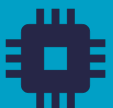
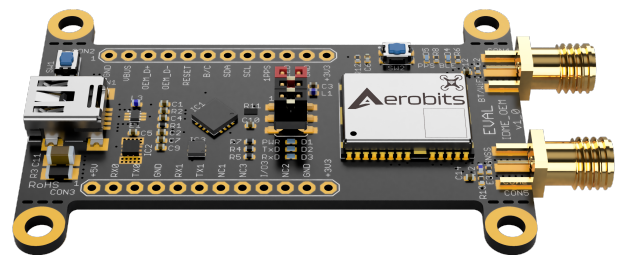




Subsystems for the  
UAS integration into  
the airspace

## *EVAL Remote ID*

[Data sheet - User manual](#)



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# 1 Introduction

The evaluation kit provides a quick introduction to the **TT-RW1/RR1** module. **EVAL-TT-Remote ID** with the dedicated software allows the user to discover the module properties within a short time, paving the way towards quick prototyping. The software allows simple configuration of the module and data visualization in various modes, from raw data, through tabular and 3D views.

## Important:

Each firmware version becomes its own documentation. This document is relevant for firmware version v1.32.7. If your firmware version is different please find relevant documentation on our website [aerobits.pl](https://aerobits.pl).

## 1.1 Features

- **Capability to work with MAVLINK devices**
- **WiFi Nan and Beacon frames**
- **BLE broadcast technology compliant with ASTM and ASD-STAN**
- **Interfaces: UART, USB**
- **Supports Bluetooth 4.0 and 5.2**
- **Free Android application available on Google Play [OpenDroneID OSM](#)**
- **Integrated GNSS source and pressure sensor**

For more information please contact [support@aerobits.pl](mailto:support@aerobits.pl).

## 2 Technical parameters

### 2.1 Basic technical information

Table 1: General technical parameters

Parameter	Description	Typ.	Unit
First Band	BLE	2400	MHz
Second Band	Wi-Fi	2400	MHz
Third Band	GNSS	1575	MHz
Max. output (BLE)	Maximum output power	+18	dBm
Max. output (Wi-Fi)	Maximum output power	+20	dBm
Sensitivity (GNSS)		-167	dBm
UART	AT commands	921600	bps
USB	AT commands		
MSL	Moisture Sensitivity Level	4	

### 2.2 Hardware and layout

The EVAL-TT-RW1/TT-RR1 is designed around the OEM TT-RW1/TT-RR1 module. It uses all I/Os, as well as custom I/Os (unused by the standard firmware). The top layer may be found [Top view of EVAL-TT-RW1](#) (page 4)

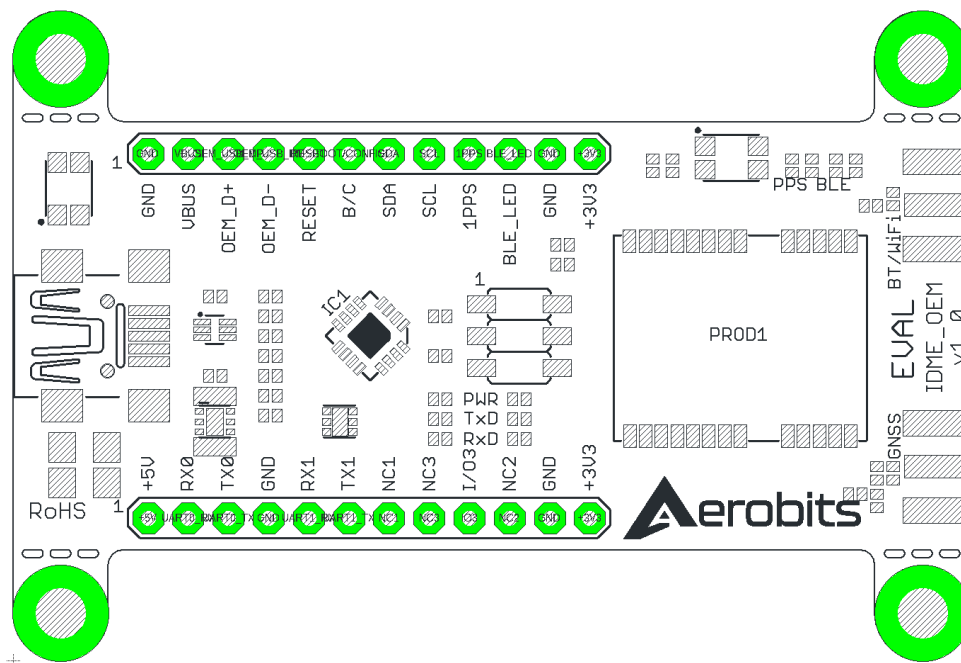


Fig. 1: Top view of EVAL-TT-RW1

## 2.3 Electrical specification

### 2.3.1 Absolute maximum ratings

Table 2: Absolute maximum ratings.

