Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Part No. M830120
GPS/GLONASS/Beidou/Galileo Ceramic Antenna

1.575 / 1.598 / 1.606 GHz

Supports: Tracking, Smart Home, Agriculture, Automotive, Healthcare, Digital Signage, Wearables, Industrial Devices

GPS / GLONASS / Beidou / Galileo Ceramic Antenna

1.575 GHz, 1.598 GHz, 1.606 GHz

KEY BENEFITS

Stay-in-Tune
IMD antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

Quicker Time-to-Market
By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

Reliability
Products are the latest RoHS version compliant.

APPLICATIONS

- Embedded design
- POS, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Telematics
- Tracking
- Healthcare
- M2M, Industrial devices
- Smart Grid
- OBD-II

Ethertronics' series of ceramic Isolated Magnetic Dipole™ (IMD) antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs. These innovative antennas provide compelling advantages for GPS enabled handheld devices.

Real-World Performance and Implementation

Ceramic antennas may look alike on the outside, but the important difference is inside. Other antennas may contain simple PiFA or monopole designs that interact with their surroundings, complicating layout or changing performance with use position. Ethertronics' antennas utilize patented IMD technology to deliver a unique size and performance combination.

Electrical Specifications

Typical performance on 40 x 80 mm PCB

Frequency (GHz)	1.559 – 1.563	1.575	1.559 – 1.591	1.593 – 1.610
GNSS Bands	Beidou	GPS	Galileo	Glonass
Peak Gain (dBi)	1.76	1.92	1.92	1.71
Efficiency (%)	70	73	70	62
Center Frequency f_o (GHz)	1.561	1.575	1.575	1.603
VSWR	2.0:1 max			
Feed Point Impedance	50 Ω unbalanced			

Mechanical Specifications & Ordering Part Number

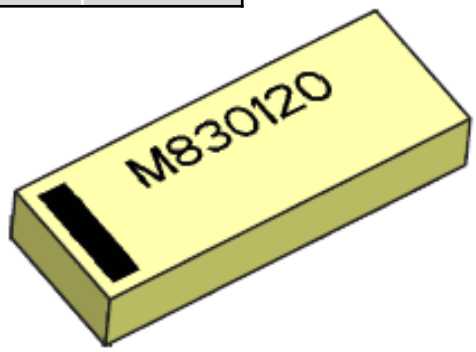
Ordering Part Number	M830120
Size (mm)	8.00 x 3.00 x 1.33
Mounting	Surface mount
Weight (grams)	0.2
Packaging	Tape & Reel, M830120 – 1,000 pieces per reel
Demo Board	M830120-01

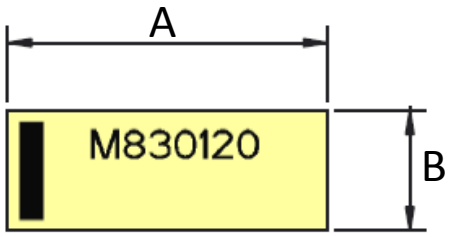
GNSS Ethertronics' Embedded Ceramic Antenna Specifications
Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

Antenna Dimensions

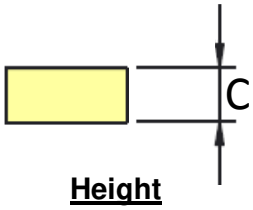
Typical antenna dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)
M830120	8.00 ± 0.2	3.00 ± 0.2	1.33 ± 0.1



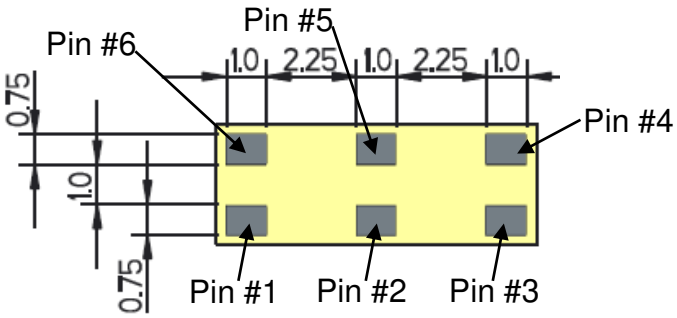


Top View



Height

Pin	Description
1	Ground
2	Dummy Pad
3	Matching circuit connection
4	Dummy Pad
5	Dummy Pad
6	Feed



