

Wireless Connectivity Solutions

Panasonic Wireless Connectivity Solutions include a wide range of technologies and provide the flexibility to easily choose and implement a wireless protocol that is best suited to an application from a single, world class supplier. Manufactured with design simplicity in mind, Panasonic's RF Modules provide quick implementation of wireless communication without the need to invest in complex wireless hardware and software design.

Panasonic Wireless Connectivity products combine the latest communication protocols with place-and-play modules for Bluetooth® Low Energy, Bluetooth Dual Mode, Wi-Fi, Wi-Fi Combo, 802.15.4 protocols and more.



1-800-344-2112

na.industrial.panasonic.com/products/wireless-connectivity/

Ready-To-Use Modules with Built-In, Bluetooth Technology






Designed for operation in harsh RF environments, Panasonic's Bluetooth Modules can be designed into all types of electronic devices. Features include, High Data Rates, Long Range, Reduced Power Consumption (under 4mA), Common Hardware and Software Interfaces for Interchangeability.

	Bluetooth Low Energy + 802.15.4 :		Bluetooth Low Energy:			Bluetooth Dual Mode:	
	Bluetooth Low Energy, Thread, Mesh Networking and NFC		Robust Low Data Rate, Low Power Consumption			Bluetooth Classic Plus Bluetooth Low Energy	
	PAN4620 Series	PAN1780 Series	PAN1740 Series	PAN1740A Series	PAN1762 Series	PAN1026A	PAN1326C/C2
Part Number	ENW-C9B01A1EF	ENW-89854A1KF	ENW-89846A1KF	ENW-89852A1KF	ENW-89853A1KF	ENW-89837A5KF	ENW-89823xxKF
RF Category	Bluetooth® Low Energy v4.2 + Thread	Bluetooth® Low Energy v5.0 + Thread + NFC	Bluetooth® Low Energy v4.2	Bluetooth® Low Energy v5.0	Bluetooth® Low Energy v5.0	Bluetooth® v4.2 Dual Mode (BR, LE)	Bluetooth® v4.2 Dual Mode (BR, EDR, LE)
Supported Profile	SPP	SPP	SPP	SPP	SPP	SPP and GATT	All
Controller	NXP KW41Z	nRF52840	DA14580	DA14585	TC35680	TC35661-551	CC2564C
Size [mm]	15.6 x 8.7 x 1.9	15.6 x 8.7 x 2	9.0 x 9.5 x 1.8	9.0 x 9.5 x 1.8	15.6 x 8.7 x 1.9	15.6 x 8.7 x 1.8	9.0 x 9.5 x 1.8
Rx Sensitivity [dBm]	-95 dBm	-105 @ 125 kb/s	-93 dBm	-93 dBm	-105 @ 125 kb/s	-89 dBm	-93 dBm
Tx Power (max.) [dBm]	+3.5	+8	+0	+0	+8	+4	+10/+8
Power Supply [V]	1.8 to 4.2	1.7 to 5.5	2.35 to 3.3	2.35 to 3.3	1.9 to 3.6	2.8 to 3.6	1.8 to 4.8
Current Consumption	Tx: 7.6mA Rx: 8.4mA Low power mode: <250µA	Tx: 4.8mA Rx: 4.8mA Sleep Mode: <1µA	Tx: 4.9mA Rx: 4.9mA Sleep Mode: <1µA	Tx: 4.9mA Rx: 4.9mA Sleep Mode: <1µA	Tx: 11mA Rx: 5.1mA Deep Sleep Mode: 50nA	ACL, DH1: 46mA Sleep Mode: <2mA	Tx, EDR: 40mA Sleep Mode: 135µA
Interfaces	GPIO, UART, SPI, I2C, ADC, DAC, TSI	GPIO, UART, QSPI, I2C, ADC, PDM, PWM, NFC-A, USB2.0	GPIO, UART, SPI, I2C, 3-axis QD, ADC	GPIO, UART, SPI, I2C, 3-axis QD, ADC	SPI, I2C, UART, PWM, Wake-Up inputs, ADC, GPIO	GPIO, UART	GPIO, PCM, UART
Microcontroller and Memory	ARM® Cortex® M0+ 128kB SRAM, 512kB Flash	ARM® Cortex® -M4F 256kB RAM, 1MB Flash	ARM® Cortex® -M0 42kB SRAM, 32kB Flash	ARM® Cortex® M0 96kB SRAM, 64kB Flash	ARM® Cortex® -M0 51kB RAM, 128kB Flash	ARM 7TDMI	ARM® Cortex® -M0 1.5kB EEPROM
Type	Autonomous ⁴	Autonomous ⁴	Autonomous ⁴	Autonomous ⁴	Autonomous ⁴	Autonomous ⁴	Autonomous ⁴
Module Pre-certification	FCC, ISED	FCC, ISED, CE	FCC, ISED, CE, ETA, MIC	FCC, ISED, CE	FCC, ISED, CE, MIC	FCC, ISED, CE, MIC, KC, SRRC	FCC, ISED, CE for C2 version only
Operating Temp. [°C]	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Evaluation Kit	Available						

