

Doc Number	X134290	Issue:	1	Author	Shervin Fallanhejad
Product / Project:	iTAG X30 iTAG X20 iTAG X10	For release status refer to Extronics DDM		Date	03 October 2024

1 Document Purpose

The purpose of this document is to provide iTAG X30, iTAG X20 and iTAG X10 antenna information to satisfy the requirements of the iTAG X30, iTAG X20 and iTAG X10 FCC certification.

2 Antenna Information

The iTAG X30, iTAG X20 and iTAG X10 contain the following transmitters:

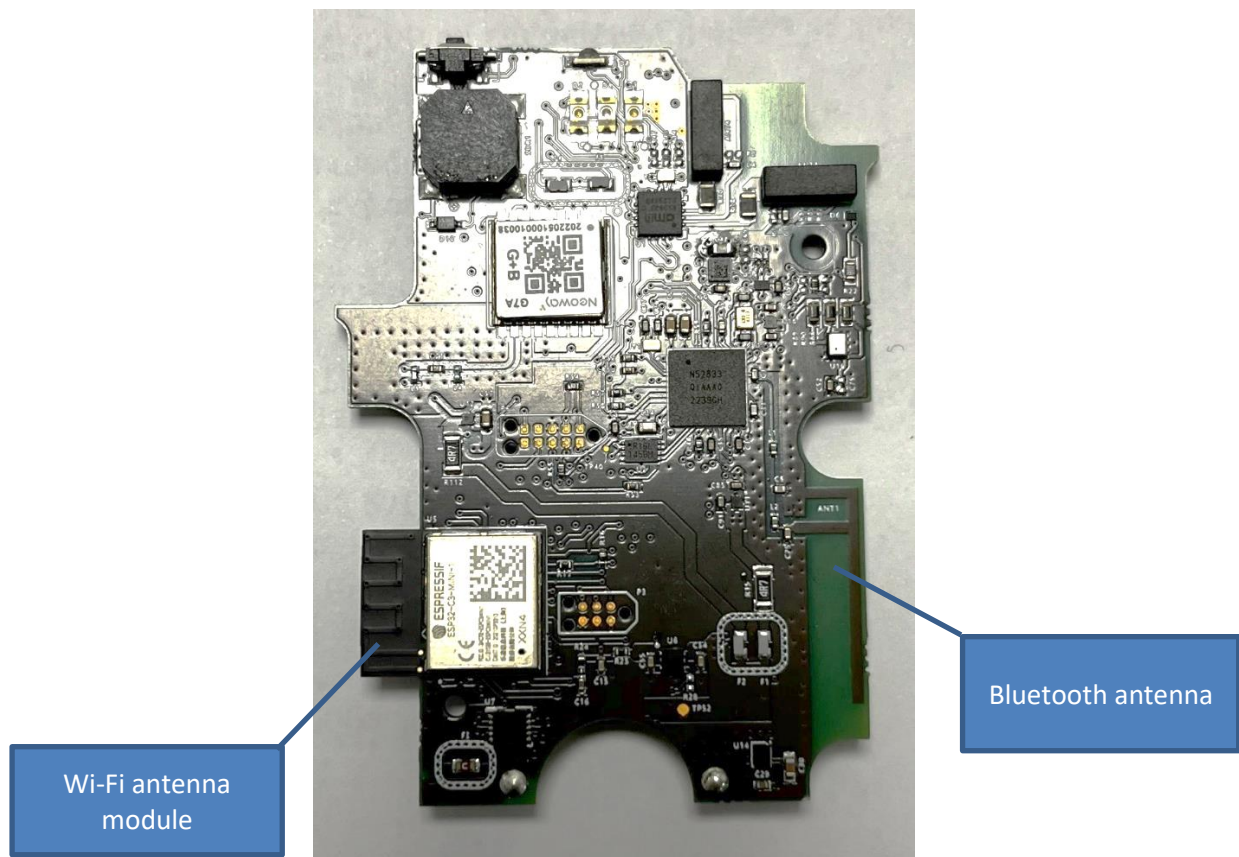
- Wi-Fi (2.4GHz)
- Bluetooth (2.4GHz)


The Wi-Fi functionality in the ESP32-C3-MINI-1 module uses a PCB trace antenna that is integrated directly into the module. For Bluetooth, the transceiver is embedded in the nRF52833 chip and connected to an inverted F-shaped PCB trace antenna on the board. The characteristics of the antennas are as follows:

- Wi-Fi. Isotropic gain: 3.96 dBi
- Bluetooth. Isotropic gain: 1.7 dBi

The Bluetooth antenna is designed by Extronics Ltd.

