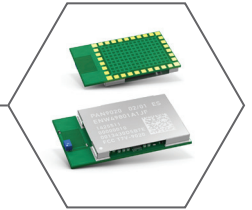# Panasonic

New Product Introduction

PAN90x0 Series
## Wi-Fi Radio 802.11 b/g/n

PAN9020/9010 is a series of 2.4GHz ISM band wireless radio modules for implementing WLAN functionality into various electronic devices. The cost-effective, low-power operation, system-on-chip (SoC) solutions enable wireless network applications to be built with low total bill-of-material costs. The radio modules combine an excellent 802.11 wireless radio, baseband processor, medium access controller, encryption unit, boot ROM with patching capability, internal SRAM, in-system programmable flash memory and many other powerful supporting features and peripherals. The low-power operation is supporting deep sleep and standby modes by using the on-board power management unit. Layout design, calibration, and test efforts in production are reduced compared to discrete solutions, resulting in a precious advantage in terms of time-to-market. Panasonic offers a software package supporting various Fedora Core Kernel versions. The Hardware Interface Driver controls the hardware interface on the HOST side. Furthermore, the software package from Marvell® consists of various applications, demonstrations and utilities.

Features

- Surface Mount Type 22.75 x 13.5 x 2.4 mm³
- Wireless Local Area Network (WiFi) Technology
- Supports IEEE 802.11
  IEEE 802.11b/g Payload Data Rates
  IEEE 802.11n High-Throughput Data Rates
  IEEE 802.11i Security Standards AES-CCMP,
  WEP, TKIP, AES-CMAC and WAPI
  IEEE 802.11e Quality of Service (QoS)
- Coexistence Interface for External Co-Located 2.4GHz Radios (e.g. Bluetooth)
- Tx Power up to +18 dBm (IEEE 802.11b CCK) and 14dBm (IEEE 802.11g ODFM)

- High Rx sensitivity -98dBm (IEEE 802.11b DSSS 1Mbps)
- Integrated Marvell® 88W8782 WLAN System-on-Chip (SoC) Solution
- High-Performance, Low-Power CPU Core
- Two Powerful, Independent DMA Channels
- Power Management Unit Sleep Clock (for Power Save Mode)
- Internal Crystal Oscillator (40MHz)
- USB2.0 or SDIO Interface
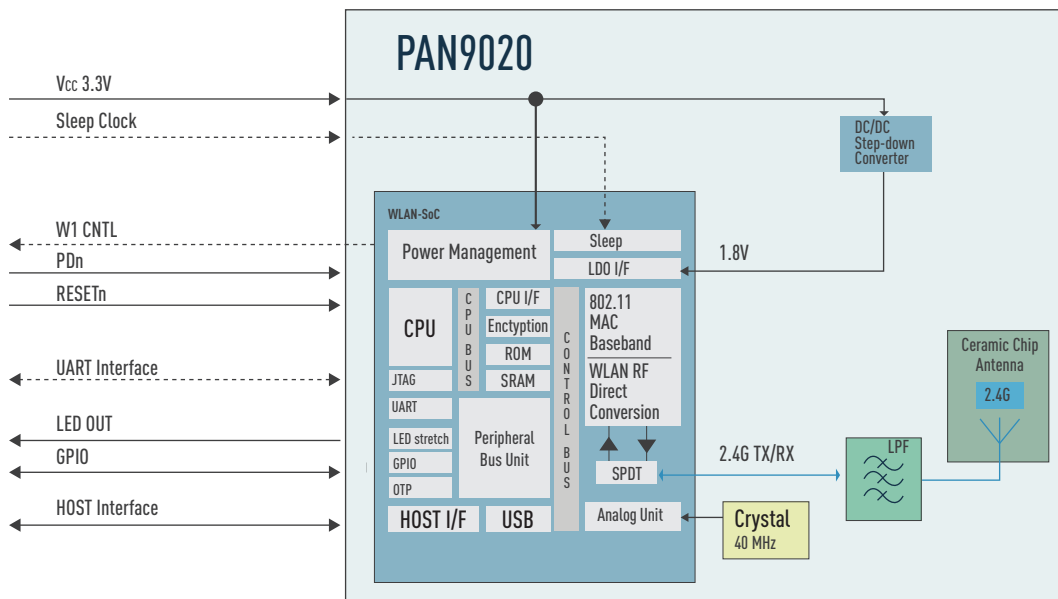- Integrated Shielding to Resist EMI
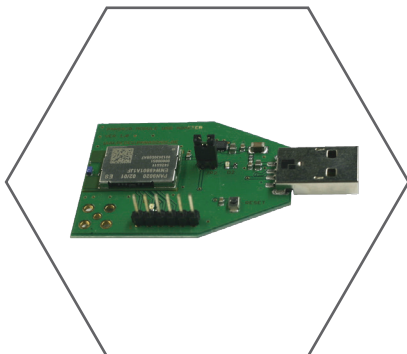
Development Kits

Panasonic's designer friendly ETU – Easy to Use – development kits reduce design efforts and critical time to market by providing the target module on USB stick, free development-ware, reference designs and PCB layout.

Applications

- Imaging Platform
- Digital Picture Frame
- Gaming Platform
- Consumer Electronic
- Portable Application
- Smart Energy
- Thermostat, Control panels

- Printer
- Game Console
- Media Player
- Tablet, eBook
- Health & Fitness
- Home Gateways

Block Diagram

PAN9020

Vcc 3.3V

Sleep Clock

W1 CNTL

PDn

RESETn

UART Interface

LED OUT

GPIO

HOST Interface

WLAN-SoC

Power Management

Sleep

LDO I/F

DC/DC Step-down Converter

1.8V

CPU

C P U B U S

CPU I/F

Enctyption

ROM

SRAM

JTAG

UART

LED stretch

GPIO

OTP

Peripheral Bus Unit

HOST I/F

USB

C O N T R O L B U S

802.11 MAC Baseband

WLAN RF Direct Conversion

SPDT

2.4G TX/RX

Analog Unit

Crystal 40 MHz

LPF

Ceramic Chip Antenna

2.4G

Part Number

Part Number	Description
ENW49801A1JF	PAN9020-USB USB Interface, chip antenna
ENW49802A1JF	PAN9020-SDIO SDIO Interface, chip antenna
ENW49801C1JF	PAN9010-USB USB Interface, 50 ohm pad
ENW49802C1JF	PAN9010-SDIO SDIO Interface, 50 ohm pad

Technical Characteristics

Parameter	Value	Condition / Note
Software		Linux / Android Driver
Receiver Sensitivity	-98 dBm	@1M-DSSS (Details see Datasheet)
Tx Power	+18 dBm	@ 11b
Power Supply	3.0 to 3.6 V	
Current Consumption	430 mA	@ 11Mbps
Centre Frequency	2.4 GHz	802.11 b/g/n
Operating Temperature	0 C / +70C	
Range Size	22.75x13.5x2.42	mm

For detailed specification information on the PAN90x0 Series, visit our website at:
eu.industrial.panasonic.com/products/wireless-connectivity/wi-fi/wi-fi-embedded

Industry Canada   Wi Fi   FC   CE   RoHS COMPLIANT   REACH COMPLIANT

WIRELESS CONNECTIVITY