



惠州硕贝德无线科技股份有限公司

Huizhou Speed Wireless Technology Co.,Ltd

Specifications For DIV+GPS Antenna of Project E7-Europe

Customer/ Project		E7	Frequency Band	700MHz~960MHz 1410MHz-2690MHz 1575MHZ	
SCT P/N		F-0Y-31-0116-002-K0	Version	V1.0	
Date		20230317			
SPEED					
Checked by	RF	TXJ	Designed by	RF	JZP
	ME	Nick		ME	Nick
	QC		Remark		
Customer					
Date					
Confirmed by		RF			
		ME			
Remark					

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology.

Revised Records

Date	Revision version	Change Description	Author
2023.02.16	V1.0	Initial version	JZP
2023.03.17	V2.0	Update version	JZP
2023.03.29	V3.0	Update version	JZP

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

Contents

1	Project overview	4
2	Antenna Specification	5
3	Test Environment	6
4	Test Results.....	7
4.1	VSWR	7
4.2	Passive Efficiency and Gain	8
5	Structure Diagram.....	9

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

1 Project Overview

This document is the specifications of the E7 with Main+WiFi antenna. The supported frequency band is 700~960MHz, 1410~2690MHz , 1575MHz

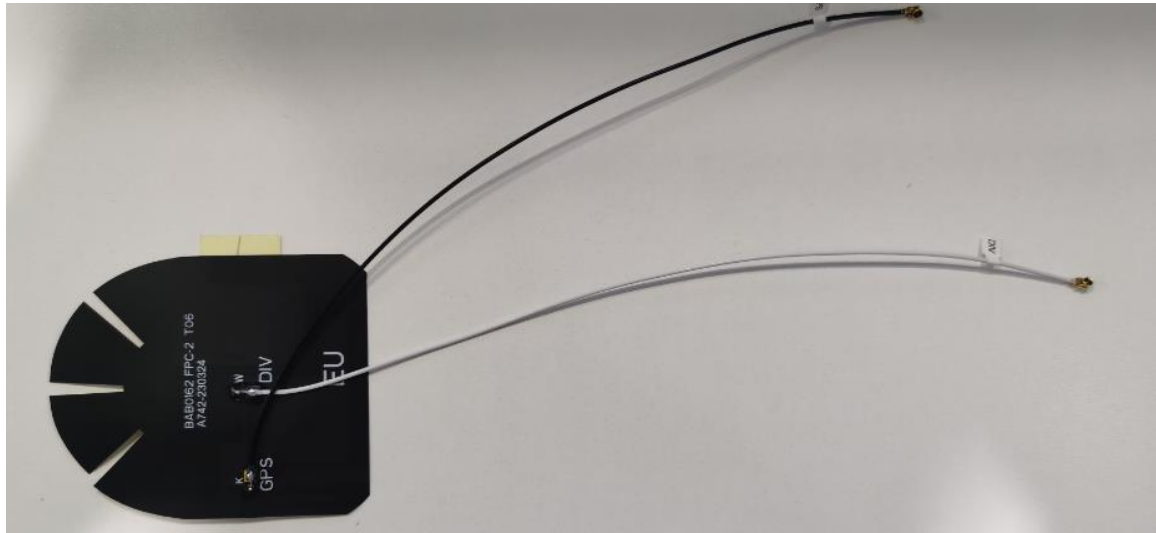


Figure1 Antenna picture

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

2 Antenna Specification

Antenna Form	FPC+cable
Working Bands	700MHz~960MHz 1410MHz~2690MHz+1575MHz
Peak Gain	LF:2.7dbi HF:4.1dbi
Efficiency	LF>20% HF>35%
VSWR	<2.5
Impedance	50ohm
Polarization	Linear polarization
A/R	N/A
Radiation Pattern	Omnidirectional
Feed Mode	Cable
power capacity	33dBm
Size(L*W*H)	
Weight	N/A
Operating temperature	-30 °C to +80 °C
Storage temperature	-30 °C to +80 °C

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

3 Test Environment

The measuring equipment for antenna return loss, voltage standing wave ratio and isolation is Keysight E5071C vector network analyzer. As shown below:



Figure 2 Keysight E5071C vector network analyzer

The efficiency, gain, and pattern of the antenna are all tested in a dark room at Satimo, France. The darkroom uses 64 probes to electronically scan the antenna's radiation performance, collect data, and then analyze and organize it through a computer, which can provide antenna testing in the 400MHz to 8.5GHz frequency.



