MegaChips

NEWS RELEASE

FOR IMMEDIATE RELEASE

Notice of Development of the *BlueChip Wireless* Sub-GHz Band Wireless Communication LSI

MegaChips Corporation ("the Company") announces that it has developed the *BlueChip Wireless* (Model: MAB0100) sub-GHz band wireless communication LSI and that it will begin shipping samples at the end of October and mass produced units in January 2015. The Company aims to achieve sales of 2 million units in fiscal 2016. Details are as follows.

As represented by the term of *Internet of Things* (IoT) today, market needs for M2M-related products are on the increase and it is urgent need to construct communication networks. In Japan, the 920 MHz band was allocated as an ISM band, in addition to the 2.5 GHz band, on July 25, 2012 and is now widely available. The ISM band stands for "Industrial, Scientific and Medical Band" and use license is not required.

The "long communication distance" and "ultra-low power consumption" are requested in the market. SubGHz band that the *BlueChip Wireless* uses provides a longer communication range and higher diffraction properties compared to the 2.4 GHz band and thus enables communication that bypasses obstacles. As it is a newly allocated frequency band, it is not congested with communication traffic. Since the sub-GHz band is being made open to IoT on a worldwide scale, the new LSI may be used in many countries including Japan, the United States, China, Europe and the Republic of Korea.

The Company has been developed a large number of applications that make use of different sensors. In addition to its extensive expertise in the acquisition of data from different sensors and in lighting and air conditioning control that is incorporated into many different applications, the release of this product enables the Company to propose communication solutions as well. The Company will thus provide customers with new IoT solutions in the domains of smart grid, HEMS, BEMS, FEMS, AMR, AMI and others.

To support development by customers, the Company is also able to provide a communication evaluation kit, a software development kit and a communication performance verification tool so that customers may immediately carry out evaluation and development according to applications. In addition, the *BlueChip Wireless* will be offered not only in the form of standalone chips but also in the form of wireless modules through the Company's module vendor. It may thus be used in manners suited to customers' demand.

The Company will make integrated proposals running from the chip level to introduction of final applications. Prospective customers concerned about introducing wireless technologies are invited to consider adopting MegaChips' *BlueChip Wireless* sub-GHz band wireless communication LSI.

■ Main Features:
1. Sub-GHz band wireless communication LSI compliant with IEEE802.15.4g and featuring low power consumption
2. Sleep mode can be controlled with sleep clock in the built-in OSC
   A 36 MHz X'tal only for external use
3. In addition to AES-128-based security features, CSMA/CA and auto ACK functions are incorporated.
4. The built-in DC-DC converter and LDO regulator support a single voltage supply in the range of 1.8 V to 3.6 V.
5. A 1 Mbps turbo mode (under evaluation and verification) included for overseas markets, particularly for China

■ Basic Specifications:
- Frequency Band: [Japan] 916-930 MHz, [USA] 902-928 MHz
  [China] 779-787 MHz, 470-480 MHz, 400-434 MHz
  [Europe] 863-870 MHz, [Korea] 917-923.5 MHz
- PHY: IEEE802.15.4g-compliant GFSK
- MAC: IEEE802.15.4/4e (SW processing required)
- Transmission Speed: 50 kbps, 100 kbps, 200 kbps [GFSK],
  1 Mbps turbo mode [GFSK] for overseas markets
- Transmission Power: 20 mW (+ 13 dBm) typical (at chip end)
- Reception Sensitivity: [50 kbps] -105 dBm, [100 kbps] -102 dBm, [200 kbps] -99 dBm
- HW accelerator: AES-128, CSMA/CA, Auto ACK
- Host I/F: 1 x SPI [Slave] x 1
- External I/F: 3 x GPIO
- Power Supply Voltage: 1.8 V to 3.6 V (with the use of the built-in DC-DC converter)
- Package: QFN, 32 pin, 5mm x 5mm

For additional information, please visit:
- BlueChip Wireless
   http://www.megachips.co.jp/english/product/network/bluechip_wireless_e.pdf

■ Glossary
- Internet of Things (IoT):
  Computing concept that physical objects are connected to the Internet/Cloud exchange information and control each other
- Machine to Machine (M2M):
  A system in which devices connected to a computer network mutually exchange information without the manual assistance of humans and automatically implement optimal control
- Smart Grid:
  An electric power network that combines communications and controls to create various power contracts and achieve manpower cost reduction.
- Home Energy Management System (HEMS):
  A system for energy management at home to increase efficiency in power consumption and reduce CO_2 emissions
- Building Energy Management System (BEMS):
  A system for energy management in buildings and facilities to increase efficiency in power consumption and reduce CO_2 emissions

- Mansion Energy Management System (MEMS):
  A system for energy management in apartments to increase efficiency in power consumption and reduce CO_2 emissions
- Factory Energy Management System (FEMS):
  A system for energy management in factories to increase efficiency in power consumption and reduce CO_2 emissions
- Automated meter reading (AMR):
  A power meter with an automated reading function
- Advanced Meter Infrastructure (AMI):
  A power meter with functions of an automated reading a duplex communication