Bottom View

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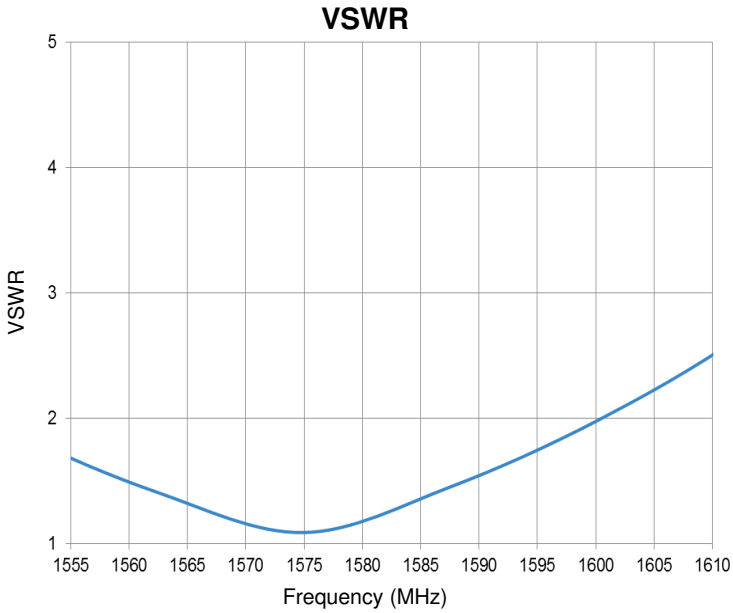
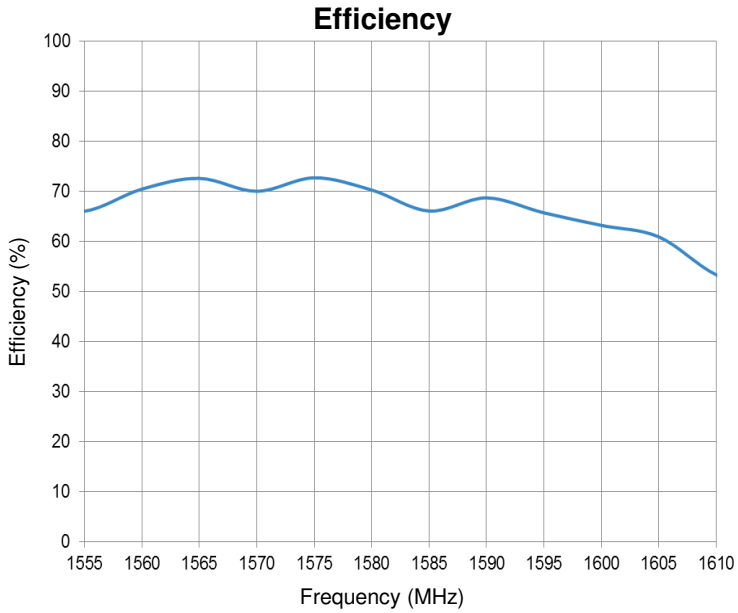
VSWR, Efficiency Plots