Parameter	Min	Max	Unit
Storage temperature	-5	+40	°C
Supply voltage (VCC)	2.7	3.6	DCV
Supply voltage (via USB)	4.75	5.25	DCV
Other pin voltage	-0.3	VCC + 0.3	DCV
RF input BLE	–	+5	dBm
RF input Wi-Fi	–	+5	dBm
RF input GNSS	–	0	dBm

### 2.3.2 Recommended operation conditions

Table 3: Recommended operation conditions.

Parameter	Min	Typ	Max	Unit
Operation temperature	-30	–	+85	°C
Supply voltage (VCC)	3.0	3.3	3.6	DCV
Supply voltage (via USB)	4.9	5.0	5.1	DCV

### 2.3.3 General electrical parameters

Table 4: General electrical parameters.

Parameter	Description	Min	Typ	Max	Unit
Current consumption		–	80	–	mA
Input Low Voltage	RESET, UARTs, CAN, USB, SPI, I2C	-0.3	–	0.8	DCV
Input High Voltage	RESET, UARTs, CAN, USB, SPI, I2C, GPIO	-0.3	–	0.8	DCV
Output Low Voltage	UARTs, CAN, USB, I2C, SPI, GPIO	–	–	0.4	DCV
Output High Voltage	UARTs, CAN, USB, I2C, SPI, GPIO	VCC - 0.4	–	–	DCV

### 2.3.4 Most important components

Pin arrangement of EVAL-TT-RW1 is shown on the figure below:

Table 5: Most important components.

RefNo	Description
CON1	Mini USB connector
CON2	Extensions connector I
CON3	Extensions connector II
BT/WiFi	Remote ID RF input
GNSS	GNSS RF input
JP1	Jumper group
SW1(C)	BOOT/CONFIG switch
SW2(R)	RESET switch
D1	POWER LED
D2	UART TX LED

continues on next page

Table 5 – continued from previous page

RefNo	Description
D3	UART RX LED
BLE	SYSTEM/STATUS LED
PPS	PPS signal LED
IC4	OEM TT-RW1

### 2.3.5 Connectors and jumpers

Table 6: Connector CON2 description.













CON2	No.	Marking	Function
	1	GND	Ground
	2	VUSB	Power supply of USB
	3	OEM_D+	USB D+ line
	4	OEM_D-	USB: D- line
	5	RESET	Reset signal
	6	BOOT/CFG	BOOT/CONFIG signal
	7	SDA	I2C: data line
	8	SCL	I2C: clock line
	9	1PPS	GNSS: 1 pulse per second input (time reference)
	10	BLE_LED	SYSTEM LED
	11	GND	Ground
	12	+3V3	3.3V Power supply

Table 7: Connector CON3 description.
















CON3	No.	Marking	Function
	1	+5V	5V Power supply
	2	RX0	UART0 – Receive line
	3	TX0	UART0 – Transmit line
	4	GND	Ground
	5	RX1	UART1 – Receive line
	6	TX1	UART1 – Transmit line
	7	NC1	Not connected
	8	NC3	Not connected
	9	I/O3	Input/Output pin
	10	NC2	Not connected
	11	GND	Ground
	12	+3.3V	3.3V Power supply

Table 8: Jumper group JP1 description.

JP1	No.	State	Function
	1	Closed	3.3V power supply provided by on-board regulator (default)
		Open	3.3V power supply provided by CON3 (PIN12)
	2	Closed	UART TX via USB (default)
		Open	UART TX via CON3 (PIN3)
	3	Closed	UART RX via USB (default)
		Open	UART RX via CON3 (PIN2)

### 2.3.6 LED indicators

Table 9: LED indicators.

