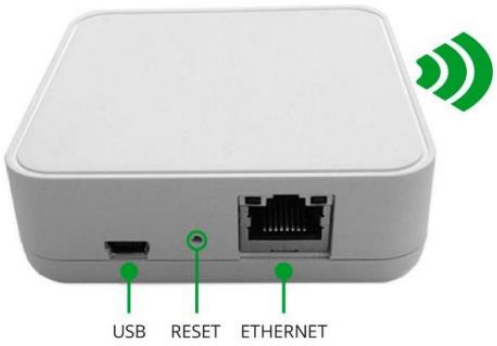
Anchor 1.4

Reference static device for RTLS

Anchor for RTLS TDoA

Features

- Real-Time Location Based on UWB and TDoA Technique
- Decawave UWB Radio, 3-7GHz
- Manageable via web browser and RTLS Studio
- Ethernet and Wi-Fi backhaul
- Firmware upgrade via Ethernet



UWB Location

Ethernet Backhaul

WiFi Backhaul

Anchor is a reference device with a known position. Set of Anchors creates location infrastructure where Tags are being located.

The primary goal of the device is to gather radio signals from mobile locators called Tags and forward them to RTLS Studio where the position is being estimated. Moreover, Anchors can also receive data from sensors equipped within the Tag such as acceleration, orientation, button event or custom data payload. Data are further exposed to the user via open API.

Generally, the Anchor is an IP network device equipped with an Ethernet/Wi-Fi interface for both data backhaul and/or power supply. Anchors are configured and managed via RTLS Studio software. They are delivered with holders to simplify the installation in any premises. They are usually mounted above Tags which ensures maximum coverage and minimizes obstacles blocking its communication line.

DIMENSIONS	70x74x25 mm
WEIGHT	72g
POWER SUPPLY	USB or Passive PoE
POWER REQUIREMENTS	1.5W USB DC 5V, ≈ 300mA Passive PoE 48V, ≈ 30mA
TEMPERATURE	0 – 50 °C
RADIO RANGE	15-50m*
UWB ANTENNA	Omnidirectional
WARM-UP TIME	20 minutes
PLACEMENT	For Indoor Use Only Office, Warehouse, and Light industry environment.

***DEPENDS ON LINE OF SIGHT CONDITIONS, RADIO SETTINGS AND ENVIRONMENT**

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1 Anchor Power Supply

There are two options to power the Anchor. It can be powered either via USB or Passive PoE. Only one interface can be used at one time, never connect both.

- **Power Supply from USB – DC 5V, 500mA – mobile battery pack or USB Adaptor with maximum cable length 1.8m.**

  Do not use longer USB cables, since cable voltage drop can cause instability of the device.

- **Power from Passive PoE Injector. DC voltage 24V/48V injected into unused Ethernet pairs** (Pairs 4,5 positive terminal, 7,8 negative terminal)

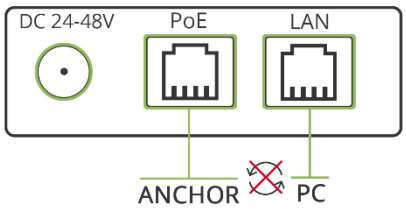
  Always connect Anchor's Ethernet to network infrastructure inside a building.

Always use galvanic isolated ⧈ **power adaptor with short circuit protection.** Verified PN are: GS36E48-P1J Meanwell.

Please note Passive PoE is not compliant with PoE IEEE 802.3af / Cisco. Anchor v1.3 cannot be powered from those PoE ports. To use IEEE 802.3af Active PoE to power the Anchors, you need to get a converter to the Passive PoE from the IEEE 802.3af.

Single-port Injector

Contains DC Jack, PoE Port and Lan port.



Multi-port Injector for 19" rack

"Data LAN" ports are connected to the network Switch, "Power+Data" ports are connected to the Anchors. Never connect "Power+Data" ports to the computer or other network devices.

When the Anchors are connected to a stable power supply, a blue LED should start to blink on the side of the enclosure.

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2 Default IP Settings

Connect Anchor to PC via Ethernet. Anchor has implicit static IP configuration

- address 192.168.225.200
- mask 255.255.255.0

Set computer to the same address scope and point web browser to 192.168.225.200.

3 Reset to Defaults

1) Power up the device
2) Press the RESET button and hold for 3s
3) Magenta LED indicator blinks once and the Anchor is in its default settings.

