

4G Dipole Articulated Antenna

SOLUTION SHEET

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1 Preface

1.1 About This Document

The present document describes the 4G dipole articulated antenna that can be combined with a cellular Ewon gateway.

For additional related documentation and file downloads, please visit www.ewon.biz/support.

1.2 Document History

Version	Date	Description
1.0	2017-10-08	First release
1.1	2017-12-04	Changed: Title, References, Mechanical Data
1.2	2018-02-05	Changed: Part Number
1.3	2020-08-19	Changed: General template

1.3 Related Documents

Document	Author	Document ID
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1.4 Trademark Information

Ewon[®] is a registered trademark of HMS Industrial Networks SA. All other trademarks mentioned in this document are the property of their respective holders.

2 Material Description

This dipole antenna has been primarily designed for 3G and 4G cellular devices such as the Ewon gateway.

It does not require a ground-plane to connect to and has a robust PC+ABS housing. The antenna also has a SMA(M) connector that can be used straight or hinged by 90°.

The antenna has a wide-band high efficiency response on nearly all 2G/3G/4G frequency bands worldwide.

3 Technical Drawing

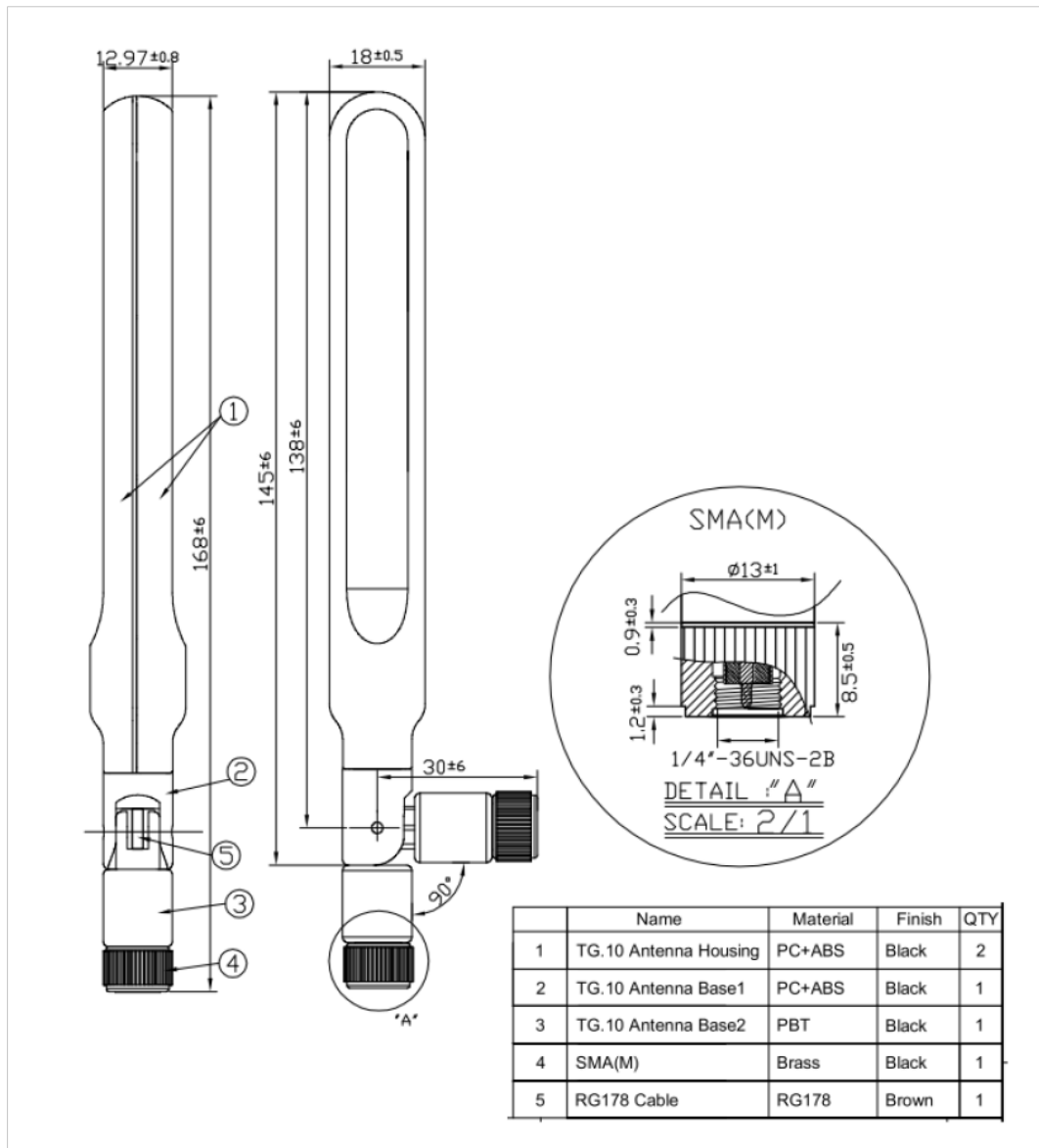


Fig. 1 Technical drawing.

