

# Specification

## Advanced LTE WiFi Gigabit Router

Plug & Play



Model: BT122i

**2CA 4x4 MIMO & 3CA / 4CA 2X2 MIMO**

**BLACK TORNADO**



Maintenance – Free Connections



## Introduction

LTE (Long Term Evolution) is already gaining momentum as the world's most rapidly deployed cellular technology, giving mobile wireless broadband services to millions of users worldwide. Consumers are increasingly looking for always on, always connected mobile experience delivering high data rate services on small form factor mobile devices whilst at the same time expecting long battery life to minimize recharge cycles.

BT122i is highly advanced LTE indoor multi-service product solution for **Enterprise** and **SHSO** application. Specifically designed to meet integrated data, and dual bands Wi-Fi access needs for residential, business and enterprise users.

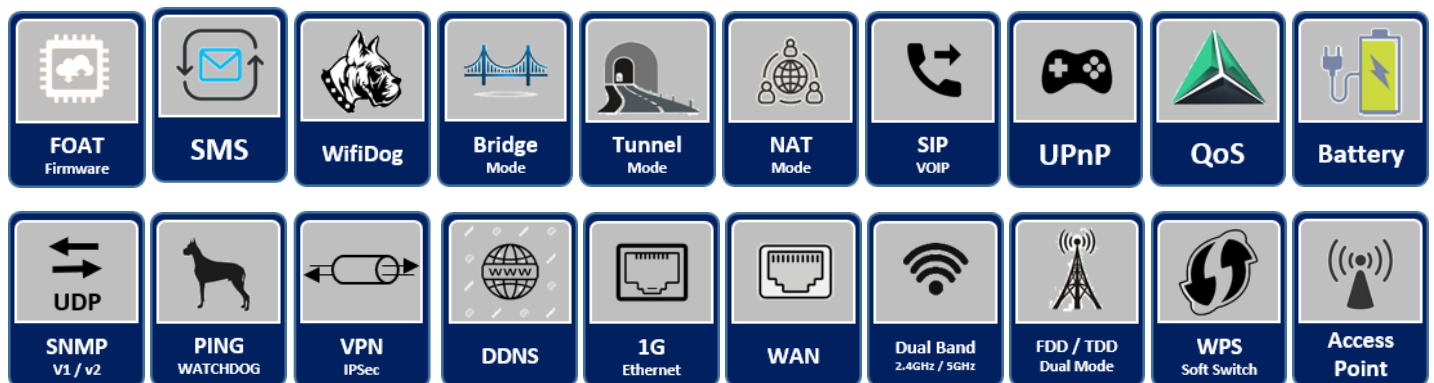
In this product, we provide Gigabit networking and dual bands Wi-Fi AP functionalities, it enables wide service coverage and provides high data throughput and networking features to customers who needs easy broadband access, hot-spot Wi-Fi connectivity.

## Interactive User Interface



## Technical Features

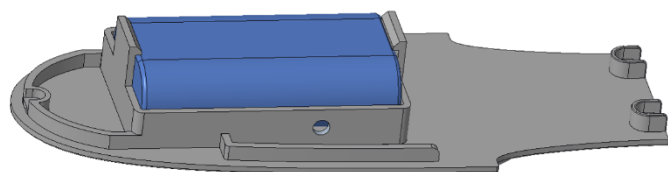
- Support Dual Mode LTE-TDD / LTE-FDD
- Support Dual Band Wi-Fi (2.4GHz / 5GHz) Concurrent
- Support Dual Stack IPv4 / IPv6
- Support Carrier Aggregation Combination (Inter / Intra)
- Support Category 12/15 (600Mbps Down Link, 150Mbps Up Link)
- Support 2 LAN ports, 1GE
- Support 1 WAN port
- Support Multi APN Management
- Support Multi SSID
- Support Short Message System
- Support Small Network Management Protocol (SNMP)
- Support CWMP TR069 and Certification (Primary and Secondary)
- Support Server Network Time protocol (SNTP).
- Support EARFCN lock, frequency lock, and PCI lock, PLMN lock, ICCID lock/
- Support two login access, root for administrator and admin for clients
- Support DDNS or DNS Agency
- Support WPS Soft Button and Push Button
- Support Routing (NAT, Tunnel, and Bridge Mode)
- Support VPN (L2TP, GRE, PPTP, VXLAN)
- Support IPsec VPN (**Optional**)
- Support UPS Battery for portability 6400mAh ~24 hour (**Optional**)
- Support Wi-Fi-Dog Solution (**Optional**)



## BASIC SPECIFICATIONS

LTE Standard	3GPP latest Release, 8, 9, 10 & 11
Ethernet LAN/WAN Port	1*RJ-45 port LAN 10/100/1000 auto-sensing, 1*RJ-45 port LAN / WAN
Smart Wi-Fi Dual Band	2.4GHz (802.11 b/g/n and MIX) 5GHz (802.11 ac)
LED Indicators	8 Blue LED indicators (PWR, Wi-Fi 2.4GHz, Wi-Fi 5GHz, LTE, RF and 4 Signal Level)
USIM	1.8v/3.0v Mini-SIM (2FF)
RAM / Flash	1Gb / 2Gb
Antenna	Wi-Fi: 2 Separate PCB Built-in high gain, 2.4GHz, 5GHz LTE: 4 Separate internal 5dBi
Restore Button	Press for 10 Sec. to factory restore settings
Power Switch	ON/OFF Button
Wi-Fi Switch	ON/OFF Push button 15 Sec. hold
WPS Switch	ON/OFF Push button 10 Sec. hold
Front Panel LED	ON/OFF Push button
Power Supply	Input: Universal range 100V to 240V AC, Output 12VDC / 2A
Power Bank	Chargeable Battery and charging system (Optional)

