



**Build the perfect and ultimate “Castle” for our customers**

The traditional bandwidth of ceramic patch antennas is relatively narrow. In order to achieve the broader bandwidth, a two-layer stacked antenna are commonly used. However, the higher cost and more weight could be an issue in some applications.

Since Unictron always accomplishes its goals from end-customer’s perspective, we invented the most perfect Castle Series for our valuable customers. The Castle ceramic patch is designed using a hollow structure, transforming two-layer ceramic into a single, monolithic, and small in size band new design, that grants Unictron with multiple international patents. The invention of Castle patch antenna enabling the capability of achieving multi-bands, which is practically unfeasible for single-layer antenna. It provides better signal quality than traditional double-stacked antennas, and the cost is highly competitive.

Common tracking and navigation systems such as GPS, GLONASS, Galileo, BeiDou ,or QZSS only use L1 band signals, and the precision of positioning accuracy is only about 5-10 meters. However, many lower frequency bands such as L2, L5, and L6 were becoming available to the commercial uses, which by using multi-frequency (ex. L1+L2 / L1+L5), it can eliminate errors by tracking multiple GNSS signals, reduce the effect of multipath and interference, and therefore achieving the highest accuracy possible.

**Unictron’s multi-frequency integrated antenna**

Besides the sharing similarity with the medieval castle architecture, solid structure, simple and neat appearance, the flat single-layer integrated design can receive multi-frequency signals. Unictron’s Castle antenna is particularly suitable for carrying RTK high application of precision positioning technology.

The most influential advantage of Unictron’s Castle antenna is that it has better reception performance than traditional stack antennas, considering the antenna dimension being the same. Furthermore, it can effectively help customers reducing



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the cost with the material advantage of a single ceramic block. The smallest antenna size with excellent performance can go as low as 18X18mm, plus the integrated manufacturing process itself provides the best reliability of the antenna and avoids stacking assembly and process errors.

In addition, the weight of Castle can be reduced by up to 40% compared with traditional Stack antenna. It is most suitable for the portable-product market. The simple and flat antenna design is also most ideal for embedded products. It can also carry out miniature customized planning and production at the same time for various consumer positioning modules.

**High performance, High reliability, Low cost, Miniature volume, Multiple sizes**

Besides passive ceramic patch antennas, Unictron also provides active antennas with active circuitry inside, such as LNA, SAW filter, and other active components. The antenna module can help reducing development time for customer and quickly enter the market.

The high-precision positioning Castle antenna are suitable for the use in crowded cities, narrow roadways or valleys, where the traditional ceramic patch may have difficulties locating its position. The Castle ceramic path is also perfectly suitable for applications such as drone monitoring, ship management, geographic map data collection camera and various building mobile positioning systems.

Unictron will continue to develop and launch new positioning antenna series, maximizing our R&D strength and customer needs as the most fundamental rules, and continue to bring customers full of pleasant technical breakthrough surprises in the future.