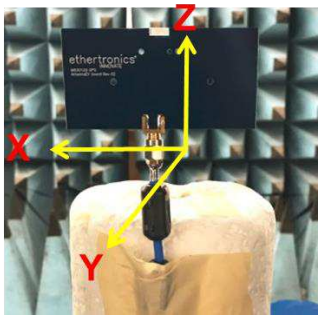
Typical performance on 40 x 80 mm PCB

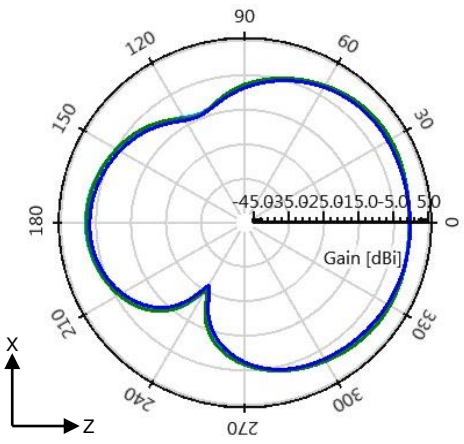


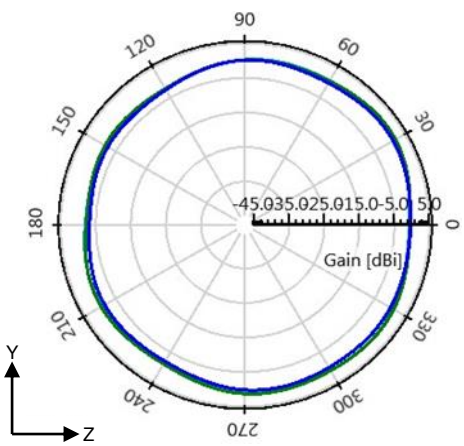


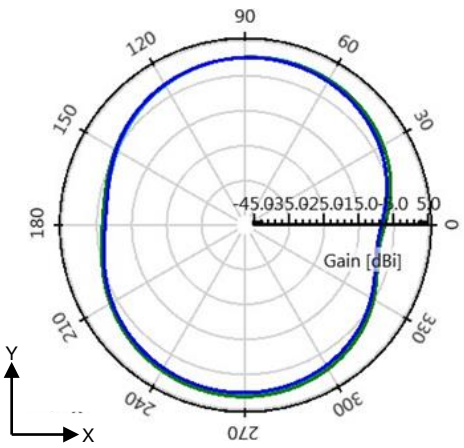
Antenna Radiation Patterns

Typical performance on 40 x 80 mm PCB
Measured @ 1560, 1575, 1605 MHz









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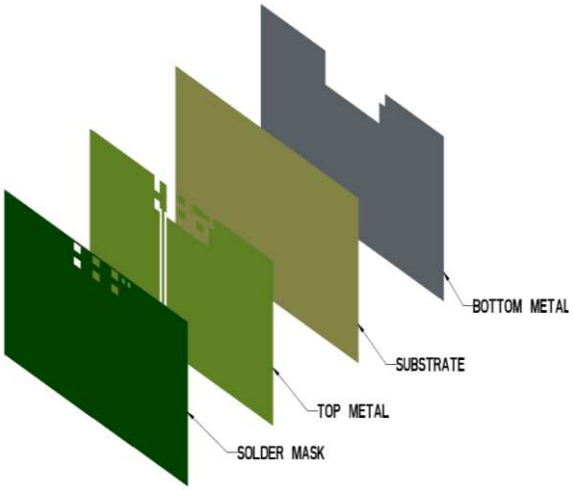
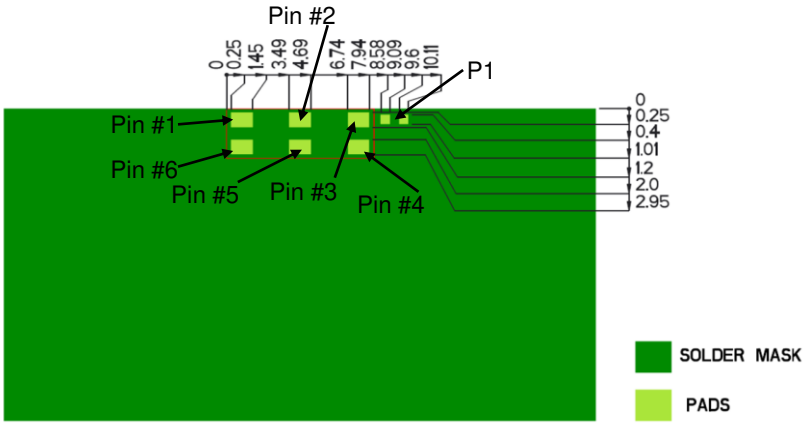
Antenna Layout

