SECURE WIRELESS CONNECTIVITY SOLUTIONS

PORTFOLIO & ROADMAP

AUGUST.2016

NXP value proposition for IoT

LOW POWER

- Ultra-efficient dynamic power
- Ultra-low static power consumption with full retention
- Low-power peripherals
- Tools for low power design, e.g. the power estimation, power profiler, and consumption calculator

SECURE

- Multiple levels of scalable security for ultimate flexibility and protection
- Ensuring communications, software and physical system are protected from threats

CONNECTIVITY

- State-of-the-art RF performance
- Choice of connectivity to fit application
- Interoperable connectivity
- Integrated RF transceiver supporting: Bluetooth Smart 4.2, IEEE802.15.4, Thread, ZigBee

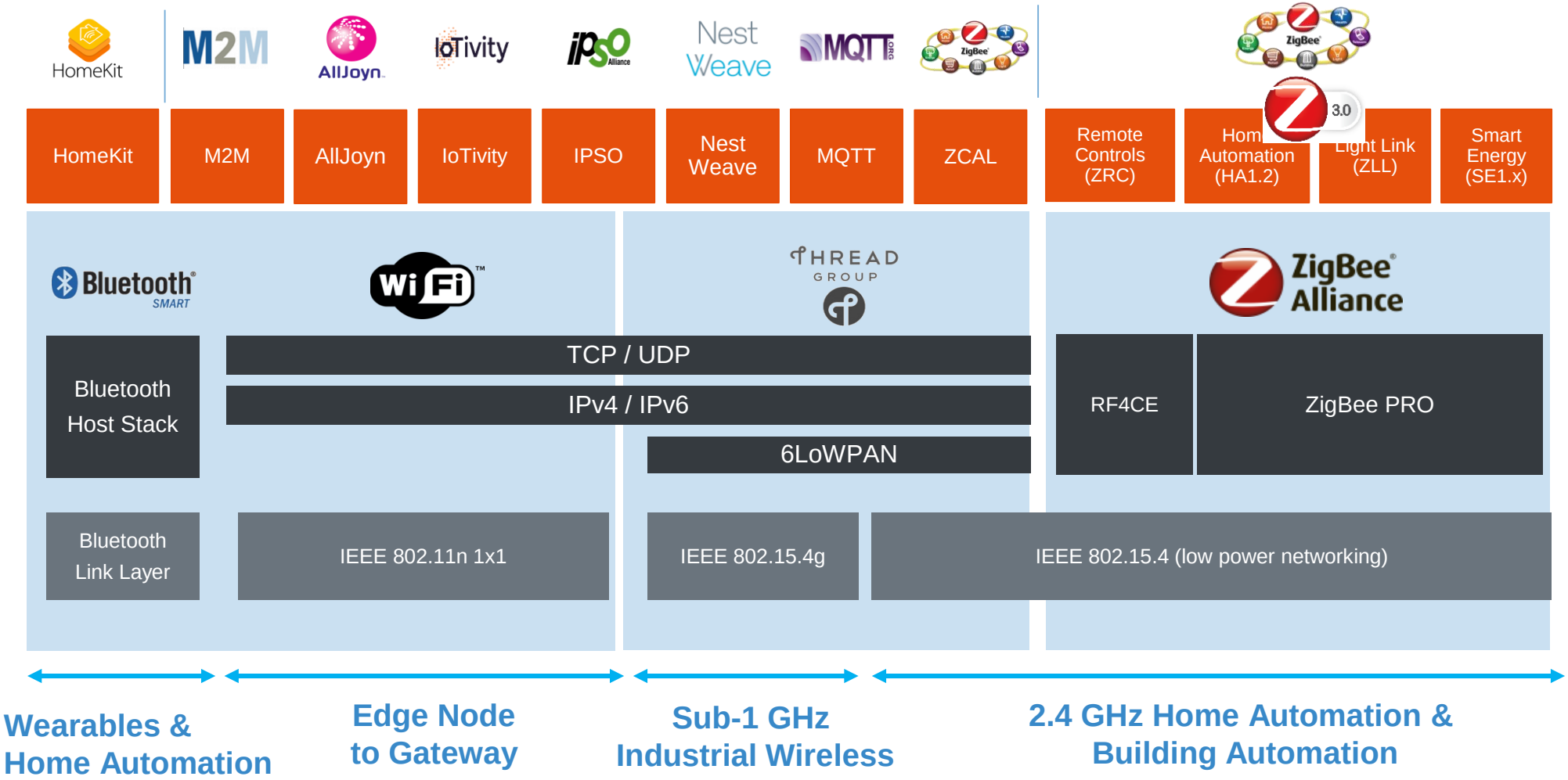
EASY TO USE

- 'Tap-N-Pair' NFC Commissioning for best-in-class consumer experience
- Bring voice detection & triggering features to wide range of products

QUICK TO MARKET

- Complete kits simplify design and lower risk – get to final product design quickly
- Full ecosystem including application software and cloud connectivity

Connectivity Landscape




ZigBee®
Sub-1GHz
Low Power, Robustness, Range
Products

ZigBee 3.0 Better Together

JN5169

Low power, High Performance 802.15.4 wireless microcontroller

32b RISC @32MHz
32kB RAM
512kB flash
Tx Power +10dBm
Rx Sensitivity -96dBm
Tx 23.3mA, Rx 14.7mA
QFN40 6x6mm
Tamb -40°C / +125°C

Development Kit

HA and lighting integrating **easy and secure NFC** commissioning

Modules

NXP Modules

Target Applications

HBA, Lighting., Smart meters
Energy metering

Availability

Now

JN5174/78/79

Low power, High Performance 802.15.4 wireless microcontroller

Cortex M3 @32MHz
32kB RAM,
160/256/512kB flash
Tx Power +10dBm
Rx Sensitivity -96dBm
Tx 22.5mA, Rx 14.8mA
QFN40 6x6mm
Tamb -40°C / +125°C

Development Kit

HA and lighting integrating **easy and secure NFC commissioning**

Modules

NXP Modules

Target Applications

HBA and Lighting

Availability

Sampling Now
Full Release June 2016

THREAD

KW2xD

High Performance 802.15.4 wireless microcontroller

Cortex M4 @50MHz
64kB RAM,
512kB flash
Tx Power +8dBm
Rx Sensitivity -102dBm
Dual-PAN, Antenna Div.
Tx 19mA, Rx 17mA
LGA 8x8mm
Tamb -40°C / +85°C

Development Kit

FRDM, USB Dev Boards

Modules

From Partners

Target Applications

Home and Building Automation

Availability

Now

KW21Z

Very Low power, High Performance 802.15.4 wireless microcontroller

Cortex M0+ @48MHz
128kB RAM,
512kB flash
Tx Power +4dBm
Rx Sensitivity -101dBm
Dual-PAN, Antenna Div.
Tx 6.5mA, Rx 6.5mA
QFN 7x7mm, WLCSP
Tamb -40°C / +105°C

Development Kit

FRDM, USB Dev Boards

Modules

From Partners

Target Applications

Home and Building Automation

Availability

Sampling April 2016
Full Release Sept 2016

Bluetooth SMART

KW31Z

Very Low power, High Performance BLE 4.2 wireless microcontroller

Cortex M0+ @48MHz
128kB RAM,
512kB flash
Tx Power +4dBm
Rx Sensitivity -96dBm
TRNG
Buck Boost DC/DC from 0.9V to 4.2V
Tx 6,5mA,Rx 6,5mA,
QFN 7x7mm, **WLCSP**
Tamb -40°C / +105°C

Development Kit

FRDM, USB Dev Boards

Modules

From Partners

Target Applications

Secure BLE applications, Home Automation

Availability

Sampling April 2016
Full Release Sept 2016

QN9080

Ultra Low Power, High Performance BLE 4.2 wireless microcontroller

Cortex M4 **with FPU**
128kB RAM,256kB ROM
512kB flash
Tx Power +2dBm
Rx S -95dBm w/o DC-DC
Rx S -93dBm w/ DC-DC
Tx 3.4mA, Rx 3.6mA,
ADC: 14 ENOB @ 32 kHz
Fusion Sensor processor
QFN 6x6mm, **WLCSP**
Tamb -40°C / +105°C