LED	Color	Description
D1	Green	ON: Power supply
D2	Red	ON: OEM TT-SC1 transmitting data
D3	Yellow	ON: OEM TT-SC1 receiving data
BLE	Blue	In BOOTLOADER state: continuous on In CONFIGURATION state: blinking at 5Hz In RUN state: GNSS no fix - blinking at 5Hz, GNSS has fix - blinking at 1Hz
PPS	White	Blinking at 1Hz when has PPS signal

### 2.3.7 Layout

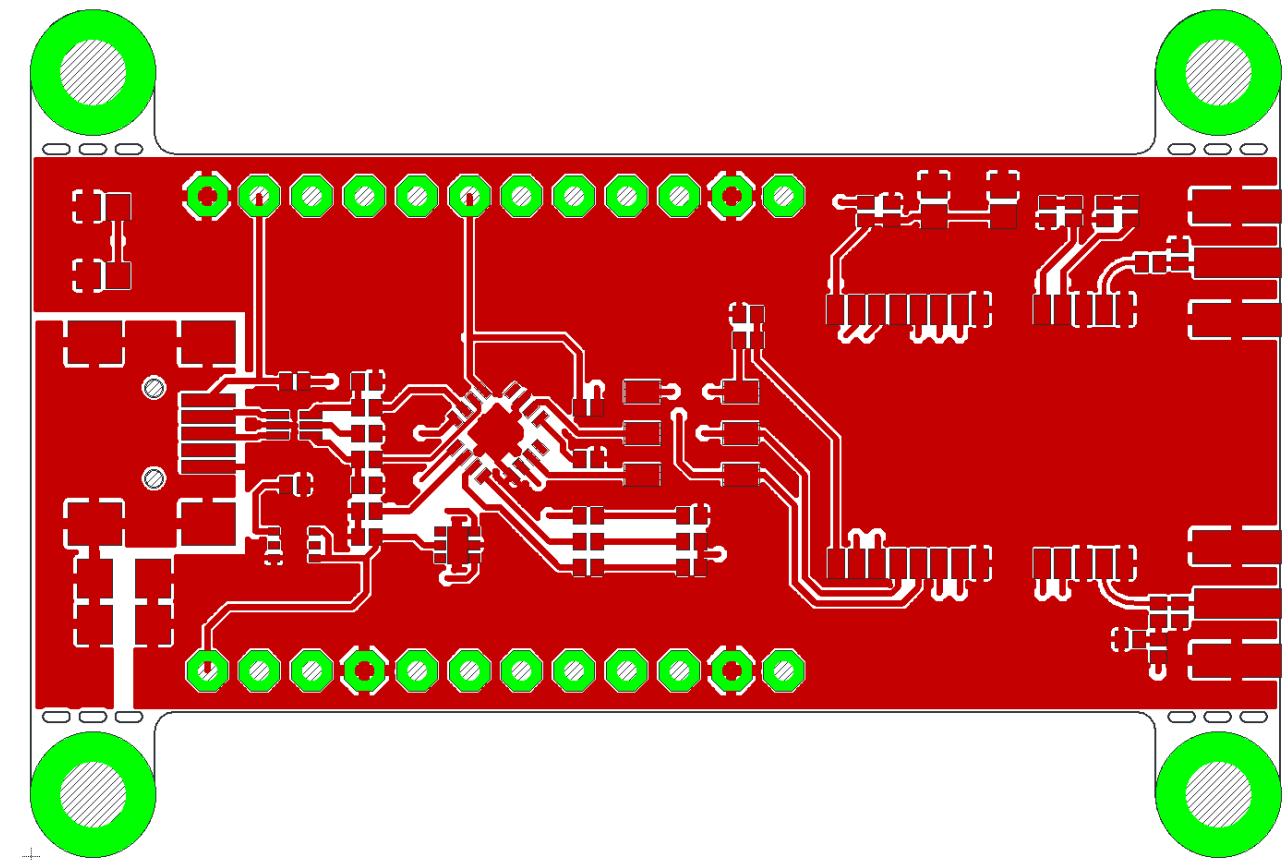