4 Specifications

ELECTRICAL								
In free space								
Frequency (MHz)	703~803	824~894	880~960	1575.42	1710~1880	1850~1990	1920~2170	2490~2690
Efficiency (%)								
straight	41.82	33.71	26.83	26.17	41.01	35.76	39.76	46.48
bent	48.78	45.62	40.51	26.82	49.05	43.56	47.78	55.37
Average Gain(dBi)								
straight	-3.80	-4.74	-5.73	-5.82	-3.92	-4.48	-4.03	-3.44
bent	-3.12	-3.41	-3.93	-5.71	-3.14	-3.62	-3.22	-2.63
Peak Gain(dBi)								
straight	0.34	0.03	-0.48	-1.85	0.67	-0.07	0.23	2.04
bent	-0.21	0.35	0.22	-2.00	1.00	0.65	1.30	3.45
With 15cm X 9cm ground								
Frequency (MHz)	703~803	824~894	880~960	1575.42	1710~1880	1850~1990	1920~2170	2490~2690
Efficiency (%)								
straight	71.68	49.29	43.13	20.87	57.84	67.45	74.31	66.25
bent	74.12	61.90	51.94	23.16	53.64	67.19	73.14	68.20
Average Gain(dBi)								
straight	-1.45	-3.08	-3.66	-6.80	-2.38	-1.74	-1.30	-1.84
bent	-1.30	-2.09	-2.86	-6.35	-2.71	-1.76	-1.36	-1.70
Peak Gain(dBi)								
straight	2.85	1.20	0.19	-2.47	2.34	3.57	4.22	3.95
bent	1.43	0.79	-0.13	-1.44	2.08	2.69	2.96	4.44
On 30cmX30cm ground plane edge								
Frequency (MHz)	703~803	824~894	880~960	1575.42	1710~1880	1850~1990	1920~2170	2490~2690
Efficiency (%)								
straight	57.56	41.53	42.09	18.06	75.91	71.83	68.52	57.08
bent	57.30	48.37	42.12	20.37	72.62	71.93	70.21	58.98
Average Gain(dBi)								
straight	-2.41	-3.82	-3.76	-7.43	-1.20	-1.44	-1.65	-2.50
bent	-2.42	-3.19	-3.76	-6.90	-1.39	-1.43	-1.54	-2.36
Peak Gain(dBi)								
straight	2.96	0.68	-0.01	-3.02	3.37	2.83	2.82	3.17
bent	0.61	-0.78	-0.87	-2.61	3.49	4.63	4.76	3.12
On 30cmX30cm ground plane center								
Frequency (MHz)	703~803	824~894	880~960	1575.42	1710~1880	1850~1990	1920~2170	2490~2690
Efficiency (%)								
straight	42.15	28.00	20.35	24.88	39.11	49.92	55.35	47.74
bent	27.52	21.92	15.49	24.23	61.22	64.56	62.92	56.43
Average Gain(dBi)								
straight	-3.76	-5.65	-6.92	-6.04	-4.09	-3.04	-2.58	-3.33
bent	-5.63	-6.67	-8.12	-6.15	-2.14	-1.90	-2.02	-2.52
Peak Gain(dBi)								
straight	-0.06	-0.66	-1.81	-2.50	0.98	2.01	2.33	2.07
bent	-0.31	-2.93	-4.79	1.22	4.11	5.42	4.94	4.70
Impedance	50Ω							
Polarization	Linear							
Radiation Pattern	Omni							
Input power	5 W							

Fig. 2 Specifications

Mechanical Data	
Dimensions (mm)	Length 168*18*13mm,Φ13mm
Casing	PC + ABS
Connector	Hinged SMA Male
Operating Temp (°C)	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH
Weight	24g

5 Part Number

Item	EWON P/N	Manufacturer	Manufacturer P/N
Antenna	FAC90901_0000	Taoglas	TG.10.0113

6 References

All the above content is based on the Taoglas antennas documentation: <http://www.taoglas.com>

