# AT&T Continues to Offer LTE-Cat 1 and LTE-Cat 4 Modules to Fit a Variety of Needs.

IoT*Accelerator*

AT&T and Wistron NeWeb Corporation (WNC) provide a family of low cost LTE modules to meet the needs of a broad range of Internet of Things (IoT) applications. With a model priced as low as $14.99, the LTE-Category 1 and LTE-Category 4 modules simplify and lower the cost of IoT device designs while improving device performance. Serving as an alternative to our newly-launched LTE-M modules, these modules provide higher data rates that are required by some applications (up to 10Mbs for LTE-Cat 1 and 150Mbs for LTE-Cat 4). LTE-Cat 1 and Cat 4 modules run on the AT&T 4G LTE network, allowing IoT enabled devices to transfer information quickly and more efficiently.
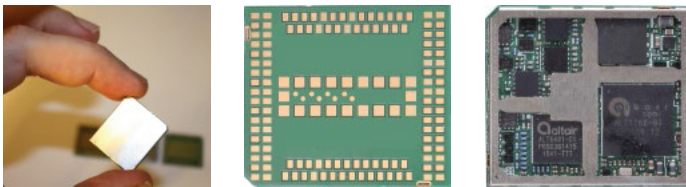

Center: WNC module in ETSI SMT2522 footprint; right: the M14A2A module

Key Points
- Cost effective path for migrating legacy 2G and 3G solutions to LTE
- Future proof with LTE technology
- Low Power Consumption
- Standardized ETSI Footprint
- Family of Modules with:
  - LTE Cat 1 to Cat 4
  - 3G Fallback Option
  - GPS Option
  - VoLTE Option

Modules backed by development know-how

With these modules WNC is able to offer device integration, engineering support and Radio Frequency (RF) design support for a complete module based product development solution. WNC is a vertically integrated supplier and is able to simplify the development process for IoT product integrators. In addition, WNC is able to supply both a family of industry leading 4G LTE modules and IoT device development, design, and manufacturing for complete turnkey solutions. All modules in the family support 3GPP Power Saving Mode (PSM), which will enable the modules to achieve multi-year operation under certain IoT device use cases. Long battery life is important for some IoT applications and allows businesses to better meet the needs of their customers. Other module variants include built-in GPS, voice and data connectivity. Modules are also available supporting both 3G and 4G networks for IoT devices needing the ability to use either technology.

Utilities   Supply chain   Vehicles   Homes   Metering   Health   Security   Equipment
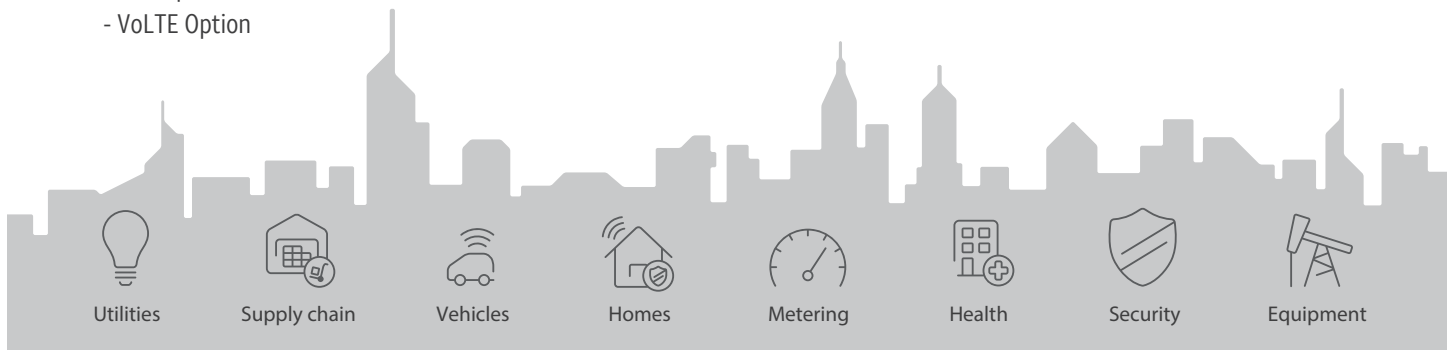
Wireless connectivity

