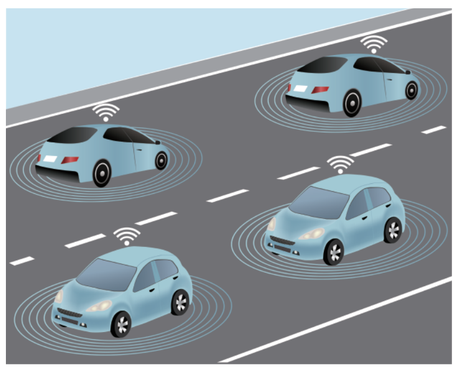
MACNICA

Connectivity

Wi-Fi/Bluetooth® Module

MinebeaMitsumi
Passion to Create Value through Difference

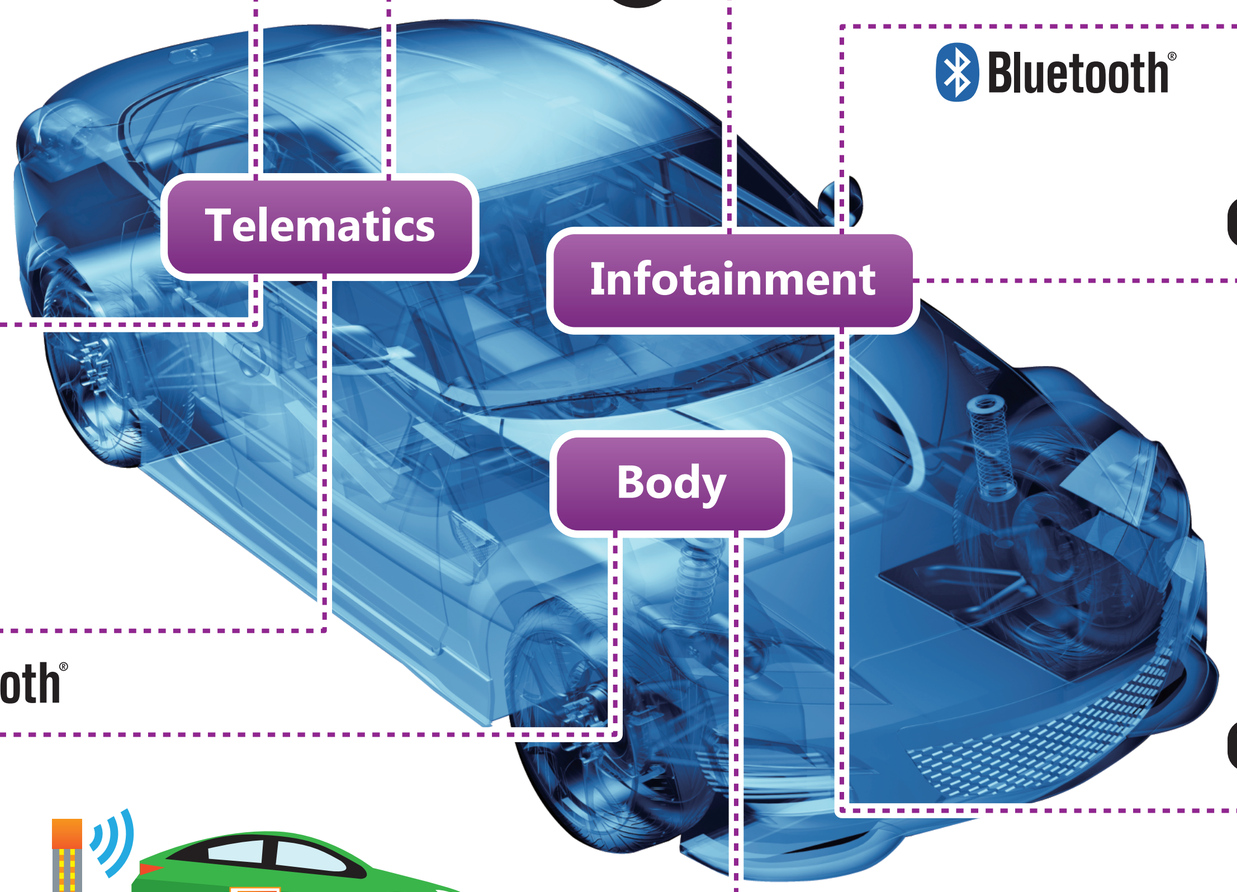
CYPRESS
EMBEDDED IN TOMORROW™



Car2Car
Car2Infrastructure

Internet Access

Hands Free Voice
Music Streaming

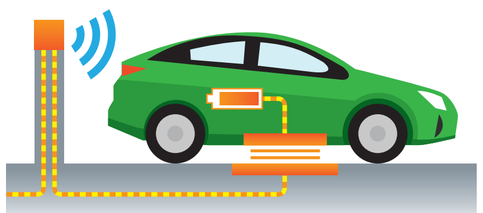


FREE Wi-Fi

LTE Offload
Media Services
OTA Update

Multimedia Distribution
Rear-seat Entertainment

Keyless Entry
Phone as Key
Automated Parking
Tire Pressure Monitoring
Remote Sensors Control