Development Kit

EVB, miniDK

Modules

To be defined

Target Applications

Watches and wristband

Availability

Q1 2017

ZigBee THREAD Bluetooth SMART

KW41Z

Very Low power, High Perfs '15.4 / BLE 4.2 wireless microcontroller

Cortex M0+ @48MHz
128kB RAM,
512kB flash
Tx Power +4dBm
TH Rx Sens -101dBm
BLE Rx Sens -96dBm
Dual-PAN, Antenna Div.
Tx 6.5mA, Rx 6.5mA,
QFN 7x7mm, **WLCSP**
Tamb -40°C / +105°C

Development Kit

FRDM, USB Dev Boards

Modules

From Partners

Target Applications

Home and Building Automation

Availability

Sampling April 2016
Full Release Sept 2016

JN5180 / 80S

Ultro Low power, High Perfs '15.4 / BLE 5.0 wireless microcontroller

Cortex M4 @48MHz
Integrated NFC
152kB RAM,
640kB flash
Tx Power +10dBm
TH Rx Sens -101dBm
BLE Rx Sens -96dBm
Dual-PAN, Antenna Div.
Tx 17mA, Rx 3.5mA,
QFN 6x6mm, 4x4mm
Tamb -40°C / +125°C

Development Kit

HA &Lighting dev Kit

Modules

NXP modules

Target Applications

Home and Building Automation

Availability

Sampling Q1 /Q3 2017
Full Release Q4 2017

NFC

NXP NFC I²C TAG

NTAG I²C *plus* connected NFC tag solution by NXP

ISO/IEC 14443-2/3, NFC forum compliant - Type 2 Tag
888B EEPROM or 1904B EEPROM
Access Protection via RF : WRITE ONLY per 16 Btyes
Pass through mode: 64B SRAM buffer to transfer data
Signal output : To detect RF field or synchronise data
Energy harvesting : To power external components
SOT902 (leadless) – TSSOP8 (8pin)

PN7120

Best plug'n play full NFC solution – easy integration into any OS environment

ISO15693 compliant -longer read range than ISO14443
Reading distance up to 70mm
MIFARE Classic security (CRYPTO1 HW)
Host protocol : NCI 1.0
Host Software : Android driver and Linux driver
Host interface :I²C
VFBGA49

2.4 GHz WMCUs

Product Features

KWXX

KW Platforms and Protocols

Standard Key Features Timers, SPI, UART, I2C, GPIO		CPU	Memory	Supported Frequency Band	Supported Protocols					Radio Performance			
			Flash / SRAM		BLE	Thread	ZigBee Pro	802.15.4 MAC	SMAC	Sensitivity	Transmit Power	Receive Current	Transmit Current
KW41Z	Bluetooth® Low Energy & IEEE® 802.15.4	Cortex-M0+	256-512 KB / 64-128 KB	2.4 GHz	✓	✓	✓	✓	✓	-96 dBm (BLE) -102 dBm (802.15.4)	Up to +4 dBm	6.2 mA	6.0 mA
KW40Z	Bluetooth Low Energy & IEEE 802.15.4	Cortex-M0+	160 KB / 20 KB	2.4 GHz	✓	✓	✓	✓	✓	-91 dBm (BLE) -102 dBm (802.15.4)	Up to +5 dBm	6.5 mA	8.4 mA
KW31Z	Bluetooth Low Energy	Cortex-M0+	256-512 KB / 64-128 KB	2.4 GHz	✓					-96 dBm	Up to +4 dBm	6.2 mA	6.0 mA
KW30Z	Bluetooth Low Energy	Cortex-M0+	160 KB / 20 KB	2.4 GHz	✓					-91 dBm	Up to +5 dBm	6.5 mA	8.4 mA
KW21Z	IEEE 802.15.4	Cortex-M0+	256-512 KB / 64-128 KB	2.4 GHz		✓	✓	✓	✓	-102 dBm	Up to +4 dBm	6.2 mA	6.0 mA
KW20Z	IEEE 802.15.4	Cortex-M0+	160 KB / 20 KB	2.4 GHz		✓	✓	✓	✓	-102 dBm	Up to +5 dBm	6.5 mA	8.4 mA
KW2xD	IEEE 802.15.4	Cortex-M4	256–512 KB / 32–64 KB	2.4 GHz		✓	✓	✓	✓	-102 dBm	Up to +8 dBm	19.5 mA	18 mA
KW01Z	Sub-1 GHz	Cortex-M0+	128 KB / 16 KB	315 MHz, 433 MHz, 470 MHz, 868 MHz, 915 MHz, 928 MHz, and 955 MHz				✓	✓	-120 dBm	Up to +17 dBm	16 mA	16 mA

http://www.nxp.com/products/arm-processors/kinetis-cortex-m/w-series:KINETIS_W_SERIES?cof=0&am=0

Kinetis KW41Z/31Z/21Z

Core/Memory/System

- Cortex-M0+ running up to 48 MHz
- **Up to 512 kB Flash, Up to 128 kB SRAM**
- Four independently programmable DMA controller channels

2.4 GHz Radio Transceiver

- Support for **BLE v4.2,** Generic FSK (250/500 kbps, 1Mbps)**,** 802.15.4-2011
- **-95 dBm in BLE mode**, -100 dBm in 802.15.4 mode
- **-25 to +3.5 dBm programmable output power**
- **Increased coexistence performance**
- **6.5 mA Rx & 6.5 Tx (0dBm)** current target (DC-DC enabled)
- <2uA low power current
- **Integrated balun (~9% board area savings)**

Communications/HMI/Timers

- 2xSPI, LP-UART, 2xI2C, CMT, GPIO with IRQ capability (KBI)
- Hardware Touch Sensing Inputs (TSI)
- 3xFlexTimer (TPM) with PWM & quadrature decode support
- Low Power (LPTMR), Programmable Interrupt (PIT) and RTC timers

Analog & Security

- 16-bit ADC with integrated temperature sensor and battery monitor
- 12-bit DAC and 6-bit High-speed Comparator
- AES Accelerator and True Random Number Generator

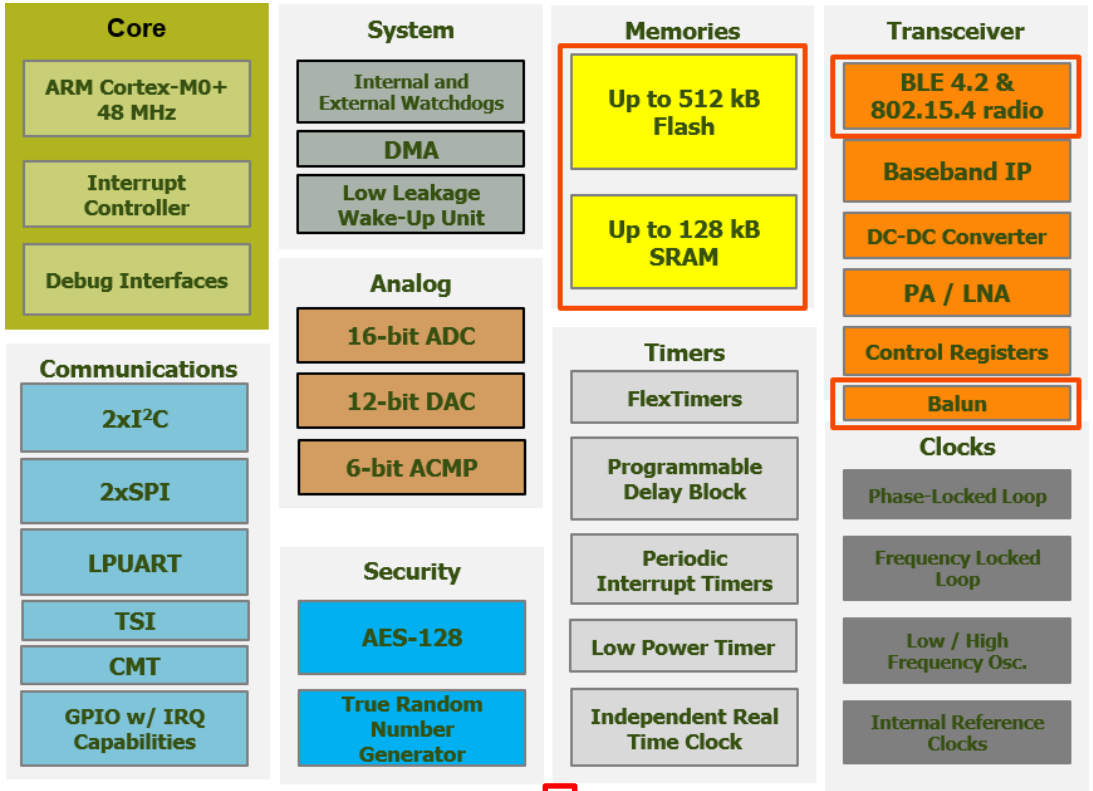
Integrated DC/DC Converter

- Normal: 1.71V to 3.6V
- Buck : 2.1V to 4.2V for coin cell operation
- Boost : 0.9V to 1.795V for single alkaline battery operation