The M14A2A is an LTE only module that operates at Category 1 which allows for a maximum downlink data rate of 10 Mbps and maximum uplink of 5 Mbps. The M14Q2 is the base platform module which also utilizes LTE Category 1 and can be purchased as an LTE only design. The M14Q2 also has the ability to support optional functions such as 3G fallback and AGPS. The M18Q2 base platform supports up to LTE Category 4 data rates of 150 Mbps DL/50 Mbps UL and similar to the M14Q2, can be obtained in an LTE only variant or can add 3G fallback and/or AGPS functionality as an option. A future firmware update for the entire family of WNC modules is planned to add voice capabilities to utilize VoLTE when operating on the 4G LTE network.

Industry standard footprint

The WNC module family utilizes an industry standard mechanical and electrical implementation as specified in "Surface Mount Technology (SMT); Requirements for Embedded Communication Modules For Machine To Machine Communications version 2.1.1" published by the European Telecommunications Standards Institute (ETSI). These requirements specify form factors for SMT based communication modules and for devices supporting services across multiple vertical markets. The ETSI SMT specification can ease the integrators' abilities to adapt modules to a common device design potentially across multiple technologies and module suppliers. This industry standard is expected to ease development for device partners as industry adoption and experience on specifications increases, thus promoting wider adoption of embedded wireless functionality by integrators. All modules in the new WNC family are based on the ETSI SMT2522 form factor. The new designs also support compatibility with future modules utilizing a smaller ETSI SMT2515 form factor which will allow an integrator to support multiple ETSI SMT form factor modules on a common device printed circuit board (PCB) layout.

Samples and Commerical Quantities Available

All modules are available as samples and commerical quantities from WNC. Development kits based on the family of modules allow integrators to expedite the prototype process and build familiarity.

The LTE Category 1 and Category 4 Modules

	M14A2A	M14Q2	M14Q2F	M14Q2G	M14Q2FG	M18Q2	M18Q2F	M18Q2G	M18Q2FG
Chipset	Altair FourGee 1160	Qualcomm MDM9207	Qualcomm MDM9207	Qualcomm MDM9207	Qualcomm MDM9207	Qualcomm MDM9207	Qualcomm MDM9207	Qualcomm MDM9207	Qualcomm MDM9207
LTE Category 1	✔	✔	✔	✔	✔	✔	✔	✔	✔
LTE Category 4						✔	✔	✔	✔
3G UMTS Capable			✔		✔		✔		✔
LTE Bands	2, 4, 12	2, 4, 12	2, 4, 5, 12	2, 4, 12	2, 4, 5, 12	2, 4, 12	2, 4, 5, 12	2, 4, 12	2, 4, 5, 12
3G Bands	N/A	N/A	2, 5	N/A	2, 5	N/A	2, 5	N/A	2, 5
UART	✔	✔	✔	✔	✔	✔	✔	✔	✔
USB2.0	✔	✔	✔	✔	✔	✔	✔	✔	✔
GPIO (Max)	14	27	27	27	27	27	27	27	27
GPS/GNSS				✔	✔			✔	✔
I2C	✔	✔	✔	✔	✔	✔	✔	✔	✔
SPI	✔	✔	✔	✔	✔	✔	✔	✔	✔
Digital Audio (PCM)	✔	✔	✔	✔	✔	✔	✔	✔	✔
VoLTE	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
SMT Footprint	ETSI SMT2522								
Module Size (LxWxH mm)	26.4 x 23.2 x 2.3								

Specifications and technical information contained herein have been provided by WNC and are subject to change prior to launch.

To contact the AT&T Internet of Things Solutions (IoTS) Device team and learn more about one or more of the WNC modules, we invite you to visit: www.att.com/iotaccelerator