Figure3 Satimo Darkroom

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

4 Test Results

4.1 Return Loss

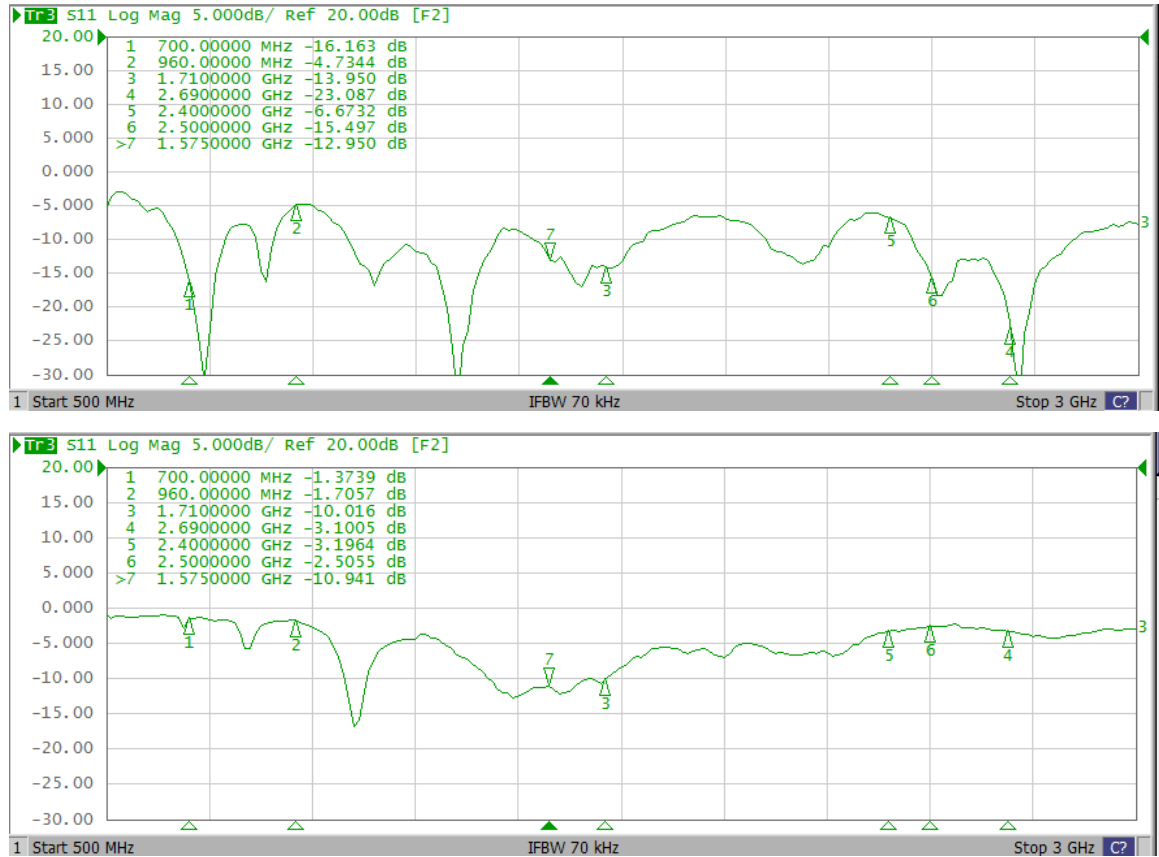


Figure 4 Return Loss

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

4.2 Passive Efficiency and Gain

Freq. (MHz)	DIV ANT		Freq. (MHz)	DIV ANT		Freq. (MHz)	DIV ANT	
	Efficiency	Gain. dBi		Efficiency	Gain. dBi		Efficiency	Gain. dBi
700	57%	2.50	1410	58%	4.15	2070	45%	3.79
710	56%	2.18	1430	57%	3.73	2090	38%	1.82
720	50%	1.29	1450	55%	3.57	2110	32%	0.61
730	50%	1.89	1470	54%	2.96	2130	28%	0.32
740	55%	2.31	1490	54%	2.65	2150	28%	0.67
750	56%	2.34	1510	53%	2.75	2170	31%	1.01
760	53%	2.11	1530	53%	2.79	2190	34%	0.81
770	51%	2.13	1550	58%	3.02	2210	37%	1.59
780	49%	2.00	1570	61%	3.39	2230	40%	2.15
790	47%	1.87	1590	64%	3.46	2250	42%	2.51
800	39%	1.33	1610	64%	3.38	2270	45%	2.52
810	30%	0.50	1630	63%	3.37	2290	47%	2.32
824	26%	-0.39	1650	62%	3.67	2310	49%	2.36
830	23%	-1.15	1670	60%	4.01	2330	51%	2.94
840	24%	-2.02	1690	57%	3.27	2350	54%	3.40
850	31%	-1.39	1710	52%	1.86	2370	58%	3.84
860	42%	-0.38	1730	50%	1.73	2390	59%	3.80
870	60%	1.46	1750	52%	2.83	2410	62%	3.77
880	67%	2.77	1770	48%	3.51	2430	64%	4.02
894	64%	2.72	1790	45%	3.08	2450	66%	3.95
900	55%	1.59	1810	43%	2.60	2470	64%	3.44
910	47%	0.80	1830	42%	1.57	2490	59%	2.79
920	40%	0.14	1850	44%	1.48	2510	52%	3.00
930	34%	-0.28	1870	41%	1.13	2530	46%	2.69
940	29%	-0.58	1890	40%	0.91	2550	42%	2.53
950	25%	-1.01	1910	39%	1.36	2570	38%	1.83
960	23%	-1.95	1930	42%	2.27	2590	36%	1.01
			1950	45%	2.36	2610	38%	1.26
			1970	46%	2.36	2630	46%	2.27
			1990	43%	2.77	2650	53%	2.92
			2010	43%	3.02	2670	57%	3.18
			2030	48%	3.86	2690	61%	3.36
			2050	51%	4.53			

Freq. (MHz)	GPS ANT	
	Efficiency	Gain. dBi
1550	49%	3.11
1555	50%	3.26
1560	51%	3.31
1561	52%	3.34
1570	53%	3.57
1575	54%	3.68
1580	53%	3.44
1585	52%	3.21
1590	49%	3.10
1595	49%	2.85

www.speed-hz.com

SPEED has possession of proprietary information provided in this presentation and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of SPEED Wireless Technology