Unique Identifiers

- 80-bit device ID programmed at factory
- 40-bit unique number can be used for Bluetooth Low Energy or IEEE 802.15.4 MAC Address

-40ºC to +105º



Differences from KW40Z/30Z/20Z

Device	Memory	Protocol	Package
MKW21Z512VHT4/R **MKW21Z256VHT4/R**	512K Flash, 128K RAM 256K Flash, 64K SRAM	802.15.4	7x7 48-pin Laminate QFN
MKW31Z512VHT4/R **MKW31Z256VHT4/R**	512K Flash, 128K RAM 256K Flash, 64K SRAM	BLE, GFSK	7x7 48-pin Laminate QFN
MKW41Z512VHT4/R **MKW41Z256VHT4/R**	512K Flash, 128K RAM 256K Flash, 64K SRAM	BLE, GFSK & 802.15.4	7x7 48-pin Laminate QFN

Features	Description
Software and Protocol Stacks	Bluetooth Low Energy Host Stack & Profiles, GFSK Thread Stack BLE + Thread (Concurrent/time slice operation) IEEE 802.15.4 MAC, SMAC w/ Connectivity Test and Wireless UART KSDK, IAR, FreeRTOS
Availability (subject to change)	Full Market Launch– Oct'16 WLCSP Package in progress

Kinetis KW40Z/30Z/20Z

Core/Memory/System
- Cortex-M0+ running up to 48 MHz
- 160 kB Flash, 20 kB SRAM
- Four independently programmable DMA controller channels

2.4 GHz Radio Transceiver
- Support for BLE v4.1, 802.15.4-2011
- -91 dBm in BLE mode, -102 dBm in 802.15.4 mode
- -20 to +5 dBm programmable output power
- 6.5 mA Rx & 8.4 mA Tx (0dBm) current target (DC-DC enabled)
- <2uA low power current

Communications/HMI/Timers
- 2xSPI, LP-UART, 2xI2C, GPIO with IRQ capability (KBI)
- Carrier Modulated Timer (CMT)
- Hardware Capacitive Touch Sensing Interface (TSI)
- 3xFlexTimer (TPM) with PWM & quadrature decode support
- Low Power (LPTMR), Programmable Interrupt (PIT) and RTC timers

Analog & Security
- 16-bit ADC with integrated temperature sensor and battery monitor
- 12-bit DAC and 6-bit High-speed Comparator
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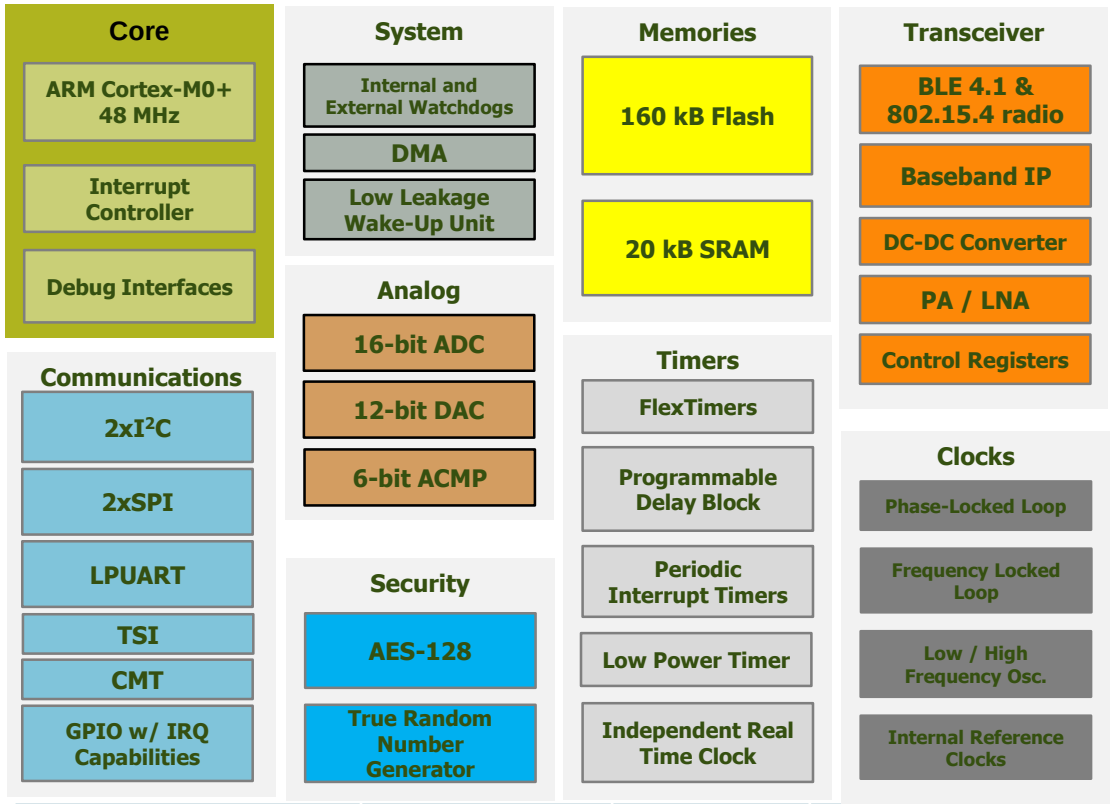
- Boost : 0.9V to 1.795V for single alkaline battery operation

Unique Identifiers
- 80-bit device ID programmed at factory
- 40-bit unique number can be used for Bluetooth Low Energy or IEEE 802.15.4 MAC Address

-40ºC to +85ºC



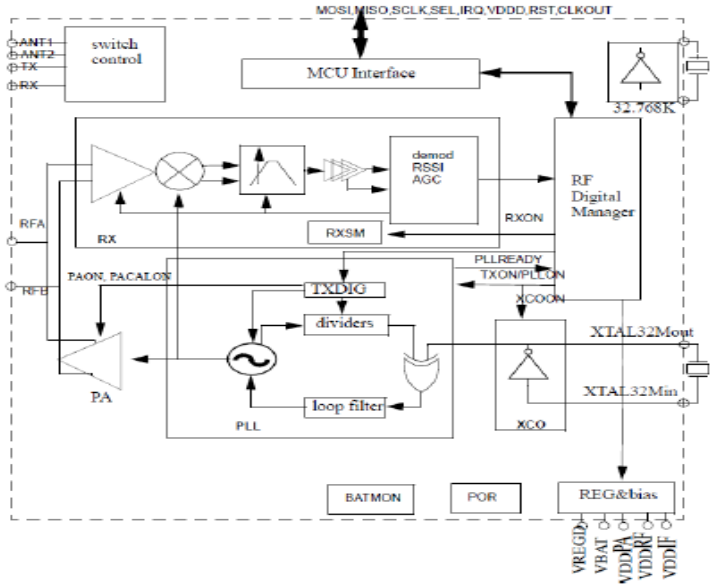
Device	Memory	Protocol	Package
MKW20Z160VHT4/R	160K Flash, 20K RAM	802.15.4	7x7 48-pin Laminate QFN
MKW30Z160VHM4/R	160K Flash, 20K RAM	BLE	5x5 32-pin Laminate QFN
MKW40Z160VHT4/R	160K Flash, 20K RAM	BLE & 802.15.4	7x7 48-pin Laminate QFN

Features	Description
Software and Protocol Stacks	Bluetooth Low Energy Host Stack & Profiles IEEE 802.15.4 MAC SMAC w/ Connectivity Test and Wireless UART KSDK, IAR, FreeRTOS
Availability	Available now

MCR20A High-Performance 802.15.4 Transceiver

2.4 GHz Radio Transceiver Features

- High performance 2.4 GHz IEEE 802.15.4 RF transceiver
- Support for MBAN frequencies (2.36-2.4 GHz)
- Packet processor for hardware acceleration
- Supports single ended and diversity antenna options
- Dual-PAN support
- -30 to + 8 dBm power output
- Support for external PA/LNA (FEM)
- -102 dBm sensitivity
- Tx 17mA @ 0dBm
- Rx 15mA LPPS mode, 19mA full Rx
- AES Hardware encryption/decryption
- True Random Number Generator
- SPI Interface (memory mapped)
- 6 GPIO



