

# NXP SEMICONDUCTOR Wireless Solutions

 This product is RoHS compliant.



## WIRELESS MICROCONTROLLERS

### JN5139 Wireless Microcontroller (IEEE802.15.4 and JenNet)

The JN5139 is a low power, low cost wireless microcontroller suitable for IEEE802.15.4 and JenNet applications. The device integrates a 32-bit RISC processor, with a fully compliant 2.4GHz IEEE802.15.4 transceiver, 192kB of ROM, 96kB of RAM, and a rich mixture of analogue and digital peripherals. The cost sensitive ROM/RAM architecture supports the storage of system software, including protocol stacks, routing tables and application code/data. An external flash memory is used to store application code that is bootloaded into internal RAM and executed at runtime. The device integrates hardware MAC and AES encryption accelerators, power saving and timed sleep modes, and mechanisms for security key and program code encryption. These features all make for a highly efficient, low power, single chip wireless microcontroller for battery-powered applications.

#### Features:

- Single chip integrates transceiver and microcontroller for wireless sensor networks
- Cost sensitive ROM/RAM architecture, meets needs for volume application
- System BOM is low in component count and cost
- Hardware MAC ensures low power consumption and low processor overhead
- Extensive user peripherals

#### Applications:

- Robust and secure low power wireless applications
- Wireless sensor networks, particularly IEEE802.15.4 and JenNet systems
- Home and commercial building automation
- Remote controls
- Toys and gaming peripherals
- Industrial systems
- Telemetry and utilities

For quantities of 250 and up, call for quote.

MOUSER STOCK NO.	NXP Part No.	Package Type	MIPS (MHz)	RAM	ROM	ROM Variant	Rx Current (mA)	Tx Current (mA)	ADC	DAC	Serial Interface	Digital Input-Output Pins	Timers	Price Each		
														1	10	100
771-JN5139/001531	JN5139/001,531	HVQFN-56	16	96K	192K	IEEE802.15.4	37	38	4-Ch 12-Bit	2x11-Bit	2-Wire, 2xUART, SPI	21	5	13.06	8.97	7.53
771-JN5139/Z01531	JN5139/Z01,531	HVQFN-56	16	96K	192K	ZigBee	37	38	4-Ch 12-Bit	2x11-Bit	2-Wire, 2xUART, SPI	21	5	10.63	8.82	8.02

### JN5148 Single Chip JenNet, ZigBee PRO and IEEE802.15.4 Solution

The JN5148 is an ultra low power, high performance wireless microcontroller targeted at JenNet and ZigBee PRO networking applications. The device features an enhanced 32-bit RISC processor offering high coding efficiency through variable width instructions, a multistage instruction pipeline and low power operation with programmable clock speeds. It also includes a 2.4GHz IEEE802.15.4 compliant transceiver, 128kB of ROM, 128kB of RAM, and a rich mix of analogue and digital peripherals. The large memory footprint allows the device to run both a network stack (e.g. ZigBee PRO) and an embedded application or in a coprocessor mode. The operating current is below 18mA, allowing operation direct from a coin cell. Enhanced peripherals include low power pulse counters running in sleep mode designed for pulse counting in AMR applications and a unique Time of Flight ranging engine, allowing accurate location services to be implemented on wireless sensor networks. It also includes a 4-wire I2S audio interface, to interface directly to mainstream audio CODECs, as well as conventional MCU peripherals.

#### Features:

- Single chip integrates transceiver and microcontroller for wireless sensor networks
- Large memory footprint to run ZigBee PRO or JenNet together with an application
- Very low current solution for long battery life
- Highly featured 32-bit RISC CPU for high performance and low power
- System BOM is low in component count and cost
- Extensive user peripherals

#### Applications:

- Robust and secure low power wireless applications
- ZigBee PRO and JenNet networks
- Smart metering (e.g. AMR)
- Home and commercial building automation
- Location Aware services (e.g. Asset Tracking)
- Industrial systems
- Telemetry
- Remote Control
- Toys and gaming peripherals

For quantities of 250 and up, call for quote.

