.12 Main passive efficiency 4

Frequency	Efficiency	Frequency	Efficiency	Frequency	Efficiency
(MHz)	(dB)	(MHz)	(dB)	(MHz)	(dB)
700	-5.08	1890	-2.8	2300	-3.8
710	-4.44	1900	-2.71	2310	-3.53
720	-4.55	1910	-2.78	2320	-3.48
730	-4.24	1920	-2.77	2330	-3.25
740	-4.41	1930	-2.77	2340	-3.1
750	-4.43	1940	-2.96	2350	-3.17
760	-4.87	1950	-3.11	2360	-3.15
770	-4.61	1960	-3.11	2370	-3.05
780	-5.42	1970	-2.93	2380	-2.94
790	-5.79	1980	-2.68	2390	-2.68
800	-5.26	1990	-2.7	2400	-2.58
		2000	-2.83	2410	-2.58
1710	-3.8	2010	-3.07	2420	-2.51
1720	-3.6	2020	-3.35	2430	-2.52
1730	-3.48	2030	-3.76	2440	-2.66
1740	-3.38	2040	-4.05	2450	-2.52
1750	-3.61	2050	-4.42	2460	-2.38
1760	-3.62	2060	-5.08	2470	-2.35
1770	-3.69	2070	-5.51	2480	-2.23
1780	-3.63	2080	-5.91	2490	-2.02
1790	-3.7	2090	-6.76	2500	-1.93
1800	-3.56	2100	-7.78	2510	-1.79
1810	-3.59	2110	-8.73	2520	-1.8
1820	-3.71	2120	-9.65	2530	-1.8
1830	-3.61	2130	-10.44	2540	-1.89
1840	-3.34	2140	-10.76	2550	-2
1850	-3.43	2150	-10.61	2560	-2.13
1860	-3.48	2160	-10.1	2570	-2.15
1870	-3.32	2170	-9.29	2580	-2.03
1880	-3.09	2180	-8.52	2590	-1.95
		2190	-7.58	2600	-1.87
		2200	-6.92	2610	-1.78
				2620	-1.69
				2630	-1.83
				2640	-1.99
				2650	-2.19
				2660	-2.36
				2670	-2.41
				2680	-2.47
				2690	-2.6
				2700	-2.58

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7.2.1. Div antenna status

7.2.2 , Div refection loss 1



7.2.3 Div passive efficiency 1

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Frequenc	Efficiency	Frequenc	Efficiency	Frequenc	Efficiency
y (MHz)	(dB)	y (MHz)	(dB)	y (MHz)	(dB)
920	-4.28	1990	-2.89	2300	-4.37
930	-3.92	2000	-3	2310	-4.49
940	-3.31	2010	-3.12	2320	-4.64
950	-3.03	2020	-3.16	2330	-4.8
960	-3.66	2030	-3.25	2340	-4.96
		2040	-3.43	2350	-5.3
1800	-4.74	2050	-3.59	2360	-5.29
1810	-4.44	2060	-3.66	2370	-5.25
1820	-4.02	2070	-3.56	2380	-5.09
1830	-3.4	2080	-3.42	2390	-4.81
1840	-2.98	2090	-3.44	2400	-4.73
1850	-2.74	2100	-3.61	2510	-3.83
1860	-2.65	2110	-3.73	2520	-3.75
1870	-2.55	2120	-3.78	2530	-3.75
1880	-2.42	2130	-3.74	2540	-3.84
1890	-2.2	2140	-3.84	2550	-3.84
1900	-2.27	2150	-3.79	2560	-3.85
1910	-2.47	2160	-3.76	2570	-3.81
1920	-2.66	2170	-3.83	2580	-3.7
1930	-2.7	2180	-3.72	2590	-3.75
1940	-2.87	2190	-3.5	2600	-3.68
1950	-3.03	2200	-3.33	2610	-3.59
1960	-3			2620	-3.51
1970	-3.01			2630	-3.51
1980	-2.95			2640	-3.62
		•		2650	-3.67
				2660	-3.9
				2670	-4.05

2680

2690

2700

-4.15

-4.05

-3.93

7.2.4 、 Div refection loss 2



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$7.\,2.\,5$. Div passive efficiency 2

Frequenc	Efficiency	Frequenc	Efficiency	Frequenc	Efficiency
y (MHz)	(dB)	y (MHz)	(dB)	y (MHz)	(dB)
870	-3.72	1990	-4.46	2300	-4.67
880	-3.31	2000	-4.46	2310	-4.66
890	-2.84	2010	-4.48 2320		-4.75
900	-2.64	2020	-4.53	2330	-4.79
		2030	-4.59	2340	-4.86
1800	-5.31	2040	-4.75	2350	-5.12
1810	-5.39	2050	-4.96	2360	-5.07
1820	-5.41	2060	-5.02	2370	-5.08
1830	-5.21	2070	-4.9	2380	-4.99
1840	-5	2080	-4.72	2390	-4.74
1850	-5.03	2090	-4.69	2400	-4.63
1860	-5.21	2100	-4.78	2500	-3.22
1870	-5.14	2110	-4.88	2510	-3.15
1880	-5.01	2120	-4.91 2520		-3.1
1890	-4.74	2130	-4.83	2530	-3.1
1900	-4.77	2140	-4.92 2540		-3.18
1910	1910 -4.88		-4.77	2550	-3.2
1920	-4.99	2160	-4.72 2560		-3.23
1930	-4.91	2170	-4.72	2570	-3.21
1940	-4.94	2180	-4.56	2580	-3.11
1950	-4.95	2190	-4.33	2590	-3.12
1960	-4.79	2200	-4.15	2600	-3.07
1970	-4.78			2610	-3.02
1980	-4.6			2620	-2.9
				2630	-2.95
				2640	-3.06
				2650	-3.16
				2660	-3.31
				2670	-3.47
				2680	-3.59
				2690	-3.59
				2700	-3.51