Typical layout dimensions (mm)

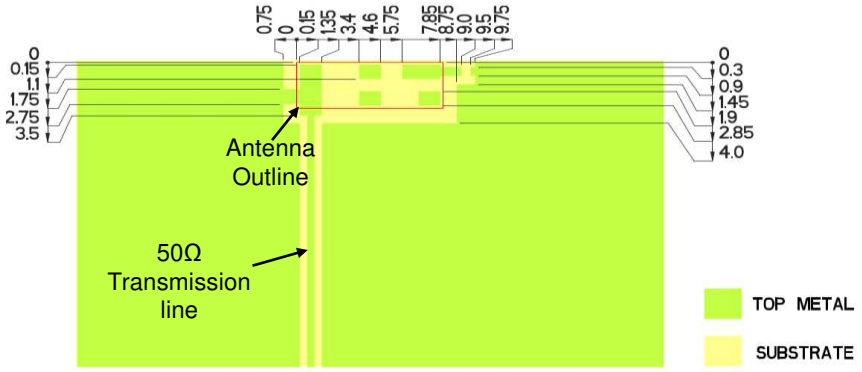




- Additional VIAS : Diam. 0.2mm to be placed around antenna, (no vias on transmission lines).
- Via holes must be covered by solder mask

Pin Descriptions

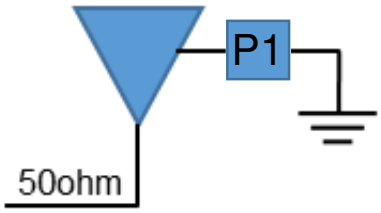
Pin#	Description
1	Ground
2	Dummy Pad
3	Matching circuit connection
4	Dummy Pad
5	Dummy Pad
6	Feed

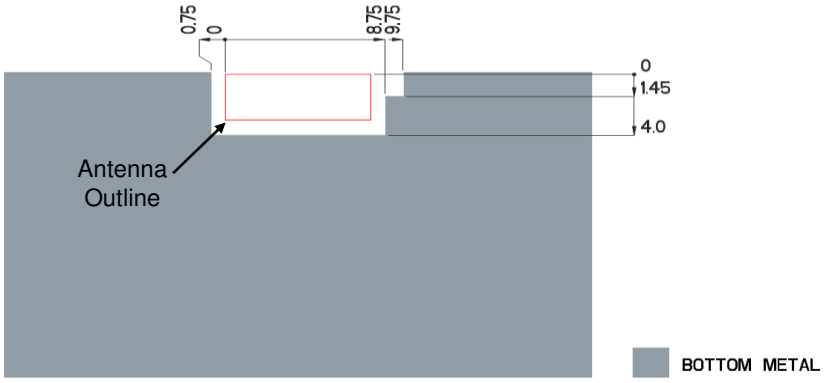


Matching Pi Network

Component	Value	Tolerance
P1	0Ω	N/A

*Actual matching values depend on customer design





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Antenna Layout Tips (General reference)

Important, layout guidelines for correct operation of Ethertronics Ceramic Antennas. Please read guidelines below before laying out the antenna in a device. Figure 1 shows the typical antenna layout. Figure 2 shows Ethertronics' antenna layout.