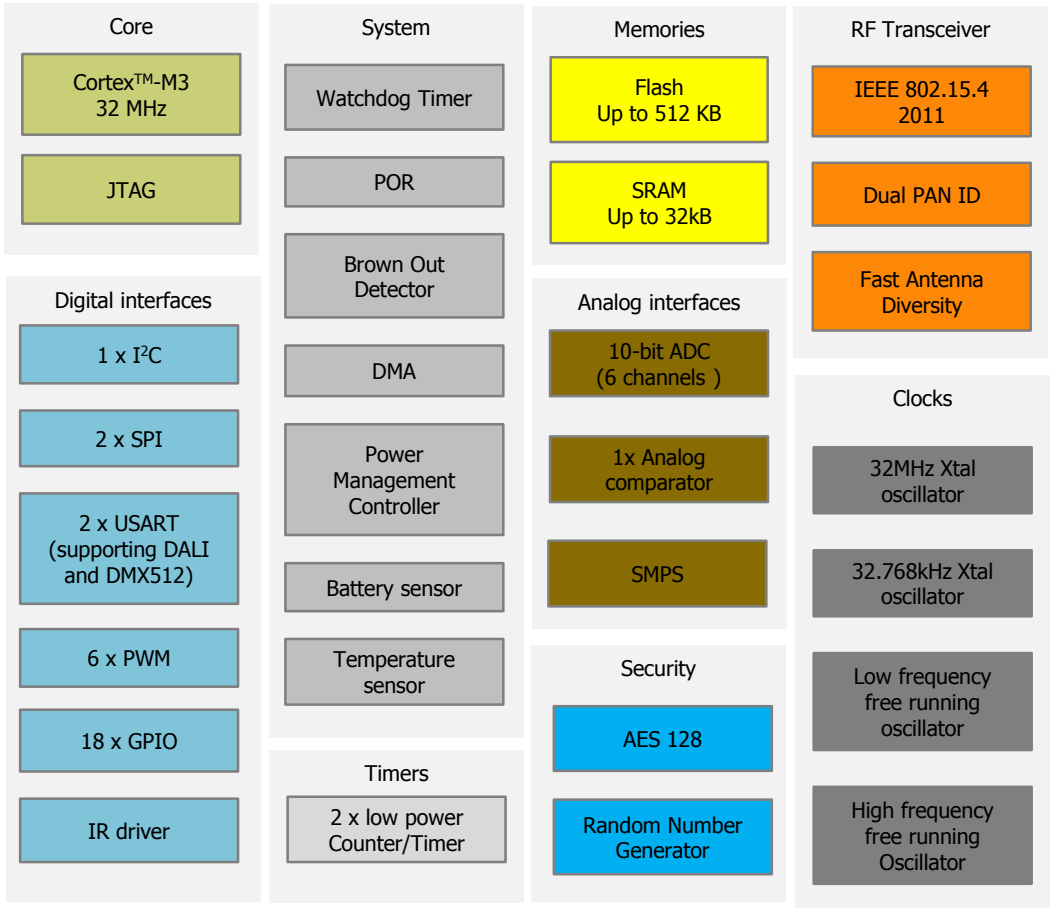
System Features

- -40°C to 105°C
- Operating range: 1.8 V to 3.6 V, -40C to +105C
- 5x5 32-pin QFN

Ordering Part Number: **MCR20AVHM**

JN517x: Wireless MCU

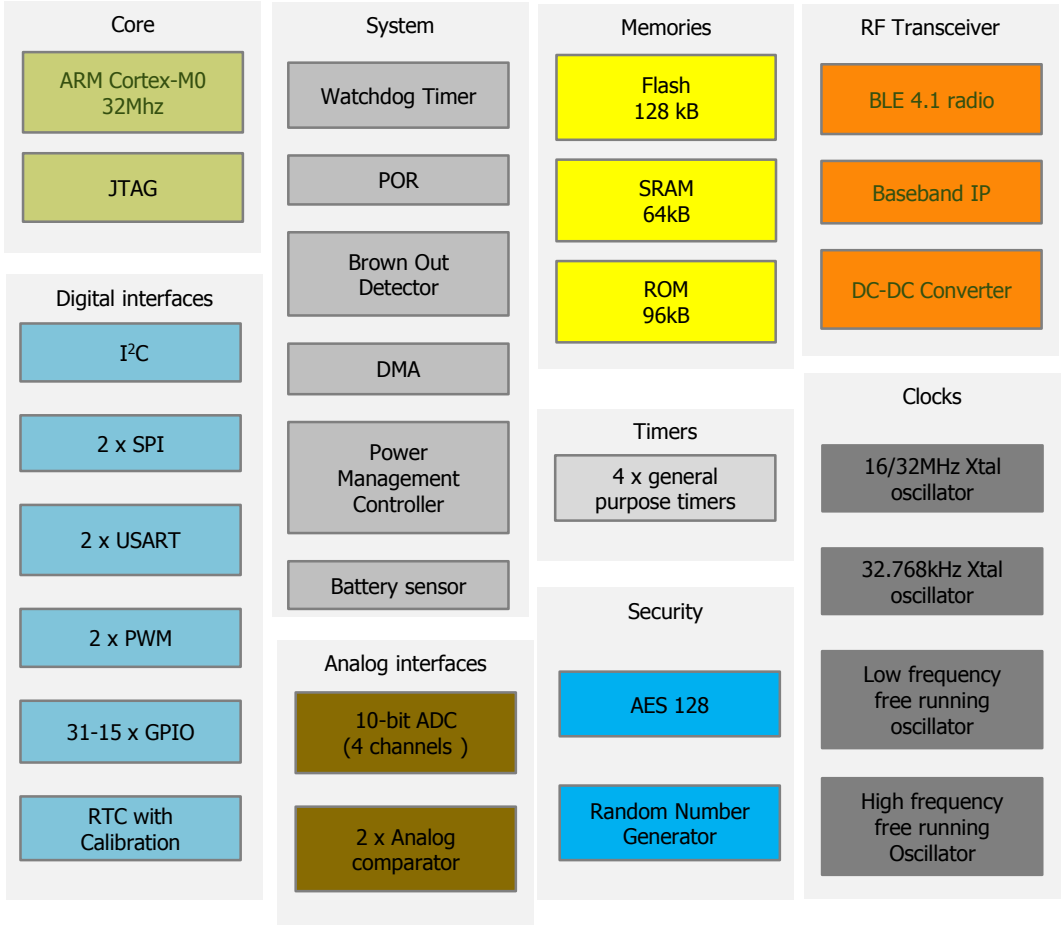
- **CPU**
  - 32 MHz ARM Cortex-M3 core
  - Up to 512 KB Flash & up to 32 KB RAM
- **2.4 GHz radio transceiver**
  - IEEE-802.15.4 2011 compliant
  - Dual PAN support
  - Antenna diversity
  - +10 dBm power amplifier
  - -96 dBm RX sensitivity
  - Peak typical current:
    - 22.5mA TX @ +10dBm, 14mA @ +3dBm
    - 14.8mA RX
- **Security**
  - Crypto engine: AES 128-256, RNG
- **System**
  - Ambient temperature: -40°C to +125°C
  - HVQFN40 6x6 mm



