

ST87M01 WITH IGNION ANTENNA SOLUTION



NB-IoT connectivity and positioning solutions



Accelerate your market IoT designs with the ST87M01 NB-IoT & positioning module and Ignion's Virtual Antenna® technology.

STMicroelectronics and Ignion have joined forces to deliver an unparalleled NB-IoT cellular and GNSS/Wi-Fi positioning solution for IoT and asset tracking applications. Combining the ultracompact, low-power ST87M01 NB-IoT & positioning module with Ignion's advanced **Virtual Antenna® technology**, designers can create robust, efficient, and effective IoT applications.

This validated reference design enables excellent performance, fast-tracks deployments, and streamlines cellular certifications.

KEY BENEFITS

- Seamless integration of ST87M01 NB-IoT and positioning module and **Ignion's Virtual Antenna®**
- ST87M01 module features:
 - Ultracompact (10.6 x 12.8 mm)
 - LTE Category NB2 (Release 15) B1/B3/B5/B8/B20/28 certified
 - Industrial grade: (-40 to +85 °C)
 - Up to 23 dBm output power
 - Power saving mode (PSM) < 1.2 µA loff (Power Off) < 0.5 µA
 - Optional GNSS and Wi-Fi positioning
 - Optional ST4SIM embedded SIM
- Ignion powers compact, multiband designs with RF efficiency
- Enhanced performances with optimized board connectivity

- Reduced development time

KEY APPLICATIONS

- Smart metering
- Asset tracking and smart logistics
- Smart agriculture and environmental monitoring
- Smart lighting, smart parking, and smart city
- Condition monitoring and predictive maintenance
- Livestock and pet monitoring
- Alarms and remote healthcare

STMicroelectronics and Ignion are collaborating to provide a compact, **high performance, and easy-to-implement** solution for customers who are considering using chip antennas in their NB-IoT (and optionally GNSS and Wi-Fi positioning) enabled devices.

The **ST87M01** module is an ultralow power, certified NB-IoT and positioning module series, featuring multiband data transmission and geolocation, with full ecosystem support. The ultracompact module form factor (51-pin, in 10.6 x 12.8 mm LGA package) is a key feature of the ST87M01 in size-critical IoT applications. The ST87M01 is also able to provide long range coverage, while ensuring low power operation modes, including OTA firmware upgrade capability, and integrated internet protocols. Every ST87M01 module is fully tested and traced according to stringent ST reliability and quality practices to ensure industrial grade qualification and reliability for long-term field use and for customers needing more than 15-years product longevity.

Ignion's Virtual Antenna® technology delivers multiband, multiradio performance in an ultracompact footprint, supporting LTE-M, NB-IoT, GNSS, Wi-Fi, BLE, 5G, and more. A non-resonant element and tunable matching network transform the PCB ground plane into the radiating structure. With a design-once, deploy-globally approach, it optimizes RF design to deliver maximum efficiency, extend battery life and boost range.

Why combine Ignion's Virtual Antenna® solution with ST87M01?

This prevalidated reference design combines ST87M01 with Ignion antenna technology to enable fast, proven integration and accelerate time-to-market.

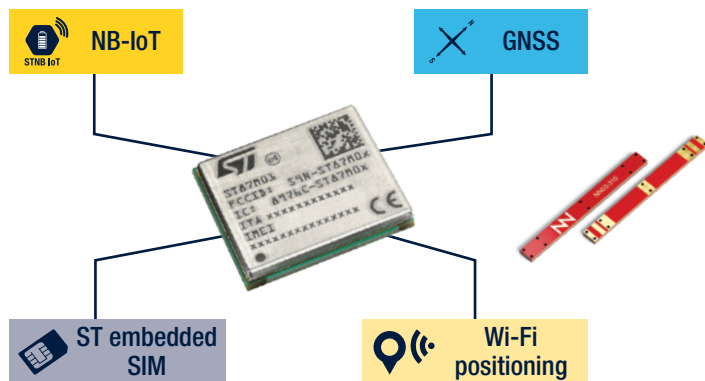
DUO mXTEND™ and TRIO mXTEND™ antenna boosters provide multiband simplicity, delivering seamless NB-IoT and GNSS connectivity in a compact solution.

It is a turnkey approach that offers a reliable certification path to streamline carrier and regional approvals, which is essential for cellular deployments.

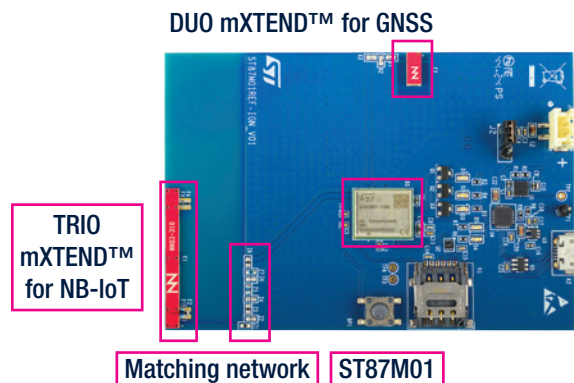
The compact, flexible design integrates ultracompact surface-mount antennas—eliminating custom designs and ensuring high RF efficiency with consistent performance across form factors.

Leveraging on the synergy between the ST87M01 turnkey connectivity module and Ignion's cutting-edge **Virtual Antenna® technology**, developers can deliver innovative, high-performance IoT solutions while minimizing design complexity and costs.

ST87M01 building blocks and Ignion's Virtual Antenna® solution



ST87M01 board designed with Ignion's solutions



ST87M01 product table

Order code	Description
ST87M01-1001	NB-IoT only module
ST87M01-1301	NB-IoT + GNSS + Wi-Fi positioning module
EVKITST87M01-2	Evaluation kit

Note: refer to the product datasheet for complete descriptions and product options



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