
 TEOM	MANUAL	APPROVED BY 2019.2.7	CHECKED BY	WRITTEN BY 2019.2.7
	DRT-W031	Tsuchida	/	Takeo

This Product Standard shall be applied to the RF Module (DRT-W031).

Contents

No	Item	page
1.	Scope	
	Scope	2
2.	Product description	
	Product description	2
3.	Architecture	
	Architecture	2
	Block diagram	2
4.	Technical specifications	
	Sub-GHz Radio Narrowband Interface (USA)	3
	GPS capabilities	3
	Mechanical and Environmental	3
5.	Remarks	
	Remarks	4

REVISION	Refer to last page	SYM.	GROUP No.	DWG. No.	Rev.No.
			DRT	W031M	

1.Scope

This specification is applied to the RF module:DRT-W031.

This product is a module dedicated to Wireless LAN Module "DRT - Series" manufactured by Mitsumi Electric Co., Ltd.

Installation on other products is not possible.

Since this module is not sold to general end users directly, there is no user manual of module.

For the details about this module, please refer to the specification sheet of module.

2. Product description

This product is a [DRT-W031:RF module] built into the [DRT-W032:Wireless LAN Module] of the street light systemis.

[DRT-W031:RF module] is a SubGHz IPv6/6LoWPAN hardware radio device.

It is one of the components of the Paradox Engineering’s PE Smart Urban Network platform for urban environments, enabling the implementation of a self-built, self-healing IPv6/6LoWPAN mesh network to build a highly secure communication infrastructure for bidirectional data transmission.

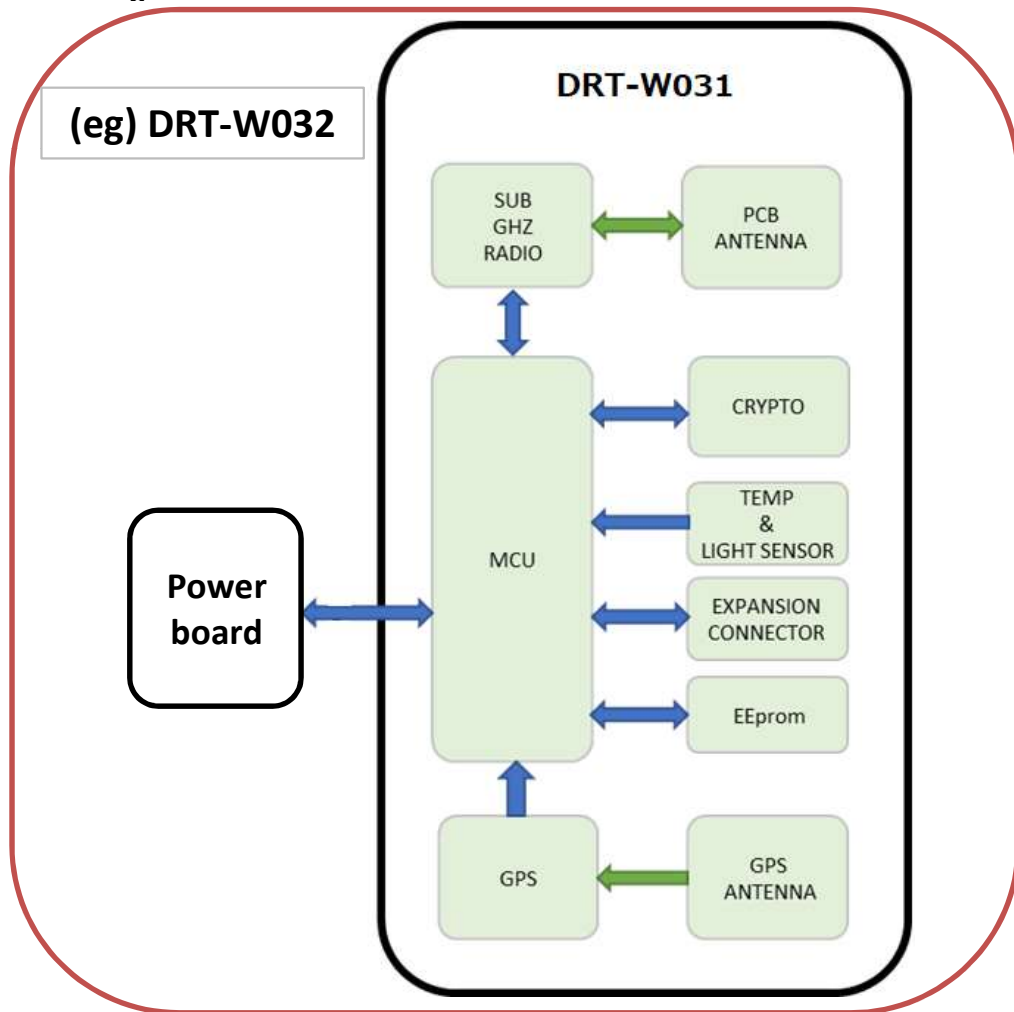
3. Architecture

Microcontroller unit (MCU) and its peripherals

(EEProm, light sensor, GPS, expansion module);

RF transceiver, power amplifier, matching components and printed circuit board antenna;

block diagram



DWG. No.	Rev.No.
W031M	0

4. Technical specifications

Sub-GHz Radio Narrowband Interface (USA)

Item	Unit	Description
Radio protocol	-	802.15.4g – 6LoWPAN
Radio modulation	-	FHSS
Data rate	kbps	100
Tx output power	mW	500 (+27dBm)
TX current	mA	500
Rx sensitivity (BER <1%)	dBm	-94
Frequency Band	MHz	902.42-927.58
Channel Spacing	-	340kHz (75 ch)
Rx bandwidth	kHz	20dB bandwidth typical 180 kHz
Data transmission	-	Bi-directional
Data encryptions	-	AES-128bit
Antenna	-	Board to board, inverted F type

GPS capabilities

Item	Unit	Description
Integrated GPS receiver	-	L1C/A signals provided at 1575.42MHz
Position accuracy	mt/ft	Up to 2.5m/8ft (with >6 satellites)
Time to first fix	sec	Cold starts 29, aided starts 2, hot starts 1

Mechanical and Environmental

Item	Description
Dimensions	*(Refer to specification sheet)
Operating temperature range	-40°C to +70°C
Storage temperature range	-40°C to +85°C
Humidity	5-90% without condensing
Connecton	FFC:0.5pitch 24pin

DWG. No.

Rev.No.

W031M



5.Remarks

The following information must be indicated on the host device of this module:

[for FCC]

Contains FCC ID: EW4DRTW031

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

*If it is difficult to describe this statement on the host device due to the size, please describe in the user's manual and also either describe on the device packaging or on a removable label attached to the device.

[for ISED]

Contains IC: 4250A-DRTW031

The following statements must be described on the user manual of the host device of this module:

[for FCC]

FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

[for ISED]

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).

Operation is subject to the following two conditions:

- 1.This device may not cause interference.
- 2.This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- 1.L'appareil ne doit pas produire de brouillage;
- 2.L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with FCC/ ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the ISED radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.

Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles radioélectriques (RF) de la FCC lignes directrices d'exposition et d'exposition aux fréquences radioélectriques (RF) CNR-102 de l' ISDE Cet équipement doit être installé et utilisé en gardant une distance de 20 cm ou plus entre le radiateur et le corps humain.

DWG. No.

Rev.No.

W031M