Fig. 2: Top copper layer of EVAL-TT-RW1

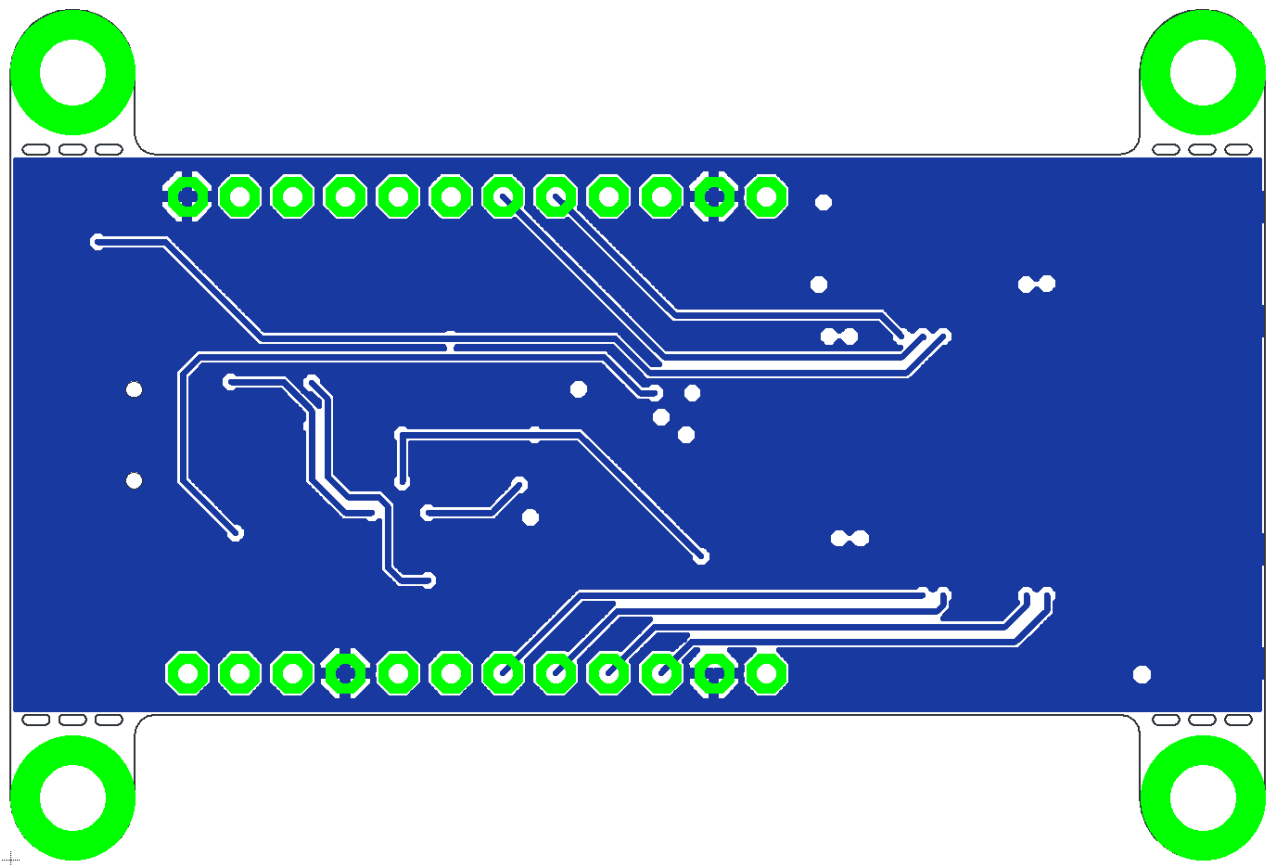


Fig. 3: Bottom copper layer of EVAL-TT-RW1

### 2.3.8 Electrical diagram

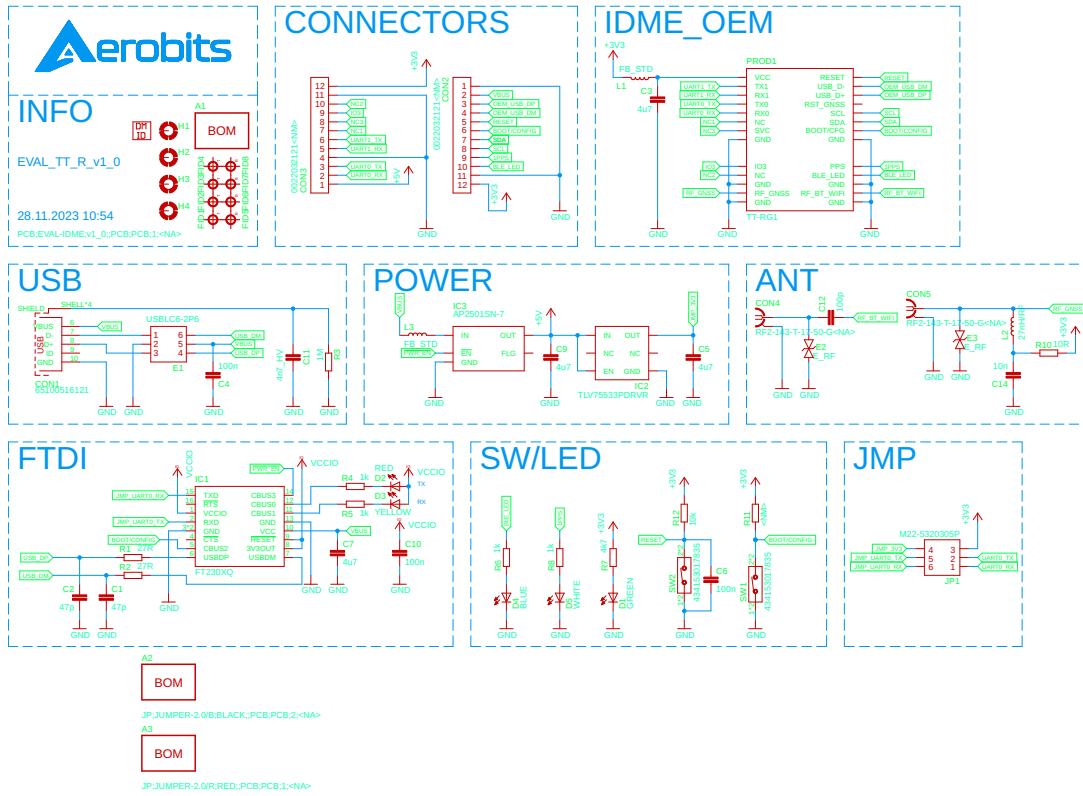


Fig. 4: Electrical diagram of EVAL-TT-RW1

## 2.4 Mechanical specification

### 2.4.1 Dimensions

Table 10: Absolute maximum ratings.

Parameter	Value
Dimensions	60.5 x 27.0 x 1.5 mm