QN90XX

QN902x

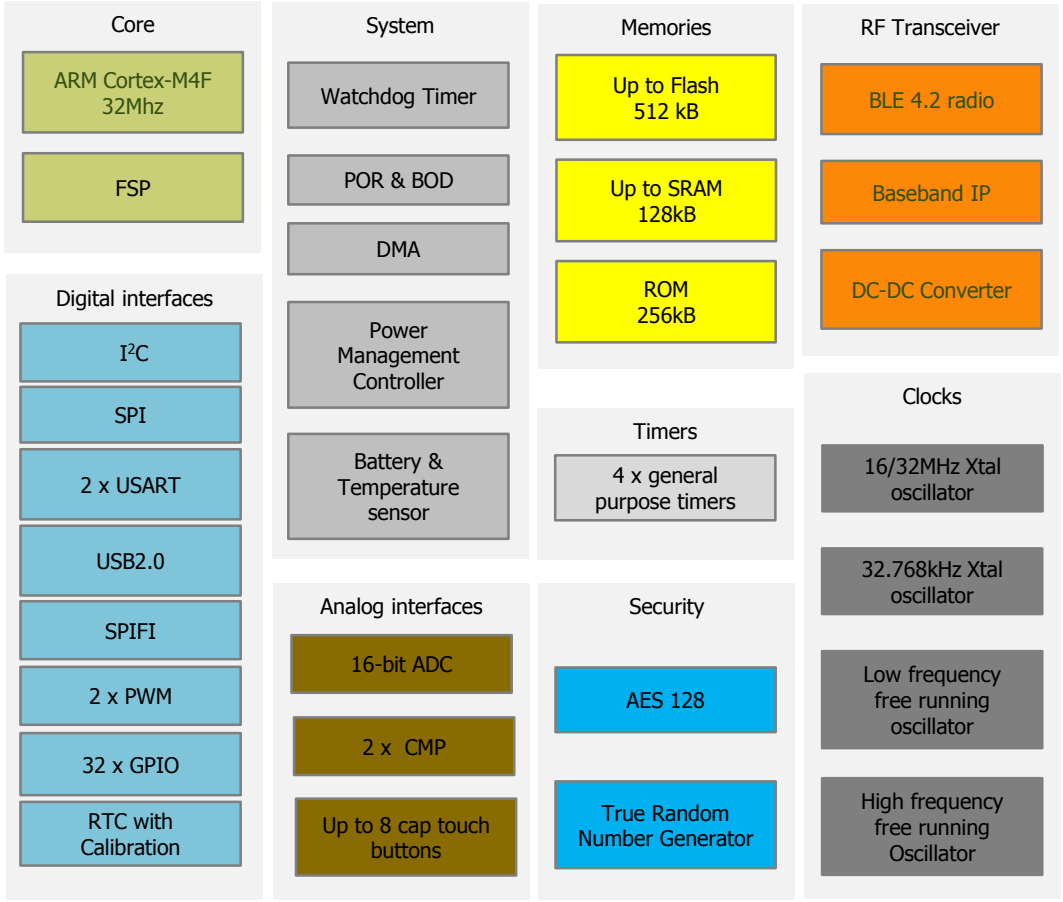
- **CPU**
  - 32 MHz ARM Cortex-M0 core
  - 128 kB Flash & 64 kB RAM & 96kB ROM
- **2.4 GHz radio transceiver**
  - Bluetooth 4.0 LE single mode
  - Support master and slave roles
  - Master can support up to 8 simultaneous links
  - Programmable output power : -20 to +4 dBm
  - -95 dBm RX sensitivity (Bluetooth Smart)
  - Peak typical current w/ MCU: 8.8mA TX @+0dBm and 9.25mA RX with DC/DC activated
- **Security**
  - Crypto engine: AES-128, RNG
- **System**
  - DC/DC working from 2.4V to 3.6V
  - Ambient temperature: -40°C to +85°C
  - QFN48 6x6mm, QFN32 5x5mm



QN9080

2017

- **CPU**
  - 32-bit ARM Coretex-M4 with FPU
  - Up to 512 kB Flash & 128 kB RAM, 256 kB ROM
- **2.4 GHz radio transceiver**
  - Bluetooth 4.2 LE single mode
  - Programmable output power : -20 to to +2 dBm
  - -95 dBm RX sensitivity (Bluetooth Smart)
  - Peak typical current: 3.4mA TX @+0dBm and 3.6mA RX with DC/DC activated
  - 1 uA sleep current with RAM/register retention
- **Security**
  - Crypto engine: AES-128, TRNG
- **System**
  - Fusion Sense Processor (FSP), for high efficiency and low power
  - DC/DC working from 1.8V to 3.6V
  - Ambient temperature: -40°C to +85°C
  - QFN48 6x6mm, 3.2x3.2 WLCSP



Sub-GHz MCUs

Product Features

Sub-GHz Wireless MCUs for Industrial / IoT applications

Sub-1GHz
Low Power, Robustness, Range

M-Bus wireless | SIGFOX One network A billion dreams | IEEE 802.15.4 | ZigBee

KW01Z

High Performance Sub-GHz wireless microcontroller

Cortex M0+ @48MHz
16kB RAM
128kB flash
290-1020 MHz
Tx Power +17dBm
Rx Sens* -120/-112 dBm
Tx 20/33 mA @0/10dBm
Rx 16mA / **Listen Mode**
16-bit ADC
Supply Volt. : 1.8 ÷ 3.6
QFN60 8x8mm

Connectivity Stack
802.15.4g/e, **SMAC**, WM-Bus (from AMIHO)

Development Kit
FRDM, USB Dev Boards

Modules
From Partners

Target Applications
Home and Building Automation, Smart Meters

OL2385

Low Power, High Performance Sub-GHz TRX w/ MCU

16b RISC @8MHz
7.25kB RAM
32kB flash
158-960 **MHz**
Tx Power +14dBm
Rx Sens* -124/-123 dBm
Tx 9/29mA @0/14dBm
Rx 11mA
10-bit ADC
Supply Volt. : 1.9 ÷ 5.5
QFN48 7x7mm

Connectivity Stack
SigFox, WM-Bus, ZigBee SE, 802.15.4g

Development Kit
Dev Board

Modules
From Partners

Target Applications
Home and Building Automation, Smart Meters/Grid, M2M

OL2361

Low Power, High Performance Sub-GHz TX w/ MCU

16b RISC @8MHz
2kB RAM
16kB flash
310-915 MHz
Tx Power +14dBm
Tx 29 mA @14dBm
No Rx
10-bit ADC
Supply Volt. : 2 ÷ 3.6
QFN24 4x4mm

Connectivity Stack
SigFox

Development Kit
Dev Board

Modules
From Partners

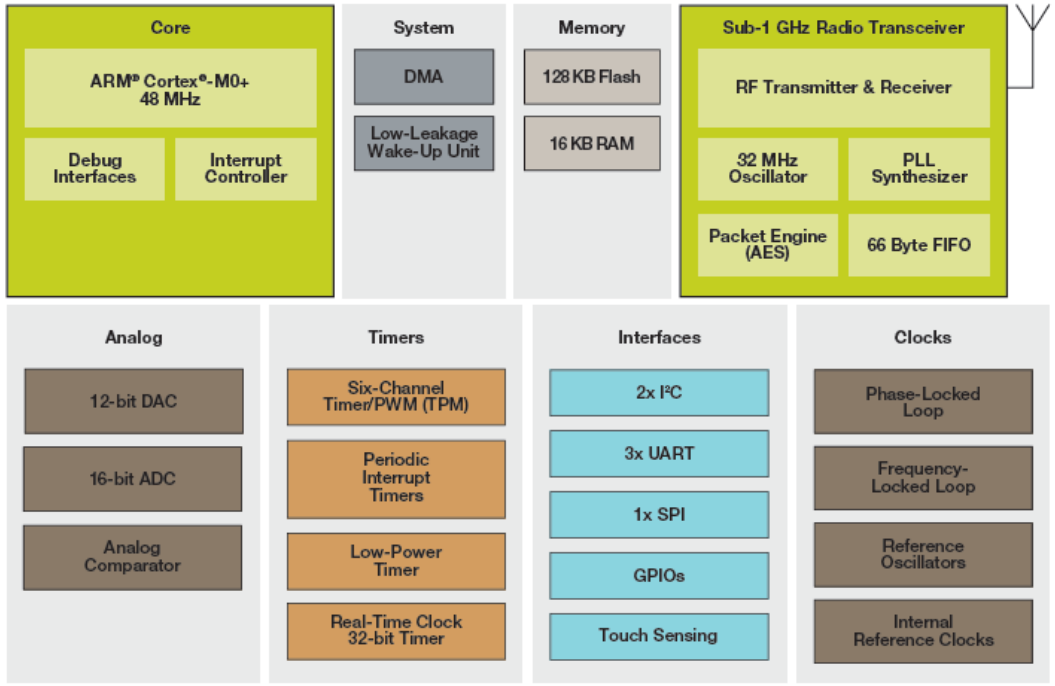
Target Applications
M2M / IoT, SigFox

NXP

KW01

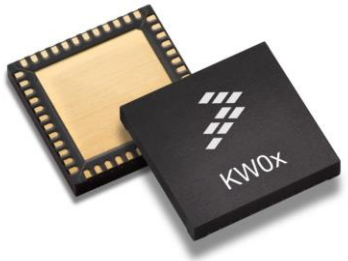
KW01 Block Diagram |

Cortex-M0+ w/ 128KB Flash
Integrated Sub1-GHz Radio



Orderable Part

Part Number	Description
MKW01Z128CHN	• 290–1020 MHz smart radio • 128 KB flash/16 KB RAM • 60 MAPLGA 8 mm x 8 mm • Bulk tray