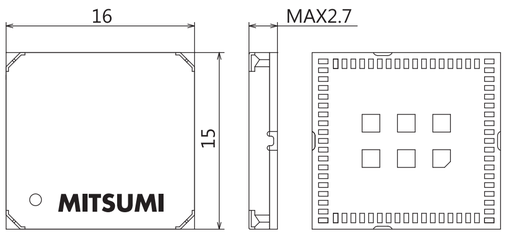


EV Wireless Charging

Display Sharing
Apple CarPlay, Android Auto,
MirrorLink

DWM-W145

DIMENSIONS



FEATURE

1. Supports very high throughput wireless LAN standards IEEE802.11ac/a/b/g/n (2.4 GHz/5 GHz).
   Theoretical throughput for 2×2 MIMO : 866 Mbps
2. Supports Bluetooth® 4.2 (BLE)
3. Small size, low width
4. Mounting Type: SMD type

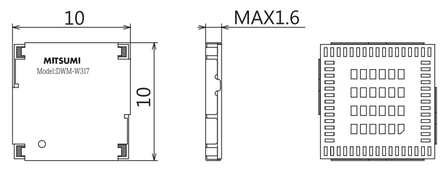
SPCIFICATION

ITEM			SPECIFICATION
W-LAN	Carrier Frequency		2.412GHz to 2.472GHz
	Number of Channel		13ch
	Modulation		DSSS/OFDM
	Data Rate		DSSS: 1M/2M/5.5M/11Mbps
			OFDM: 6M/9M/12M/8M/ 24M/36M/48M/54Mbps
			MCS0-8(HT20 MIMO):14.4M to 173.4Mbps
			MCS0-9(HT40 MIMO):30.0M to 400.0Mbps
	Carrier Frequency		5.180G to 5.8250GHz
	Number of Channel		U.S.A.: 21ch/Europe: 19ch/ Japan: 19ch
	Modulation		OFDM
	Data Rate		OFDM: 6M/9M/12M/18M/ 24M/36M/48M/54Mbps
			MCS0-8(HT20 MIMO):14.4M to 173.4Mbps
			MCS0-9(HT40 MIMO):30.0M to 400.0Mbps
			MCS0-9(HT80 MIMO):65.0M to 866.6Mbps
	Host Interface		PCIe v3.0
Bluetooth	Carrier Frequency		2.402G to 2.480GHz
	Power Class		Class 2
	Hopping		1600hops/sec
	Modulation		GFSK/PI/4-DQPSK/8DPSK
	Data Rate		GFSK: 1Mbps
			PI/4-DQPSK: 2Mbps
			8DPSK: 3Mbps
	Host Interface		UART/PCM/I²S
Environmental Condition	Operating Condition	Temperature	-40 to +85°C
		Humidity	20 to 85%(None dew)

* Specifications subject to change without notice for improvements

DWM-W317

DIMENSIONS



FEATURE

1. Supports very high throughput wireless LAN standards IEEE802.11ac/a/b/g/n (2.4 GHz/5 GHz).
   Theoretical throughput for single spatial stream : 433 Mbps
2. Supports Bluetooth® 4.1 (BLE)
3. Small size, low width
4. Mounting Type: SMD type

SPCIFICATION

ITEM			SPECIFICATION
W-LAN	Carrier Frequency		2.412GHz to 2.472GHz
	Number of Channel		13ch
	Modulation		DSSS/OFDM
	Data Rate		DSSS: 1M/2M/5.5M/11Mbps
			OFDM: 6M/9M/12M/8M/ 24M/36M/48M/54Mbps
			MCS0-8(HT20):7.2M to 86.7Mbps
			MCS0-9(HT40):15.0M to 200.0Mbps
	Carrier Frequency		5.180G to 5.8250GHz
	Number of Channel		U.S.A.: 21ch/Europe: 19ch/ Japan: 19ch
	Modulation		OFDM
	Data Rate		OFDM: 6M/9M/12M/18M/ 24M/36M/48M/54Mbps
			MCS0-8(HT20):7.2M to 86.7Mbps
			MCS0-9(HT40):15.0M to 200.0Mbps
			MCS0-9(HT80):32.5M to 433.3Mbps
	Host Interface		SDIO v3.0
Bluetooth	Carrier Frequency		2.402G to 2.480GHz
	Power Class		Class 1 or Class 2
	Hopping		1600hops/sec
	Modulation		GFSK/PI/4-DQPSK/8DPSK
	Data Rate		GFSK: 1Mbps
			PI/4-DQPSK: 2Mbps
			8DPSK: 3Mbps
	Host Interface		UART/PCM
Environmental Condition	Operating Condition	Temperature	-40 to +85°C
		Humidity	20 to 85%(None dew)

* Specifications subject to change without notice for improvements

Automotive technology applications continue to evolve beyond propulsion and control.
Mitsumi products enable simple integration of wireless connectivity in key parts of the vehicle
Allowing the car maker to deliver the features that today's consumer wants.

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