Default configuration is *:

- Blink Channel: CH5 / RF Profile Blink: RF4
- Sync Channel: CH5 / RF Profile Sync: RF1

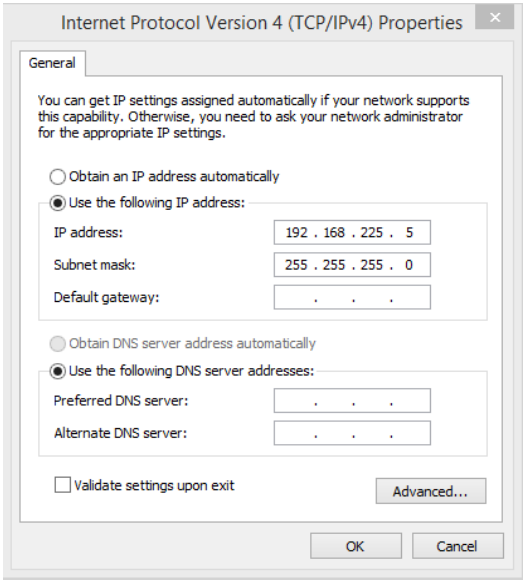
***Default configuration could be changed please read the news on partner portal regarding the default configuration.**

4 Firmware Update

Firmware is uploaded to Anchor via Ethernet interface. Firmware upgrade is done over UDP messaging on L2 layer. Therefore, computer must be connected directly to anchor or on the same L2 segment (no router on the path).

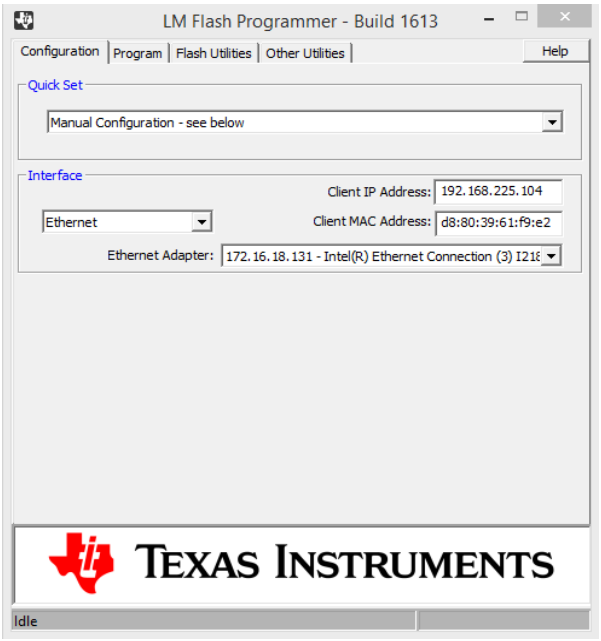
Always make sure that the power supply is stable during the firmware update. You may need to disable all other interfaces in the Network and Sharing Center (Wi-Fi, Bluetooth etc.). Right-click on the interfaces and select "Disable". Please also disable Firewall in case of troubles.

1) Connect the Anchor directly into your computer by an Ethernet cable.
2) Download and install the LM Flash Programmer.
3) Go to Windows' Network and Sharing Center and change your Ethernet IP address like this:



4) Run the LM Flash Programmer as an Administrator

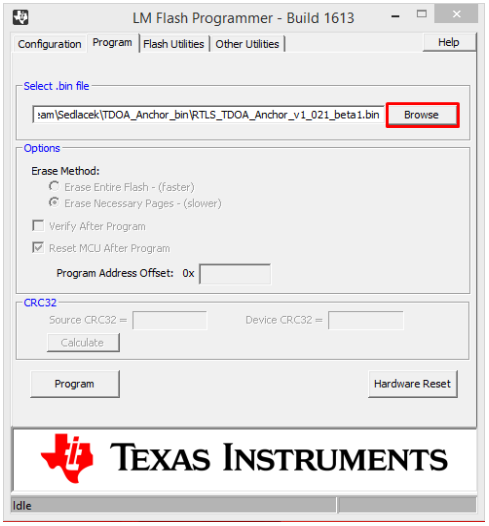
5) On the first page, select Manual Configuration, select the Ethernet Interface and type in the IP and MAC addresses of the Anchor that you wish to update:



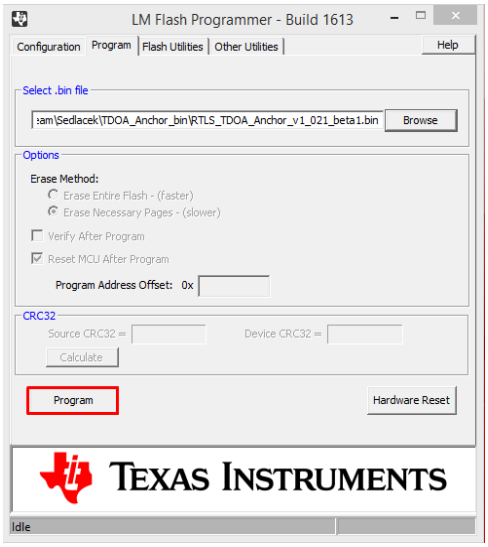
You can find the addresses from RTLS Manager, for example from the Anchors Summary tab.

Go to the “Program” tab and find the configuration file by clicking “Browse” and select path to a new anchor firmware file. Please double check Anchor’s hardware revision to match to the firmware before further step.