CPU

- 32-bit ARM® Cortex™-M0+ 48MHz Core
- 128KB Flash and 16KB SRAM

Radio Transceiver, Sub 1-GHz

- Supports 290-340MHz, 424-510MHz, and 862-1020MHz frequency bands
- FSK, GFSK, MSK, GMSK and OOK modulations up to 600kbps
- Up to -120dBm RX sensitivity @ 1.2kbps
- -18 to +17dBm TX output power in steps of 1dBm

Low Power for Battery Operated Devices

- Typical consumption
  - LISTEN mode
  - 0.1 µA sleep
  - 16 mA RX peak
  - 20 mA TX peak at 0 dBm, 33 mA at +10 dBm

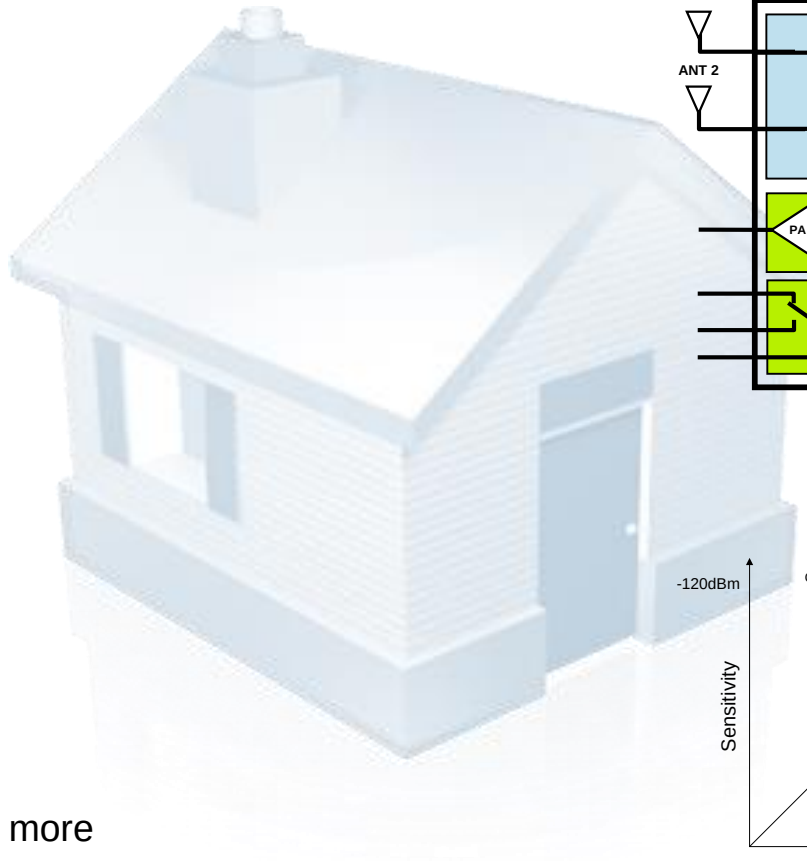
System

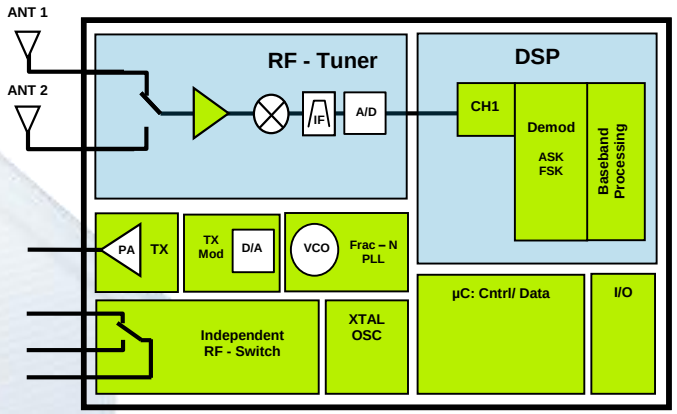
- 16-bit ADC, Capacitive Touch Sensing, I2C, UART, SPI, Timers
- Operating Range: 1.8V to 3.6V, -40C to +85C

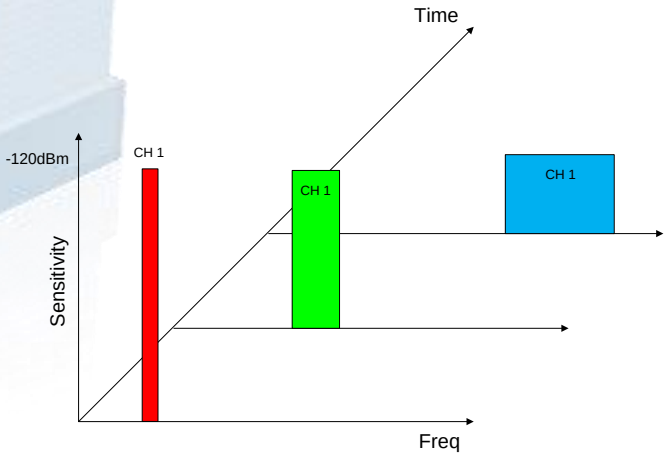
OL23XX

ASK, FSK and 4FSK Multi Band RF Transceiver – OL2385

- One channel single sub GHz IC for all markets (160 - 960 MHz)
- -124 dBm FSK sensitivity @ 10 kHz BW
- 2 antenna inputs
- Ultra low power in receive mode
  - 11 mA
- Independent RF switch (TX/RX or RX/RX)
- Supply Voltage: 1.9 V – 5.5 V
- Up to +14 dBm output power
- 26 Channel Filter BW Options (4-360 kHz)
  - Japanese (12.5 kHz) ARIB compliant
- Smart polling
- 16-bit RISC integrated µC
  - 32 kB FLASH for program code, 7.25 kB RAM
- HVQFN48 package
- Temperature Range: -40 °C to + 85 °C
- Excellent Phase Noise
- Supported Standards:
  WMBus2013, 802.15.4g, T108, Sub-GHz ZigBee, SigFox & more

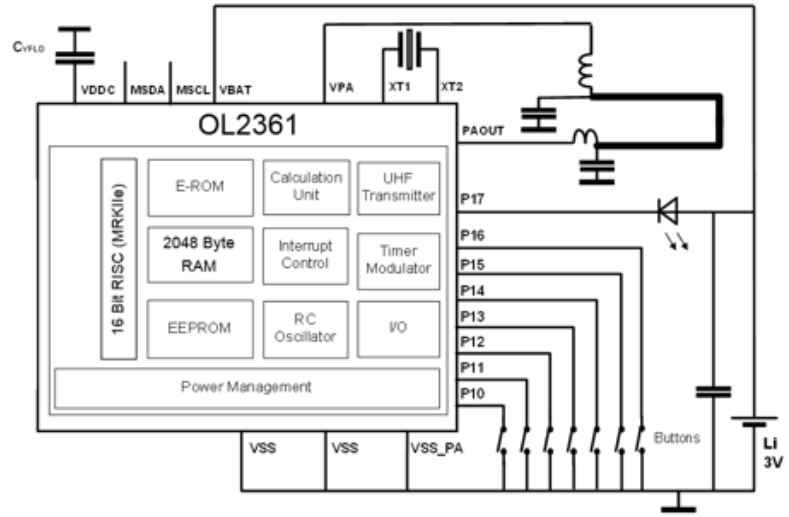






RF Transmitter – OL2361 (TX only)

- Single-chip with on-chip multi-channel UHF Transmitter
- Carrier frequency 310 MHz – 915 MHz
- Multi Channel Fractional-N PLL
- One reference frequency (XTAL) for all bands
- Programmable FSK/ASK/OOK modulation characteristics
- Improved programmable and stabilized output power
- Low power consumption
  - TRANSMIT 868 MHz: 14 mA @10 dBm
    29 mA @14 dBm
- 16 Bit RISC Architecture
  - 16 K Byte E-ROM (FLASH), 2 K Byte RAM
  - 2048 Byte EEPROM for extended data storage
- Low power consumption
  - POWER DOWN: 0.5 µA @ 3V
- Temperature Sensor
- Temperature Range -40°C to +85°C
- Single Lithium cell operation, 1.8V to 3.6V
- 24-pin extremely compact HVQFN package (4x4mm)

