



## **USER MANUAL**

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Antenna deployment tester

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# ANTENNA DEPLOYMENT TESTER

## USER MANUAL

This user manual is specially designed to detail the EnduroSat antenna deployment tester and its features.

Please read carefully the manual before unpacking the elements to ensure safe and proper use.



Figure 1 – EnduroSat Antenna deployment tester

## 1 CHANGE LOG

Date	Version	Note
23/Nov/2017	Rev 1	Document created
22/Feb/2018	Rev 1.2	Detailed embedded deployment algorithms, interface connector pinout, minor text enhancements

## 2 OVERVIEW

The EnduroSat antenna deployment tester is a device which allows to develop and test the I2C communication for the UHF antenna deployment. It can also provide feedback on the deployment status of the UHF Antenna through its buttons thus eliminating the need to perform deployment of the flight model of the antenna on the ground.

## 3 HIGHLIGHTED FEATURES

- Dimensions: 78x45x18mm
- Material: Aluminum 6061;
- Weight: 85 g;
- LED indication for burning wire resistors activation.

## 4 LED INDICATIONS

The device has 2 LEDs for each antenna rod: Ax for the primary heaters and Bx for the back-up heaters (x is the number of the rod). The primary heaters (Ax) are represented with green LEDs and the back-up heaters (Bx) with orange LEDs.

The tester has 4 buttons (Ant x) for each of the antenna rods. When the button is pressed it simulates the deployment of the respective antenna rod. An additional button Ant ALL simulates the release of all antenna rods.

## 5 CONNECTOR

The connector MOLEX 504050-0491 location and pinout are shown in the figures and table below.



Pin	Mnemonic	Description
1	Ground	Ground
2	I2C SDA	I <sup>2</sup> C data pin
3	I2C SCL	I <sup>2</sup> C clock pin
4	+5V	+5V Power Supply Bus

## 6 ELECTRICAL CHARACTERISTIC

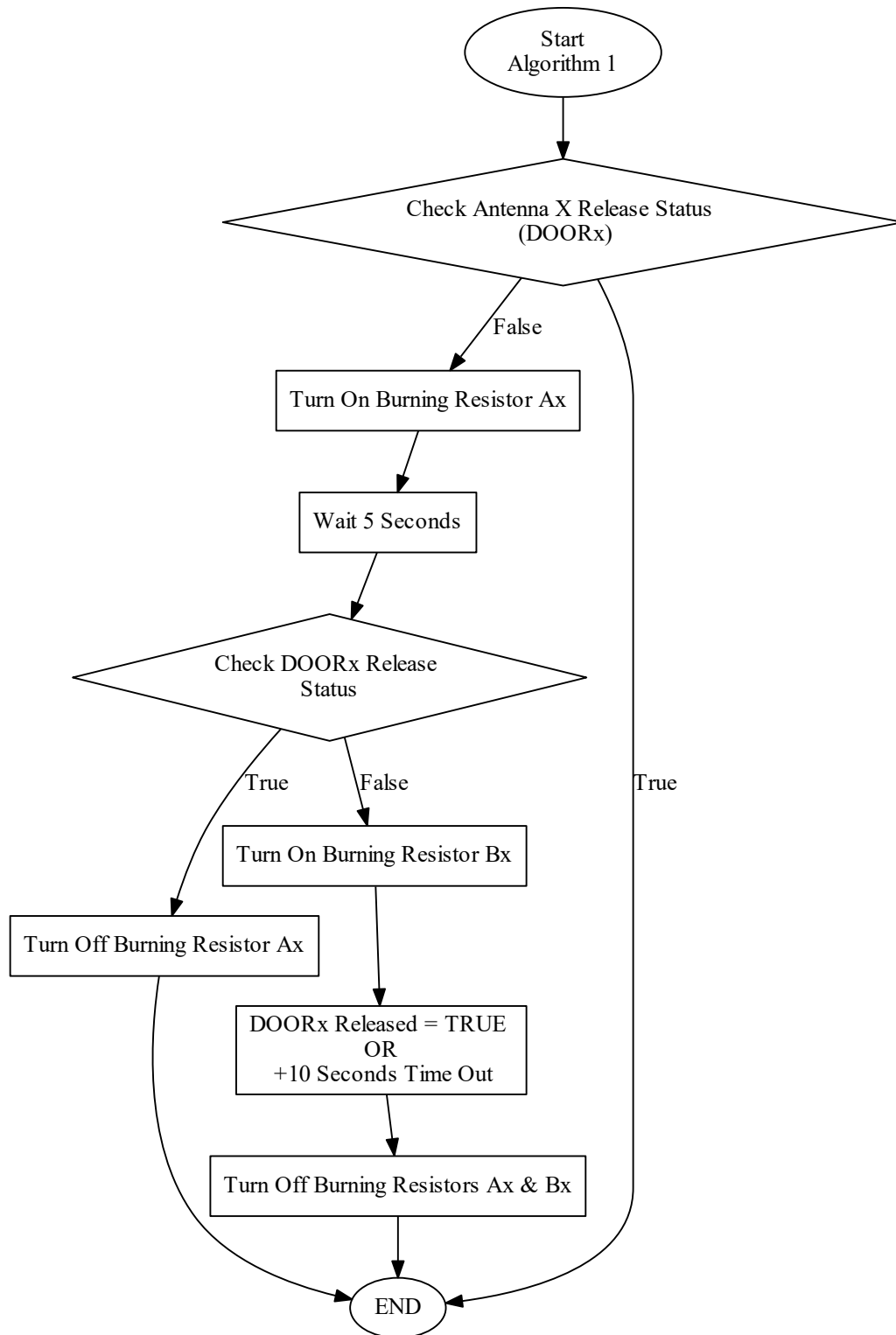
The antenna deployment tester simulates the same power consumption as of the real antenna.

