TAEP162

4G LTE/5G Compact Broadband Chip Antenna

Cellular Antenna

INTRODUCTION

The TAEP162 is a surface mount compact chip style antenna with high performance covering LTE bands from 600 to 2700 MHz.

It can be directly mounted to the PCBA of any wireless communication device for various applications.

APPLICATION

TAEP162 provides a solution for applications where cost and space must be minimized.

The antenna is mounted to the same PCB assembly that holds the radio and other system components.

The PCB must include a ground filled region that will act as the counterpoise for the antenna.

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Features and Benefits

- Surface Mount Part
- **Size:** 45mm x 9 mm x 1.6mm
- **Weight:** 1.2 grams
- **Color:** Black
- **Operating Frequency Bands:** 617~960MHz, 1710~2690MHz
- **Efficiency** up to 90%
- **Peak Gain**: -2.3 ~ 3.6 dBi
- **Impedance**: 50 Ω
- **Polarization**: Vertical
- **Directivity**: Omnidirectional
- **Operating Temperature Range**: -40°C to +85°C

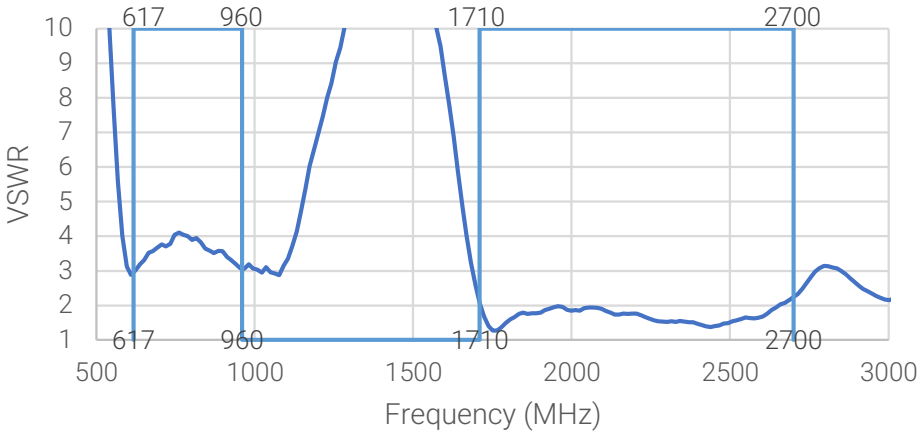
Performance

GAIN AND EFFICIENCY†

Frequency [MHz]	617	960	1710	2155	2690
Efficiency [%]	35	66	38	90	53
Peak Gain [dBi]	-2.3	1.3	0.5	3.6	1.1

†Measured on TAEPEVK Evaluation Kit

VSWR



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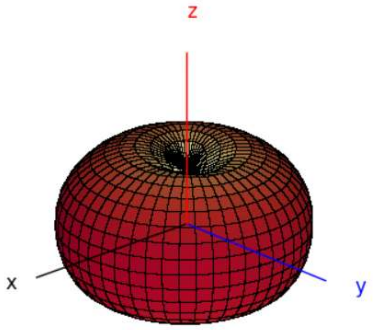
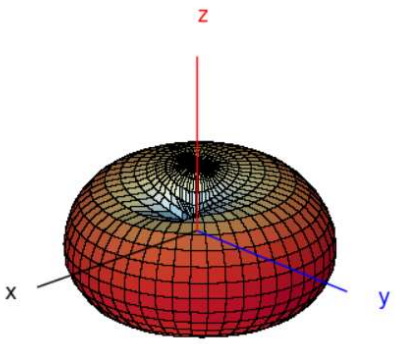
Radiation Patterns