Other

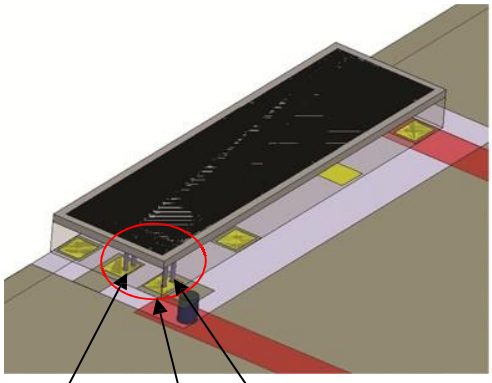

Figure 1
Typical Antenna Layout

Ethertronics

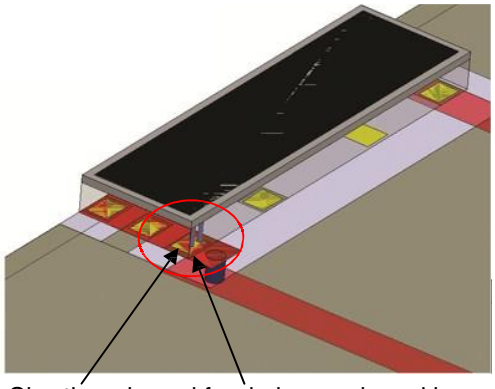

Figure 2
Ethertronics Antenna Layout
(Required)

- The antenna tuning loop is formed by the PCB layout.
- The feed pin and shorting pin are combined because it requires very close proximity to achieve more band- width.

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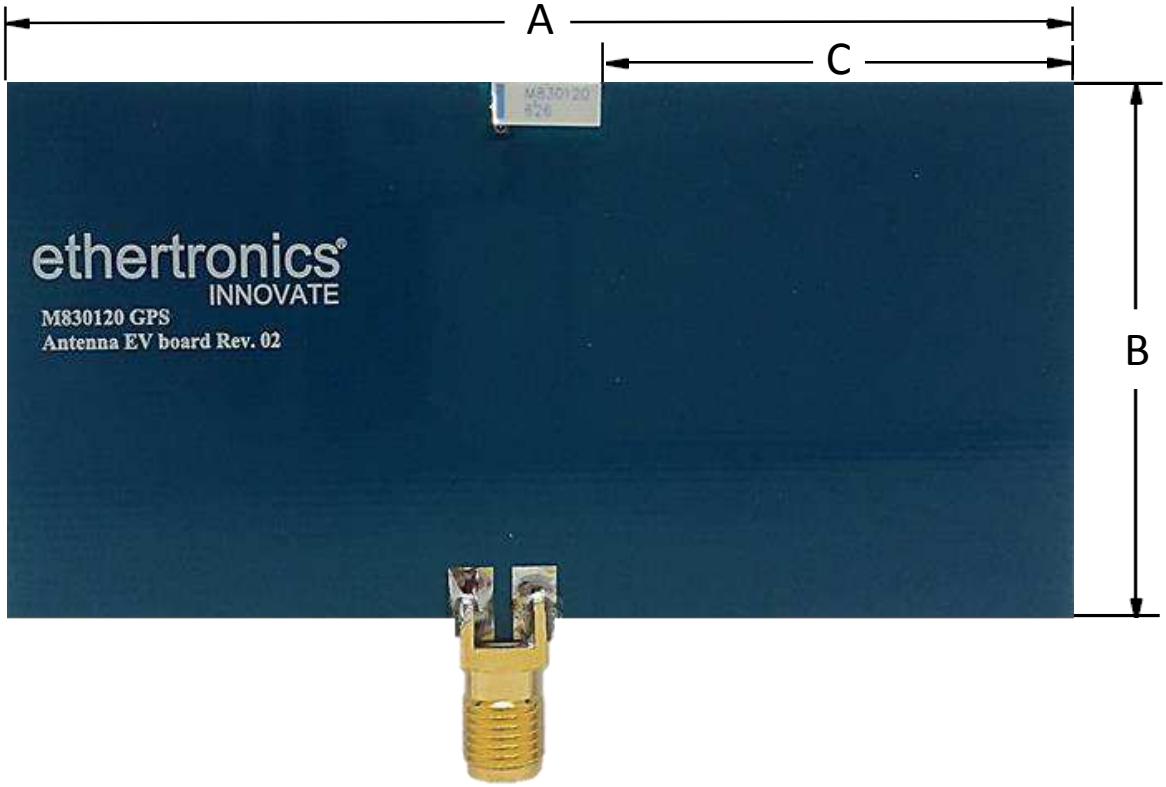
Antenna Demo Board

Typical layout dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)
M830120-01	80.0	40.0	37.0



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