Parameter	Condition	Min	Typ	Max
Supply Voltage [V]		4.8	5	
Current Consumption [mA]	Sleep mode		1	
	Primary burning resistor		250	
	Primary and Back-up burning resistor		500	

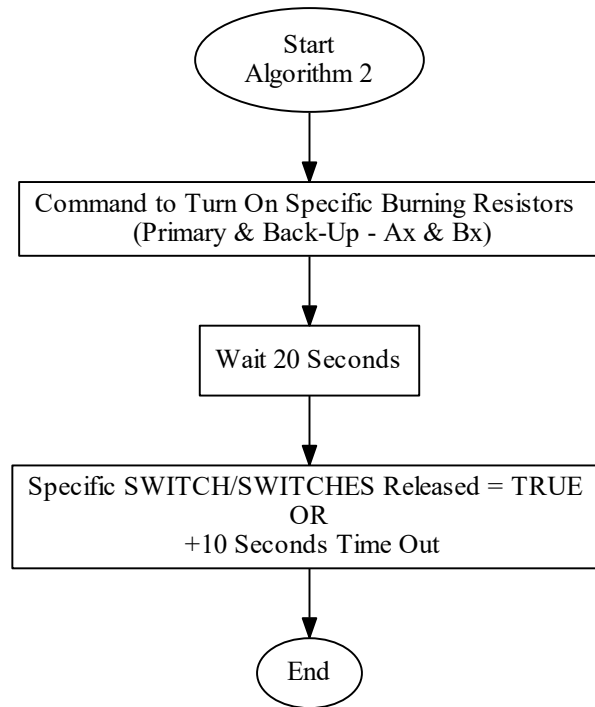
## 7 ANTENNA EMBEDDED DEPLOYMENT ALGORITHMS

### 7.1 ALGORITHM 1:

X defines the specific numbering of antenna rods



## 7.2 ALGORITHM 2:



## 8 WARNINGS

This tester is intended to facilitate the software development and verification of the I2C communication for the deployment of EnduroSat UHF antenna and reading of the feedback only. It does not simulate the additional redundancy feature for direct control of the burning resistor chains.



This product uses semiconductors that can be damaged by electrostatic discharge (ESD). Observe precautions for Handling



Sensitive Electronic device. Do not ship or store near strong electrostatic, electromagnetic, magnetic or radioactive fields.