Weight	12.0 g

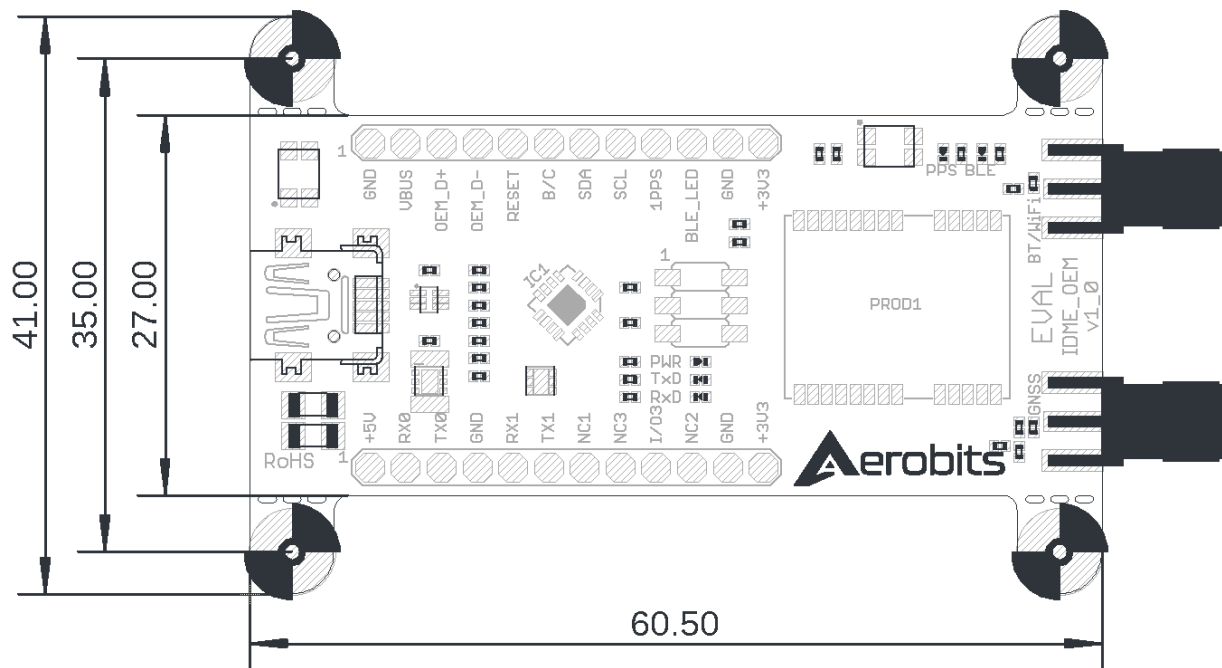


Fig. 5: Footprint of EVAL-TT-RW1

### 2.4.2 Connectors

Table 11: Descriptions of used connectors.

Description	Type	Function	Mating connector
GNSS/BT/WiFi	RF2-143-T-17-50-G	RF connector	RF2-01A-02-50-G
CON1	65100516121	Power and Data	CBL-UA-MB-15WP

### 3 Disclaimer

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