Notes: 1. All Bluetooth Special Interest Group LE profiles 2. Place and Play – Integrated microcontroller, API and Bluetooth controller 3. Host Controlled Interface – Microcontroller and Bluetooth stack are required 4. Autonomous – Stand Alone Operation 5. BRSP-Blue Radios Serial Port

Long Range, High Data Rates, Secure Connections with Panasonic Wi-Fi

Adding Wi-Fi connectivity to a design has never been easier. Panasonic Wi-Fi Modules provide fast implementation of 802.11 bgn and combo Wi-Fi plus Bluetooth Dual Mode in your designs. Panasonic Wi-Fi Modules are cost effective and flexible system-on-chip (SoC) designs, with an optional integrated webserver, certificate based security and simultaneous access point and infrastructure modes. Panasonic Wi-Fi Modules offer the perfect blend of long life, reliability and performance.

	Non-Embedded Wi-Fi + BLE 5.0: Wi-Fi Combo BT Dual Band Enabling Simultaneous Multi-Protocol Data Communication	Non-Embedded Wi-Fi: Cost Engineered, Secure Communication, High Performance	Embedded Wi-Fi: A Complete Solution With An Integrated IoT Stack And API
	PAN9026 Series	PAN9010/PAN9020	PAN9420
			
Part Number	ENW-F9202A1EF (EU) / ENW-F9201A1EF (US) / ENW-F9203A1EF (CA)	ENW-49801A1JF (Antenna) / ENW-49801C1JF (Non-antenna)	ENW-49C01A3KF (US/CA) / ENW-49C02A3KF (EU and other)
RF Category	Wi-Fi® Radio 2.4 GHz & 5 GHz 802.11 a/b/g/n + Bluetooth® v5.0 (BR, EDR, LE)	Wi-Fi® Radio 802.11 b/g/n	Wi-Fi® Embedded 802.11 b/g/n
Software/ Profile	Linux	Linux / Android Driver	Full Embedded
Used ICs	88W8977	88W8782	88MW300
Size [mm]	17.5 x 10.0 x 2.6	22.75 x 13.5 x 2.42	29.0 x 13.5 x 2.66
Antenna Options	w/ antenna / w / 50 Ohm bottom pad	w/ antenna / w / 50 Ohm bottom pad	w/ antenna / w / 50 Ohm bottom pad
Rx Sensitivity [dBm]	-98 @ 1M-DSSS	-98 @ 1M-DSSS	-97 @ 1M-DSSS
Tx Power (max.) [dBm]	+17 @ 11b	+18 @ 11b	+16 @ 11b
Power Supply	1.8 to 3.3	3.0 to 3.6	3.0 to 3.6
Current Consumption	Tx: 400mA @ 11Mbps Rx: 70mA @ 11Mbps Power Down Mode: 150µA	Tx: 400mA @ 11Mbps Rx: 105mA @ 11Mbps Power Down Mode: 200µA	Tx: 310mA @ 11Mbps Rx: 75mA @ 11Mbps Power Down Mode: <1mA
Centre Frequency [MHz]	2,400 and 5,000	2,400	2,400
Interfaces	SDIO 3.0, HS UART	SDIO, USB 2.0	2x UART, SPI
Module Pre-certification	FCC, ISSED, CE	FCC, ISSED, CE	FCC, ISSED, CE, SRRC
Operating Temp. [°C]	-30 to +85	0 to +70	-40 to +85
Evaluation Kit	Yes		

Accelerate Prototyping and Testing by Utilizing Panasonic's Evaluation Kits

Whether integrating Bluetooth Dual-Mode, ultra-low power Bluetooth Low Energy, WiFi or Wi-Fi Combo Modules into an application, Panasonic provides easy to use development boards, complete with software and documentation to get up and running FAST. Discover today why Panasonic Modules are the premier choice for reducing design cycles and lowering cost of development.

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