7.2.6 , Div refection loss 3



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7.2.7 、 Div passive efficiency 3 $\,$

Frequenc	Efficiency	Frequenc	Efficiency	Frequenc	Efficiency
y (MHz)	(dB)	y (MHz)	(dB)	y (MHz)	(dB)
750	-5.29	1990	-7.08	2300	-6.09
760	-5.14	2000	-7.07	2310	-5.95
770	-5	2010	-6.98 2320		-5.92
780	-5.42	2020	-7.04	2330	-5.84
790	-5.63	2030	-7.06	2340	-5.82
800	-4.68	2040	-7.22	2350	-6.13
		2050	-7.39	2360	-6.3
1800	-11.1	2060	-7.4	2370	-6.48
1810	-10.99	2070	-7.23	2380	-6.62
1820	-10.59	2080	-6.9	2390	-6.5
1830	-10.13	2090	-6.82	2400	-6.54
1840	-9.82	2100	-6.91	2500	-6.9
1850	-9.9	2110	-7.03	2510	-7.04
1860	-9.9	2120	-7.09	2520	-7.21
1870	-9.48	2130	-6.96	2530	-7.27
1880	-9.14	2140	-7.07	2540	-7.52
1890	-8.58	2150	-6.87	2550	-7.58
1900	-8.44	2160	-6.82	2560	-7.92
1910	-8.36	2170	-6.78	2570	-8.03
1920	-8.28	2180	-6.64	2580	-7.98
1930	-8.08	2190	-6.36	2590	-8.11
1940	-7.91	2200	-6.09	2600	-8.2
1950	-7.75			2610	-8.3
1960	-7.49			2620	-8.21
1970	-7.48			2630	-8.25
1980	-7.31			2640	-8.28
				2650	-8.17

2640	-8.28
2650	-8.17
2660	-8.28
2670	-8.25
2680	-8.33
2690	-8.28
2700	-7.96

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7.3、GPS/WIFI 2.4G+5.8G antenna 7.3.1、GPS/WIFI 2.4G+5.8G refection loss

Frequency(MHz)	S11(dB)
1575	-13.8
2400	-11.6
2500	-10.1
5150	-19.6
5850	-23.8



7.4.1、 Peak gain value

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Main		Div		GPS/2.4G WIFI		5.8G WIFI	
	Peak	Band	Peak		Peak		Peak
Band				Pre (Mhz)		Pre (Mhz)	
	Gain.db		Gain.db		Gain.db		Gain.db
GSM850	-1.1	GSM850	0.5	150000000	1.52	5150000000	1.83
GSM900	0.3	GSM900	1.4	1510000000	1.5	520000000	2.32
DCS	3.6	DCS	0.7	1520000000	1.46	5250000000	1.88
PCS	2.6	PCS	1.9	1530000000	1.48	5300000000	1.92
WCDMA 1	1.3	WCDMA 1	4.3	1540000000	1.31	5350000000	2.16
WCDMA 2	2.6	WCDMA 2	2.9	1550000000	1.22	5400000000	1.86
WCDMA 4	2.3	WCDMA 4	4.3	1560000000	1	5450000000	1.48
WCDMA 5	-1.1	WCDMA 5	0.5	1570000000	0.8	5500000000	1.67
WCDMA 8	0.3	WCDMA 8	1.4	1580000000	0.66	5550000000	2.06
WCDMA 19	-1.1	WCDMA 19	0.5	1590000000	0.53	5600000000	1.59
LTE-B1	1.3	LTE-B1	4.3	160000000	0.39	5650000000	1.65
LTE-B2	2.6	LTE-B2	1.9	240000000	0.17	5700000000	2.51
LTE-B3	3.6	LTE-B3	0.7	2410000000	0.19	5750000000	2.4
LTE-B4	2.3	LTE-B4	4.3	2420000000	0.23	5800000000	1.52
LTE-B5	-1.1	LTE-B5	0.5	2430000000	0.24	5850000000	1.35
LTE-B7	2.5	LTE-B7	2.9	2440000000	0.3		
LTE-B8	0.3	LTE-B8	1.4	2450000000	0.3		
LTE-B12	-0.4	LTE-B12	-0.4	2460000000	0.29		
LTE-B13	-0.4	LTE-B13	-0.4	2470000000	0.09		
LTE-B17	-0.4	LTE-B17	-0.4	2480000000	-0.18		
LTE-B20	-1.8	LTE-B20	-2.2	2490000000	-0.55		
LTE-B25	2.5	LTE-B25	-2.9	250000000	-1.09		
LTE-B26	-1.1	LTE-B26	0.5				
LTE-B28	-0.5	LTE-B28	-0.4				
LTE-B66	1.3	LTE-B66	4.3				
LTE-B38	2.5	LTE-B38	2.9				
LTE-B40	1.1	LTE-B40	5.4				
LTE-B41	2.5	LTE-B41	2.9				

7.4.2、Radiation chart (XY/XZ/YZ)

Main



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