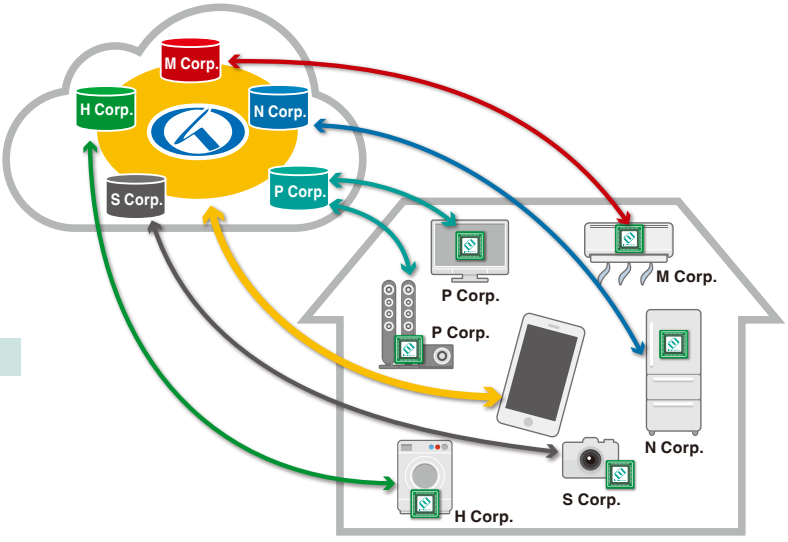
Open IoT Platform

IoT-Engine Development Kit

- All-in-one hardware and software package for rapid IoT device development
- Easily develop applications connected to the Cloud, to aggregate sensory data and control IoT-Engine devices
- Reduce application development time with the lightweight real time OS µT-Kernel 2.0 and included libraries prepared for controlling sensors and Arduino compatible I/O ports implemented on the UCT's IoT-Engine Starter Board
- IoT-Engine Development Kits supporting IoT-Engines from various manufacturers are scheduled to release in the near future



Aggregate Computing

What is IoT-Engine?

The IoT-Engine module from UCT is a MCU module with wirless PAN (Personal Area Network) to make everyday and embedded devices IoT ready.
The IoT-Engine Development Kit includes the UCT 6LoWPAN Border Router which operates as a PAN coordinator to let multiple IoT-Engine modules to directly connect to the Cloud.
The IoT-Engine Specification published from TRON forum requires an IoT-Engine module to have a standardized connector. UCT provides standardized communication API sets to let developers to efficiently develop application devices using IoT-Engine modules.
The IoT-Engine module has a capability to connect to the IoT-Aggregator which is envisioned by TRON forum, to achieve the Aggregate Computing which is a next generation system that connects Cloud services and IoT-Engines.

What is 6LoWPAN?

6LoWPAN is an acronym for "IPv6 over Low-Power Wireless Personal Area Network.
It is a set of communication specifications to use IPv6 over a low power wireless network considered suitable for IoT devices.

RX231 IoT-Engine Arduino Evaluation Kit

Hardware

- RX231 IoT-Engine
  - MPU: RX231 by Renesas Electronics
- RF Module
  - Conforms with the Japan (920 MHz) and IEEE 802.15.4g
  - Comes with the UCT 6LoWPAN Protocol Stack
- IoT-Engine Evaluation Board
  - Equipped with Arduino I/F, USB serial, LED, SW, etc.
  - A set of sensors for Arduino (Gesture (I2C), water sensor (GPIO), sound sensor (ADC) and LED (GPIO)) is included.
- 6LoWPAN Border Router
  - Connects WLAN and WPAN seamlessly

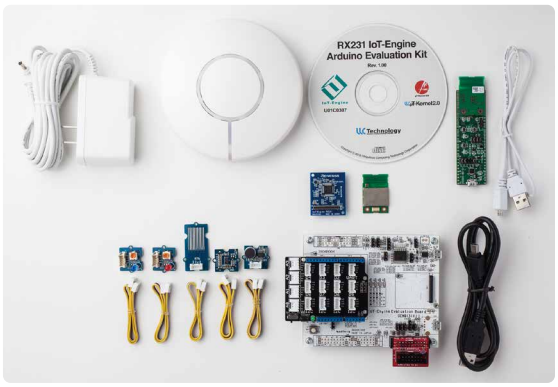
Software

- UCT µT-Kernel2.0 Lightweight task-based RTOS
- CS+ Configuration File
- UCT WPAN Communication API Libraries
  - UDP and CoAP API sets
  - Sample software includes a CoAP client and a server
- Packet Sniffer Tool
- Peripheral I/O drivers for the IoT-Engine Starter Board
  (Conforms with the T-Engine Device Driver Interface Library Specification)
  - Arduino compatible I/F driver, serial communication driver
  - I2C driver, A/D converter driver and GPIO driver

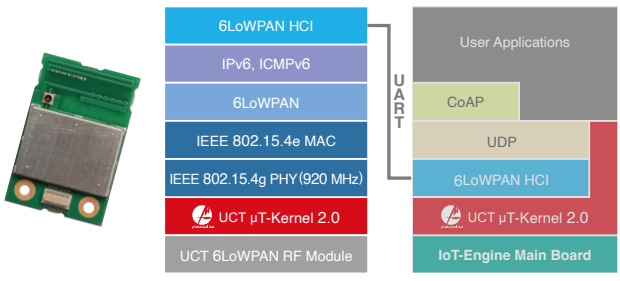
- Sample Software to Demonstrate the Cloud Connection
- Software Development License for IoT-Engine
  - Includes 3 months free technical support. Additional 6 months technical support can be puchased.

Documents

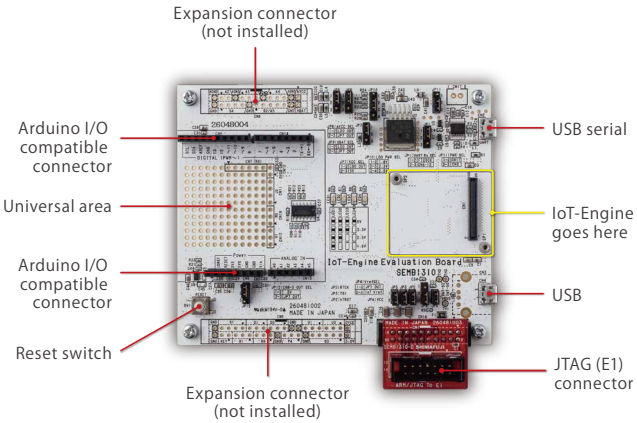
For the development environment, you need to purchase Renesas Electronics CS+ and E1 emulator.



RX231 IoT-Engine Arduino Evaluation Kit



Software stacks of UCT 6LoWPAN for IoT-Engine



IoT-Engine Evaluation Board

For questions or more details on IoT-Engine technologies and our consulting services to build a Cloud platform for the Aggregate Computing, please feel free to contact us.

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