The latest firmware can be obtained through Sewio Partner Portal.



6) Then click on “Program”:



You should see the progress in the lower bar. If there is no progress at all, **make sure that all interfaces besides Ethernet are disabled!**

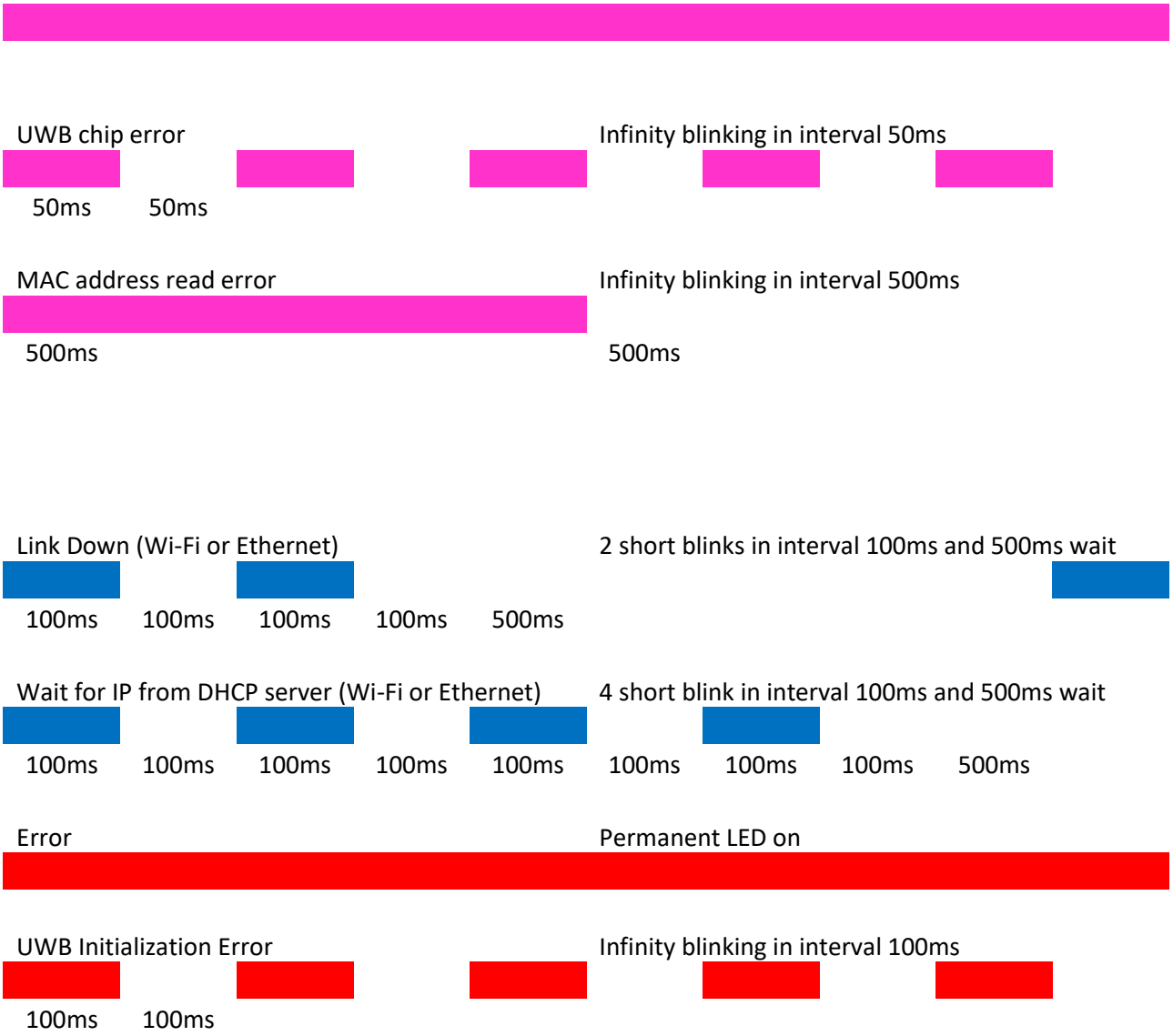
7) After the upload is finished it will be signalized by the “Done!” message.

8) You can check the new configuration in RTLS Manager on the Anchors Summary.

Notice: Upgrading to FW 1.xxx or 2.xxx branch will reset anchor to the default. So anchor will change the IP address to 192.168.225.200. Upgrade to FW 3.xxx will retain current configuration.

5 LED Indication

Status	**Indication**
Global Error	Permanent LEDs on



6 Orderable Device Information

Name	Info	Status
Anchor Router Cube 1.4	Ethernet backhaul only	Active
Anchor Router Cube 1.4 Wi-Fi	Ethernet and Wi-Fi backhaul	Active

Table 1 Device availability