3 Antenna Location

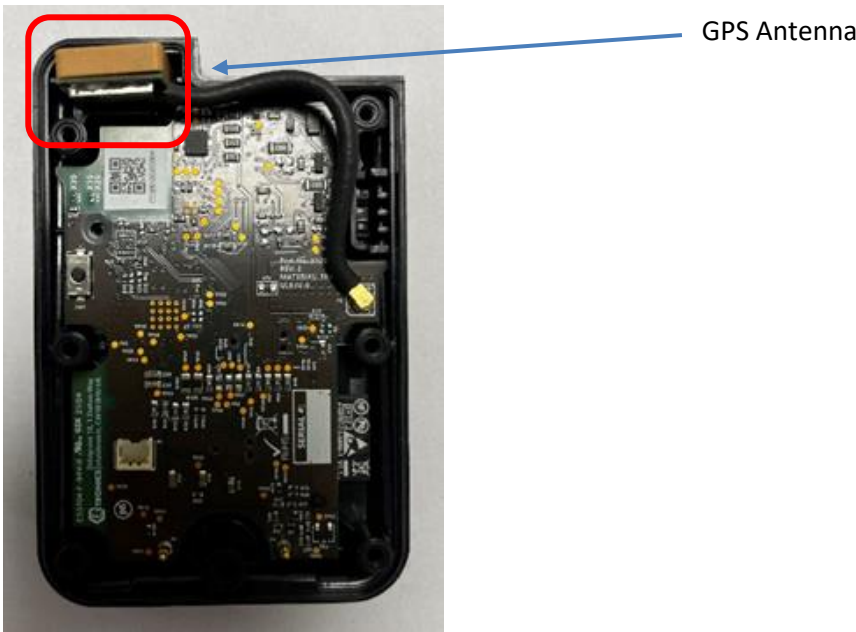


				Report Antenna Information FCC iTAG X30 iTAG X20 iTAG X10	
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4 Other Antennas

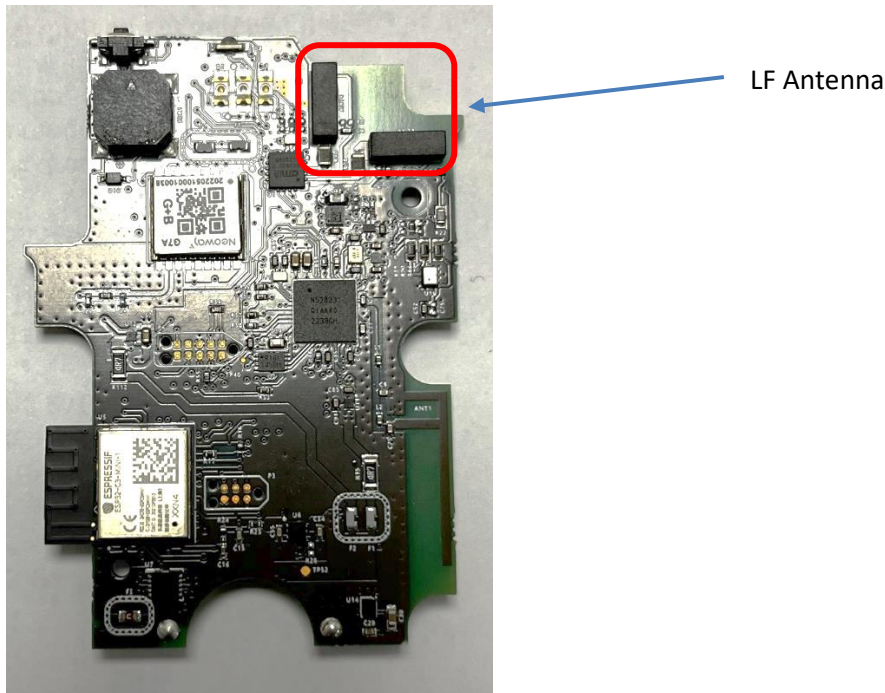
The iTAGX30, iTAG X20 and iTAG X10 also contain a GPS receiver and a 125KHz LF receiver.

4.1 GPS Receiver Antenna



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4.3 125KHz LF Receiver Antenna



Antenna information:

Quantity: 2

Designator: ANT3 and ANT4

Dimensions: 7.8 x 2.2 x2.5mm max

Turns: 1018 typical

Antenna Manufacturers and Model Numbers:

Antenna Type	Manufacturer	Model Number / Description	Address
Wi-Fi PCB Trace Antenna	Espressif Systems	Integrated on ESP32-C3-MINI-1 module	Espressif Systems (Shanghai) Co., Ltd. No. 800 Jiuxin Rd, Shanghai 200241, P.R. China
BLE PCB Trace Antenna	Extronics Ltd (Internal Design)	Integrated in iTAG Gen 2 Main PCB (nRF52833 SoC)	Extronics Ltd 1 Dalton Way, Midpoint 18, Middlewich, Cheshire, UK, CW10 0HU
GPS Antenna	Maxtena Inc.	MPA-154 (Part #: 108-00110-01) – Ceramic Patch Antenna	Maxtena Inc. 20310-A Seneca Meadows Pkwy Germantown, MD 20876 USA
LF Antenna (125 kHz)	TDK Corporation	TP0702CAP-1080J – Low-Frequency (LF) Coil Antenna	9-1, Shin-Murayama, 1-chome, Kodaira-shi, Tokyo 187-8511, Japan