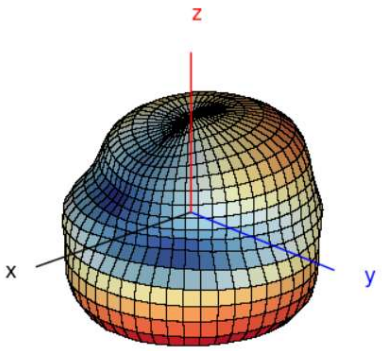
617Mhz



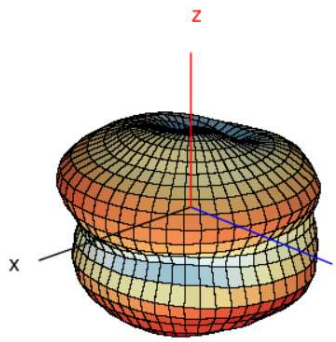
960Mhz



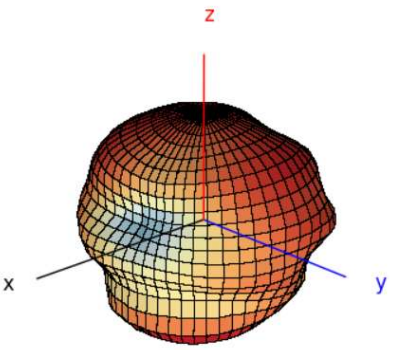
1710Mhz

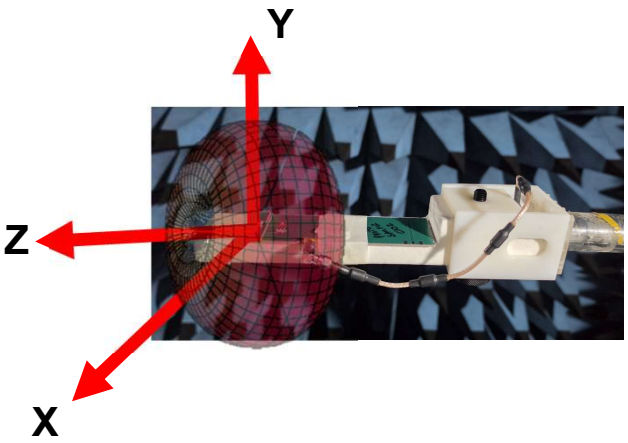


2155Mhz



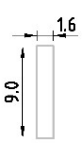
2690Mhz





Dimension (unit: mm)

TOP VIEW



SIDE VIEW

BOTTOM VIEW

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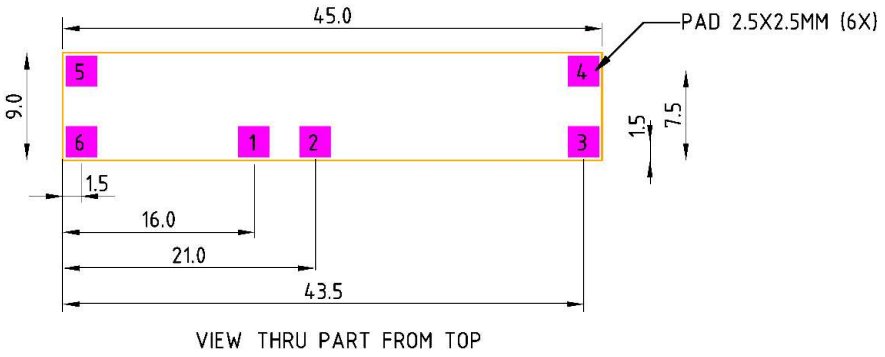
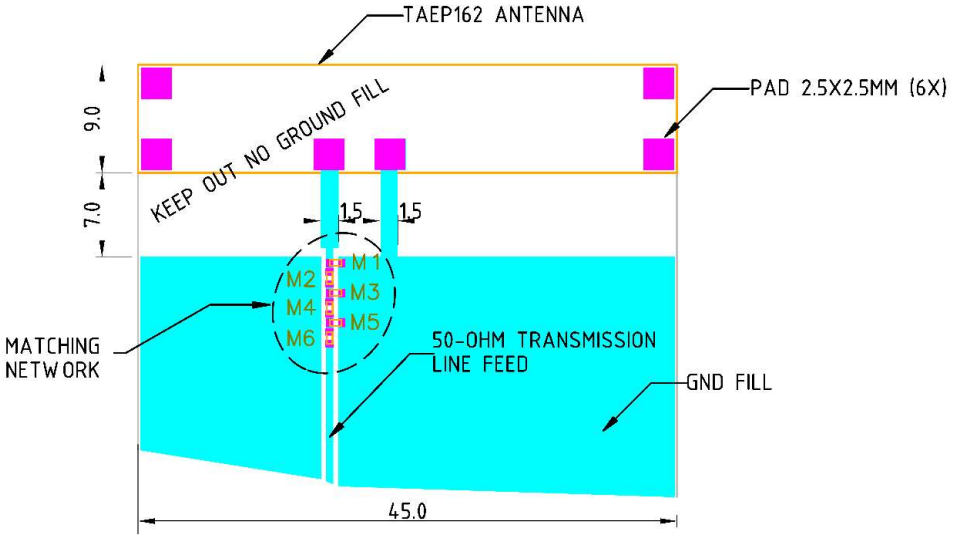
TAEP162 FOOTPRINT