MOUSER STOCK NO.	NXP Part No.	Package Type	MIPS (MHz)	RAM	ROM	ROM Variant	ADC	DAC	Serial Interface	Digital Input-Output Pins	Timers	Price Each		
												1	10	100
771-JN5148/001531	JN5148/001,531	HVQFN-56	32	128K	128K	Supports all available network stacks	4-Ch 12-Bit	2x12-Bit	2-Wire, 2xUART, SPI	21	3	6.90	6.29	5.67

## ZIGBEE PRO EVALUATION KIT

Jennic's JN5148-EK010 ZigBee PRO evaluation kit provides a complete environment for the development of ZigBee PRO applications based on the JN5148 wireless microcontroller. The kit contains a complete package of hardware and software, including five wireless sensor nodes, an unrestricted software developer kit (SDK), an example code.

MOUSER STOCK NO.	NXP Part No.	Description	Price Each
771-JN5148EK010596	JN5148-EK010,596	Evaluation Kit for JN5148 family of wireless microcontrollers	646.60

## WIRELESS MODULES

The JN5139-xxx-My family is a range of surface mount modules that enables users to implement systems using Jennic's own JenNet networking stack or IEEE802.15.4 with minimum time to market and at the lowest cost. They remove the need for expensive and lengthy development of custom RF board designs and test suites. The modules use Jennic's JN5139 wireless microcontroller to provide a comprehensive solution with high radio performance and all RF components are included. All that is required to develop and manufacture wireless control or sensing products is to connect a power supply and peripherals such as switches, actuators and sensors, considerably simplifying product development.

For quantities of 250 and up, call for quote.

MOUSER STOCK NO.	NXP Part No.	Package Type	Description	Range	Rx Sensitivity	Tx Power	Tx Current	Rx Current	Module Size	Price Each		
										1	10	100
<b>JN5139 Family - Supports ZigBee network stack</b>												
771-JN5139Z01M/00R1T	JN5139-Z01-M/00R1T	SOM-041	Module includes an on-board antenna	1km	-96dBm	+2.5dBm	37mA	37mA	18x30mm	28.76	25.88	23.72
771-JN5139Z01M/01R1V	JN5139-Z01-M/01R1V	SOM-041	Module includes a SMA connector	1km	-96dBm	+2.5dBm	37mA	37mA	18x30mm	32.78	29.50	27.04
771-JN5139Z01M/02R1V	JN5139-Z01-M/02R1V	SOM-041	Module includes a SMA connector	4km	-100dBm	+19dBm	125mA	45mA	18x41mm	40.47	35.36	33.01
771-JN5139Z01M/03R1T	JN5139-Z01-M/03R1T	SOM-041	Module includes a uFI connector	1km	-96dBm	+2.5dBm	37mA	37mA	18x30mm	32.78	29.50	27.04
771-JN5139Z01M/04R1T	JN5139-Z01-M/04R1T	SOM-041	Module includes a uFI connector	4km	-100dBm	+19dBm	125mA	45mA	18x41mm	40.47	35.36	33.01
<b>JN5139 Family - Supports IEEE802.15.4 stacks</b>												
771-JN5139001M/00R1T	JN5139-001-M/00R1T	SOM-041	Module includes an on-board antenna	1km	-96dBm	+2.5dBm	37mA	37mA	18x30mm	28.22	25.40	23.28
771-JN5139001M/01R1V	JN5139-001-M/01R1V	SOM-041	Module includes a SMA connector	1km	-96dBm	+2.5dBm	37mA	37mA	18x30mm	32.24	29.02	26.59
771-JN5139001M/02R1V	JN5139-001-M/02R1V	SOM-041	Module includes a SMA connector	4km	-100dBm	+19dBm	125mA	45mA	18x41mm	39.96	34.91	32.59
771-JN5139001M/03R1T	JN5139-001-M/03R1T	SOM-041	Module includes a uFI connector	1km	-96dBm	+2.5dBm	37mA	37mA	18x30mm	32.24	29.02	26.59
771-JN5139001M/04R1T	JN5139-001-M/04R1T	SOM-041	Module includes a uFI connector	4km	-100dBm	+19dBm	125mA	45mA	18x41mm	39.96	34.91	32.59
<b>JN5148 Family - Supports JenNet, ZigBee PRO as well as commercial applications</b>												
771-JN5148001M00T534	JN5148/001M00T,534	SOM-041	Module includes integral antenna	1km	-95dBm	+2.5dBm	15mA	17.5mA	18x32mm	24.42	19.98	19.09
771-JN5148001M00T534	JN5148/001M00T,534	SOM-041	Module includes a uFI connector	1km	-95dBm	+2.5dBm	15mA	17.5mA	18x30mm	28.43	23.26	22.22
771-JN5148001M04T534	JN5148/001M04T,534	SOM-041	Module includes a uFI connector	4km	-98dBm	+20dBm	110mA	23mA	18x41mm	30.29	24.79	23.68