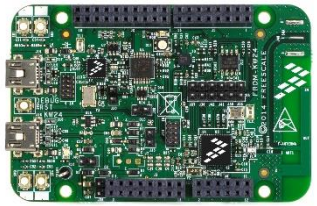



Evaluation
Kits & Boards
SECURE CONNECTIONS
FOR A SMARTER WORLD

Wireless Connectivity Portfolio - HW

Dev boards

FRDM-Shield	FRDM-Board	Board & Shield	Board & Shield
FRDM-MCR20	FRDM-KW24D	FRDM-KW40Z	FRDM-KW019032
	USB-KW24D	USB-KW40Z	USB-KW019032

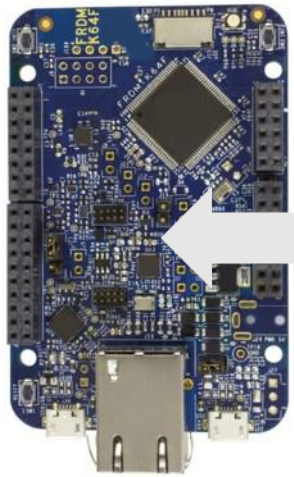


Part no

MCR20AVHM	MKW21D256VHA5 MKW21D512VHA5 MKW22D512VHA5 MKW24D512VHA5	MKW40Z160VHT4 MKW30Z160VHM4 MKW20Z160VHT4	MKW01Z128CHN

Target Development Systems: Gateways/Border Routers

K64F
RTOS Border Router
(PN512)



KW2x

i.MX6UL
Linux Gateway/Border Router
(PN7120)

K64F Freedom Board

- 120 MHz Cortex-M4F
- Up to 1 MB Flash, up to 258 KB RAM
- Integrated Ethernet
- Thread and ZigBee
- Launching Oct. 6

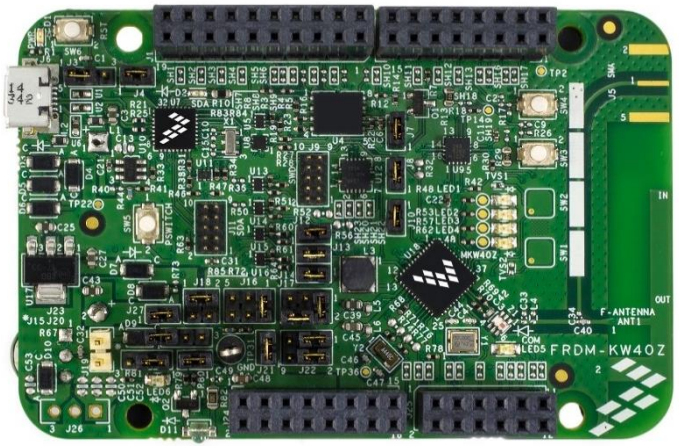
i.MX6Ul EVK

- 528 MHz Cortex-A7 CPU
- 4 GB DDR3L DRAM memory
- 256 MB Quad SPI Flash
- Arduino/Freedom connector
- Launching Oct 6th

Kinetis KW40Z Tools and Software

will follow the same strategy for the KW41Z

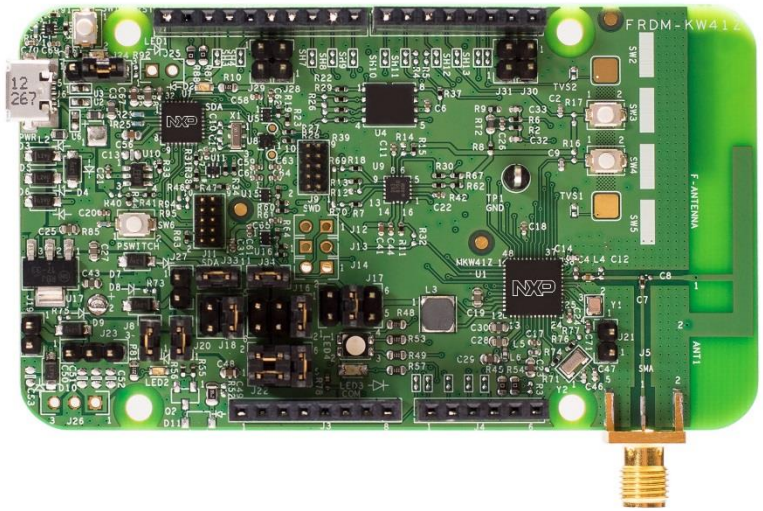
- **Easy-to-use Hardware**
  - **FRDM-KW40Z**: Freescale Freedom Development Platform
  - **USB-KW40Z**: Ideal for BLE/802.15.4 sniffer or connection to PC/Tablet



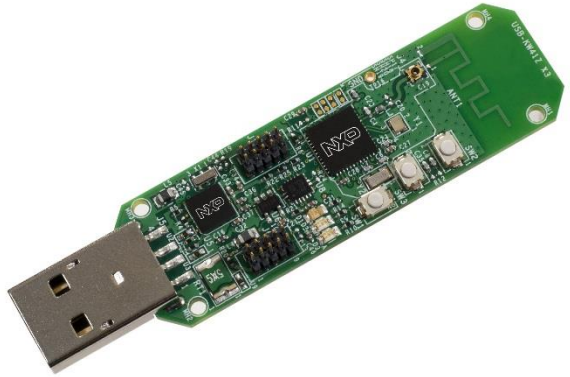
- **Robust Software**
  - Royalty-free Freescale BLE host stack with 20 GATT profiles, fully compliant to the BLE 4.1 spec
  - 802.15.4 MAC layer, as the foundation for ZigBee 3.0 and the highly anticipated Thread IP-based mesh networking protocol
  - All stacks support over-the-air firmware updates
  - Fully integrated into the Kinetis Software Development Kit (SDK) with support for multiple RTOS options, including FreeRTOS and bare-metal solutions

KW41Z Development Hardware

- **FRDM-KW41Z** Freedom Development Hardware
  - Can be configured as Host or Shield for connection to Host Processor
  - Supports all DC-DC configurations
  - PCB inverted F-type antenna
  - Minimum number of matching components
  - FCC Part15 & EN300 328 compliant
  - Serial Flash for OTA firmware upgrades
  - On board NXP FXOS8700CQ digital sensor, 3D Accelerometer (±2g/±4g/±8g) + 3D Magnetometer
  - OpenSDA and JTAG debug
  - Full KSDK support
  - Resale $145 (2 boards/kit)

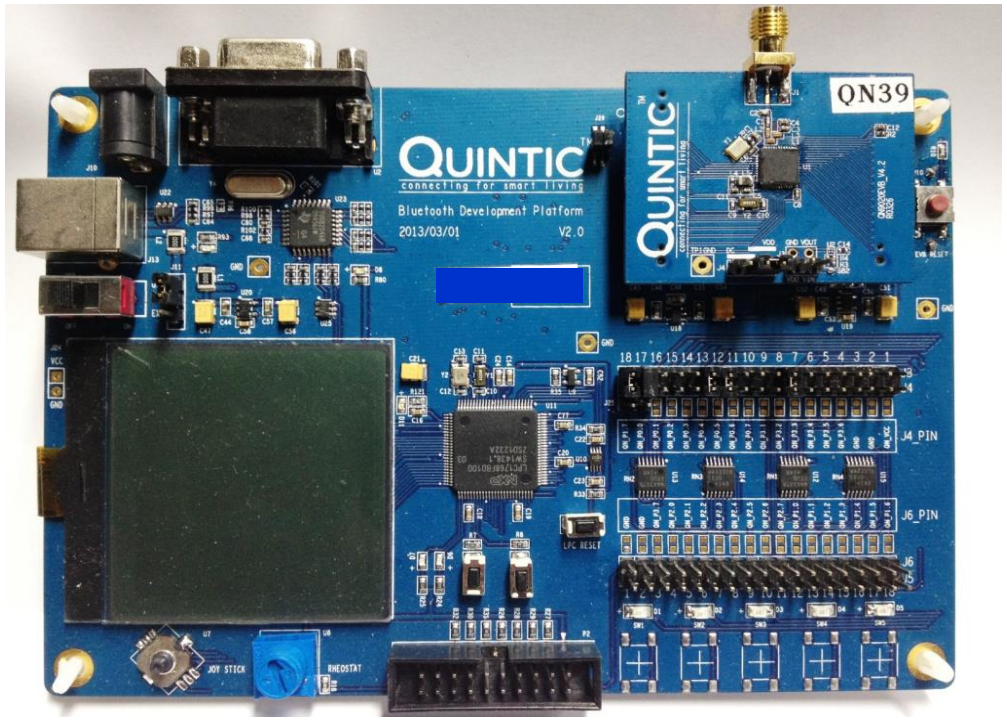


- **USB-KW41Z** USB Dongle
  - Ideal for BLE/802.15.4 sniffer or connection to PC/Tablet
  - FCC Part15 & EN300 328 compliant
  - Resale $60