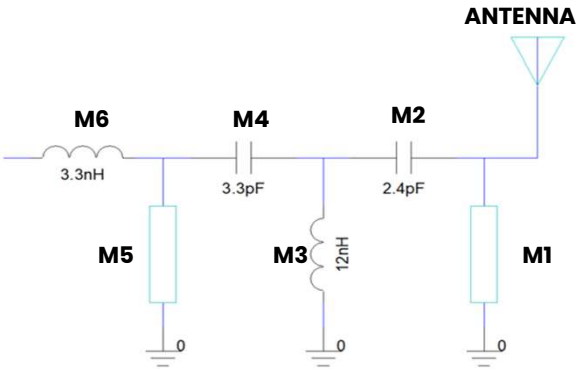
PIN	NAME
1	FEED
2	GND
3	NO CONNECT*
4	NO CONNECT*
5	NO CONNECT*
6	NO CONNECT*

*PADS 3 THRU 6 ARE FOR MOUNTING STRENGTH ONLY

SUGGESTED LAYOUT FOR ANTENNA MOUNTING



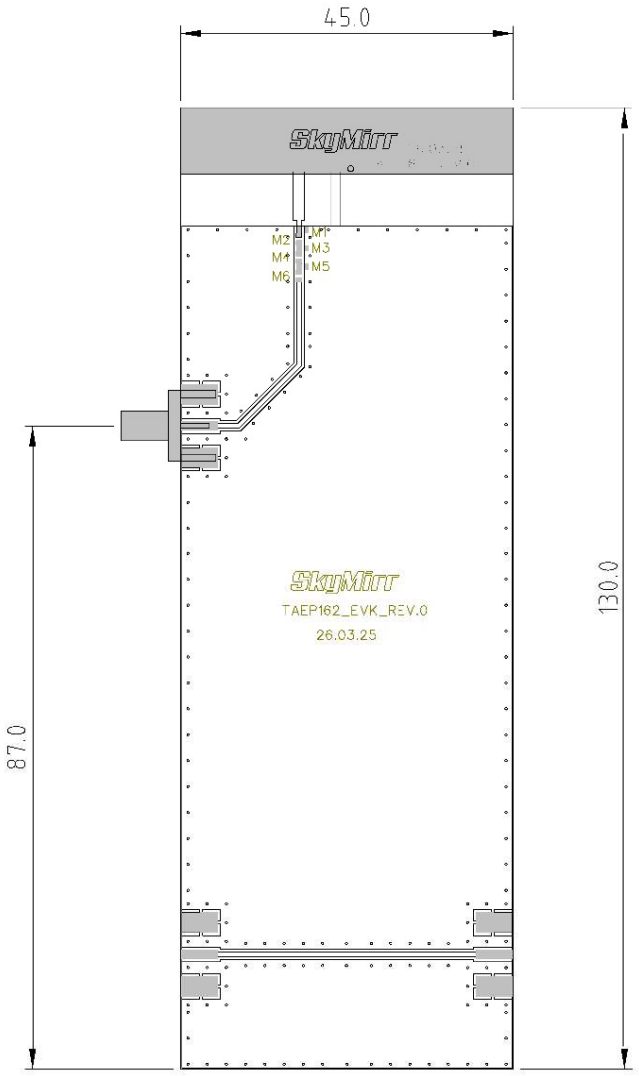
DESIGNATOR	TYPE	VALUE
M1	DO NOT USE	-
M2	RF CERAMIC CAPACITOR 0402 Hi-Q NP0/C0G Tolerance +/- 0.1pF	2.4pF
M3	RF CERAMIC HF INDUCTOR 0402 Tolerance 5% SRF> 3GHz	12nH
M4	RF CERAMIC CAPACITOR 0402 Hi-Q NP0/C0G Tolerance +/- 0.1pF	3.3pF
M5	DO NOT USE	-
M6	RF CERAMIC HF INDUCTOR 0402 Tolerance +/- 0.2 Nh SRF> 3GHz	3.3nH