## RFID READER ICs

For quantities of 250 and up, call for quote.

MOUSER STOCK NO.	NXP Part No.	Package Type	Description	Freq. (MHz)	Standard	Price Each		
						1	25	100
771-CLRC63201TD	CLRC63201T/0FE,112	SO-32	Multiple protocol contactless reader IC (MIFARE/I-CODE1)	13.56	ISO 14443A, ISO 14443B, 15693	14.34	12.06	11.08
771-HTRC11001AD	HTRC11001T/02EE,11	SO-14	HITAG reader chip for use with HITAG transponder ICs	0.125	----	3.00	2.42	2.17
771-HTRC11001TD-T	HTRC11001T/03EE,11	SO-14	HITAG reader chip for use with HITAG transponder ICs	0.125	----	3.39	2.61	2.37
771-MFRC510TFED	MFRC5000T/0FE,112	SO-32	Highly integrated reader IC (MIFARE)	13.56	ISO 14443A	10.88	8.91	8.04
771-MFRC52301HN1,151	MFRC52301HN1,151	HVQFN-32	Contactless reader IC (MIFARE)	13.56	ISO 14443A, ISO 14443B	5.75	4.71	4.25
771-MFRC53101TD	MFRC53101T/0FE,112	SO-32	Contactless reader IC (MIFARE)	13.56	ISO 14443A, ISO 14443B	12.25	10.30	9.46
771-SL2FCS5401EVDH11	SL2FCS5401EVDH,11	-	Smart label solution for secure, globally compliant applications	----	ISO 15693, 18000-3, EPCglobal HF	.25	.25	.242
771-SL3S1002AC0,118	SL3S1002AC0,118	FCS-2	UHF RFID passive smart tag and label (G2XM)	840-960	EPCglobal Class 1 Gen 2 UHF RFID	.18	.11	.104
771-SL3S1002FTT,118	SL3S1002FTT,118	TSSOP-8	UHF RFID passive smart tag and label (G2XM)	840-960	EPCglobal Class 1 Gen 2 UHF RFID	.26	.18	.163
771-SL3S1202FTT,118	SL3S1202FTT,118	TSSOP-8	UHF RFID passive smart tag and label (G2XL)	840-960	EPCglobal Class 1 Gen 2 UHF RFID	.26	.178	.151

#### Design Kits

771-OM5581N5322S0269	OM5581/N5322S02,69	Design-in kit for NFC controller (PN532). Includes 2 serial boards, serial cable, power supply & documentation		471.00
771-OM5588N5331U0169	OM5588/N5331U01,69	Design-in kit for NFC controller (PN533). Includes 2 serial boards, serial cable, power supply & documentation		454.00