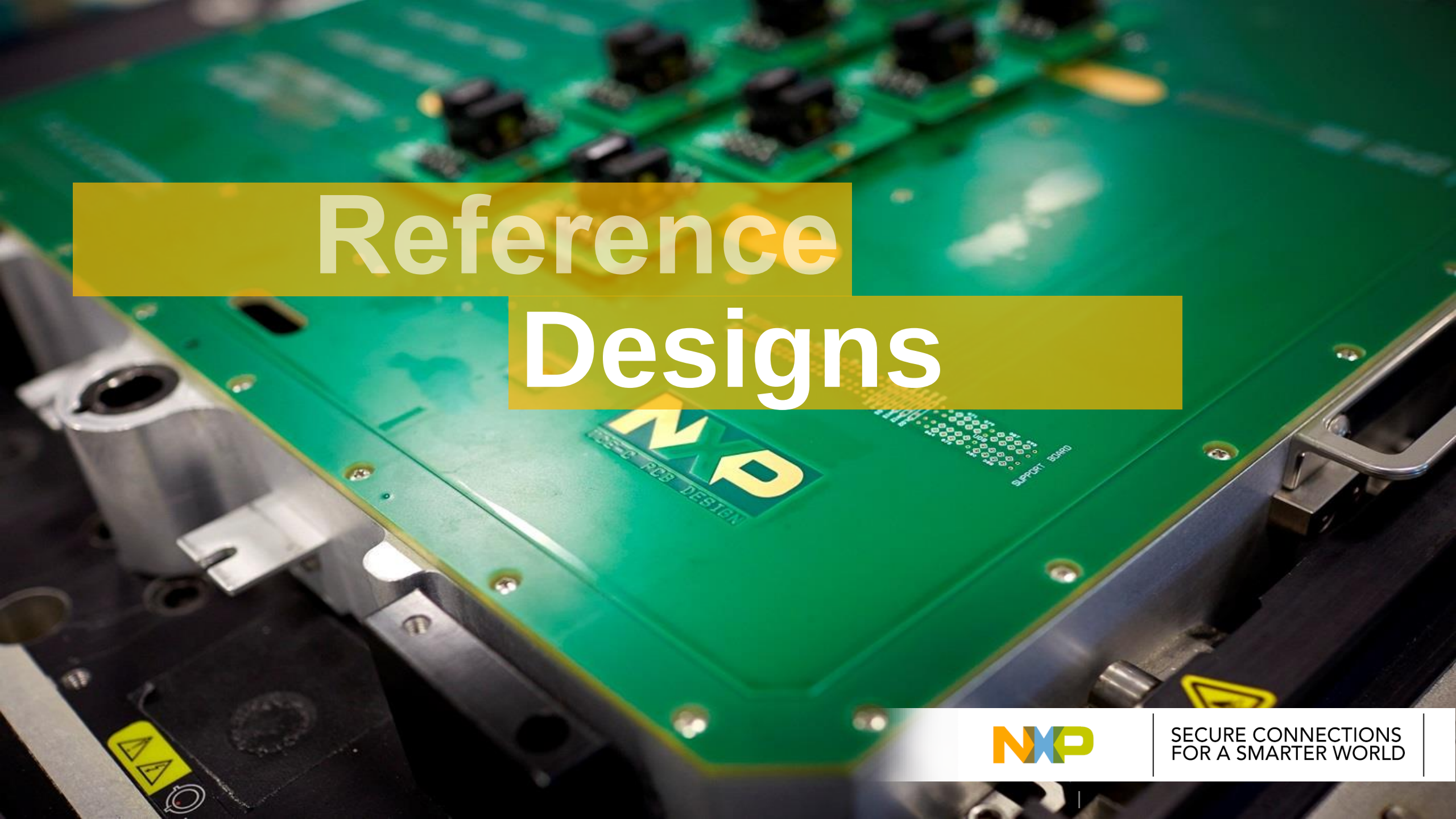
QN902x Evaluation And Design Kits

- **Full Software Package**
  - SDK and API, Support Keil or IAR
  - Full BT Profile offering
  - Software application package for OTA and QPP



Evaluation board
for full RF performance evaluation

Mini Design Kit with USB adapter
For customer application development



Reference Designs

SECURE CONNECTIONS FOR A SMARTER WORLD

NXP Designs

- A one-stop-website to help customers develop their embedded design using complete NXP technology with,
- Projects, solutions and reference designs using NXP technology
- Access to information such as software, schematics and user documentation for quick use and customization
- Designed by NXP technical experts and third party partners

www.nxp.com/nxpdesigns

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NXP Designs by Application

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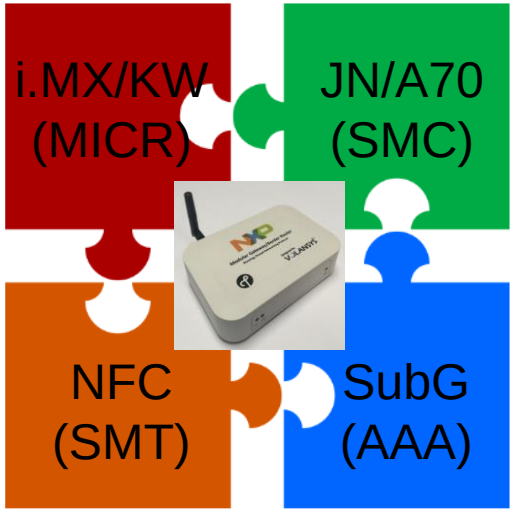
	NXP Design	Description	Quick Links
	Hexiwear - Complete IoT Development Solution	Next generation IoT development platform designed to reduce time to market. Comes in compact form factor with on-boards MCUs, BLE Connectivity, sensors, OLED display, battery. Open source software package includes embedded software, cellphone apps and cloud connectivity. Expandable with 200 additional click boards™	Fact Sheet Buy Software Schematic Design Files Bill of Material (BOM) iOS App Android App
	Quadcopter Drone	The powerful Electronic Speed Controller (ESC) solution combines four separate ESC boards into one and controlled by with a single Kinetis KV4x or Kinetis KV5x MCU.	Software Schematic Design Files Bill of Material (BOM) Application Notes
	Internet Radio Audio Streaming	Demonstrate an easy-to-use internet-radio application.	Software Application Note Brochure
	BLE Controlled Robot	The Bluetooth® Low Energy (BLE) controlled robot brings the robot control to your cellphone. Develop your own smart robot using FRDM-KW40 board and Pololu Zumo Robot.	Software Schematic Design Files Bill of Material (BOM) Application Notes and

NXP Modular Gateway Solution Platform v1.0

Value Proposition:

- Reduce time to market and development costs via modular design for Thread and ZigBee Gateway/Border Router customers
- Reduce project risk and uncertainty associated with wireless connectivity



Cross-PL Core Of NXP IoT

Key NXP Content:

- Hardware, software & services, including all drivers, protocol stacks, and Linux BSP support
  - i.MX6UL SOM
  - Kinetis KW22D512/KW41Z Module, JN5169/JN5179 Module
  - Kinetis KW41Z Module (TBD)
  - PN7120 NFC, A70CM Sec Elelement
  - Professional Support and Services

Target Segments/Applications:

- Commercial Building/Lighting
- Low Power WAN

Availability: Launch Nov 2016 (electronica)

Key Features/Capabilities:

- Thread, ZigBee, WiFi, ENET
- Large Node Networks (>255 nodes)
- Over the Air Programming via Multicast
- Commissioning (BLE Demo, NFC Demo, Smart App)
- WiFi and Ethernet to Cloud
- Smart Phone Apps
- FCC/CE/IC*

THANK YOU!

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FOR A SMARTER WORLD