TAEP162EVK

The TAEP162EVK provides a complete antenna assembly with SMA connector that may be used to evaluate the antenna. Assembly includes the reference PCB with SMA connector, RF matching components and TAEP162 antenna pre-assembled.

Dimension (unit: mm)



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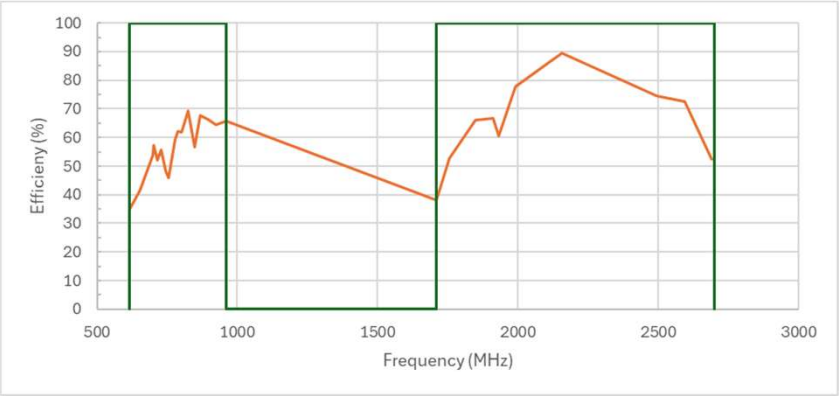
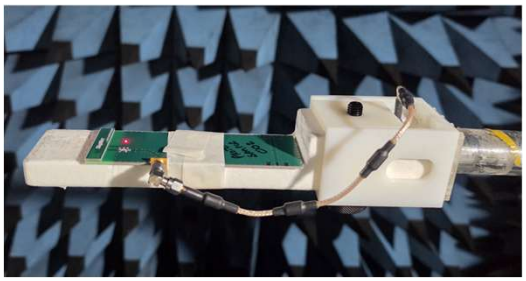
4G LTE/5G Compact Broadband Chip Antenna

Efficiency And Peak Gain Table

Frequency [MHz]	617	652	663	698	703	716	729	746	756	777	787	803
Efficiency [dB]	-4.57	-3.82	-3.56	-2.69	-2.43	-2.84	-2.55	-3.18	-3.38	-2.27	-2.06	-2.09
Efficiency [%]	34.9	41.5	44.1	53.8	57.2	52.0	55.6	48.1	46.0	59.3	62.3	61.8
Peak Gain [dBi]	-2.28	-1.32	-1.17	-0.36	-0.10	-0.59	-0.38	-1.05	-1.21	-0.27	-0.04	0.08
Frequency [MHz]	824	849	869	894	915	925	960					
Efficiency [dB]	-1.58	-2.46	-1.69	-1.78	-1.86	-1.91	-1.83					
Efficiency [%]	69.4	56.8	67.7	66.4	65.2	64.5	65.7					
Peak Gain [dBi]	0.88	0.00	0.61	0.89	1.02	1.05	1.30					
Frequency [MHz]	1710	1755	1850	1910	1930	1990	2110	2155	2496	2593	2690	
Efficiency [dB]	-4.19	-2.78	-1.80	-1.75	-2.18	-1.09	-0.64	-0.48	-1.28	-1.39	-2.80	
Efficiency [%]	38.1	52.7	66.0	66.8	60.5	77.8	86.3	89.6	74.5	72.5	52.5	
Peak Gain [dBi]	0.53	2.15	2.65	2.04	1.64	2.89	3.66	3.60	2.83	3.22	1.08	

Measured VSWR

- 620 to 700 MHz: <4.2
- 700 to 960 MHz: <3.5
- 1710 to 2700MHz: <2.5

Measured Efficiency