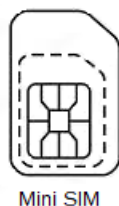
## SHELL DESIGN



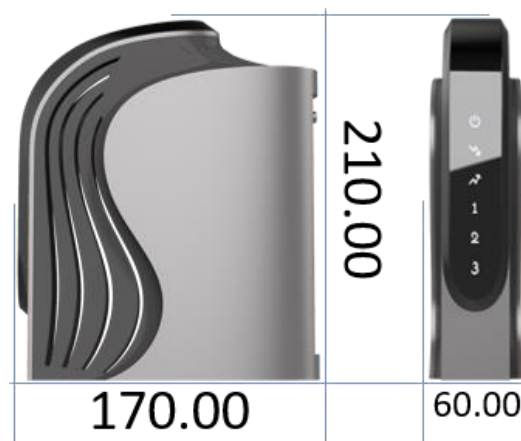
UPS Battery 6400mAh

Weight 300 + 100 gram

Body Color: Black, White, Grey



Mini SIM



## LTE SPECIFICATIONS

Duplex Mode	Dual Mode (TDD Only, FDD Only TDD/FDD Mixed)
Support Bands	FDD Band: B1, B3, B7 TDD Band: B40, B42
Bandwidth	1.4, 3, 5, 10, 15, 20MHz
Carrier Aggregation & MIMO	2CA 4x4 MIMO 3CA / 4CA 2x2 MIMO
Max Output Power	23 ± 2dBm per Tx antenna
Tx / Rx	4T8R, 2T8R and 2T4R configurations
Uplink channel	PUCCH, PUSCH, PRACH
Downlink channel	PDCCH, PDSCH, PBCH, PCFICH, PHICH
Peak Rate (20 MHz)	FDD+TDD: DL 600 Mbps, UL 150 Mbps
Number of Resource Blocks	6 ~ 110
Transmission Mode	TM 1,2,3,4,7,8,9
Modulation	DL: QPSK, 16QAM, 64QAM UL: QPSK, 16QAM, 64QAM
Receive Sensitivity	-94dBm @ QPSK, 20 MHz, 25°C
Antenna Type	ABS
Antenna Gain	5dBi
Antenna Efficiency	>60% or more
Polarization	Linear, Vertical
VSWR	700~2700<4 and 3300~3800<3
Radiation	Omni-directional
Admitted Power	1w

## LTE RADIO STATUS INFORMATION

General Info	USIM	Operator	EMM State
	PLMN	eNodeB ID	RRC State
	ICCID	Cell ID	TAC
	IMSI	C-RNTI	ECI
Signal Details & Carrier Aggregation	PCI	EARFCN	Bandwidth
	SINR	CINR	CQI
	RSSI	RSRQ	RSRP
	DL MCS	UL MCS	RANK
	DL Frequency	DL Frequency	Band
	Transfer mode	Intra Band	Inter Band
	TXPWR	PCC	SCC (0,1,2,3)

## SOFTWARE SPECIFICATIONS

LTE Network Mode	<ul style="list-style-type: none"> <li>NAT Mode</li> <li>Bridge Mode</li> <li>Tunnel Mode</li> </ul>
LAN Network	<ul style="list-style-type: none"> <li>IPv4 address</li> <li>DHCP Statics Lease</li> <li>DHCP Relay</li> <li>DHCP Server, Client</li> </ul>
Mobile Network Connection	<ul style="list-style-type: none"> <li>Auto</li> <li>Manual</li> </ul>
4G LTE Connection	<ul style="list-style-type: none"> <li>Roam (Enable / Disable)</li> <li>Power Scan (First Detected Cell, Strongest Cell)</li> <li>Duplex Selection: (FDD/TDD Mixed), TDD Only, FDD Only</li> <li>Dedicated Mode: PCI, EARFCN, Frequency &amp; Cell</li> <li>Cell Scan</li> <li>Neighbor Cell Auto Scan</li> <li>APN Management Settings</li> </ul>
Wi-Fi (2.4GHz)	<ul style="list-style-type: none"> <li>Wi-Fi Enable / Disable</li> <li>Bandwidth: 20MHz / 40MHz</li> <li>Access Point Isolate</li> <li>Channel Selection: Manual, Auto</li> <li>Channel Range 1 ~ 13</li> <li>SSID: Hidden / Disable / Edit, Support four SSID</li> <li>Security type: No Authentication, WPA-PSK, WPA2-PSK, WPA/WPA2-PSK, WPA/WPA3-PSK</li> </ul>

	<ul style="list-style-type: none"> <li>WPA Algorithm: (TKIP/AES)</li> <li>WPS Enable / Disable</li> <li>Country Code: IRAN</li> </ul>
Wi-Fi (5GHz)	<ul style="list-style-type: none"> <li>Wi-Fi Enable / Disable</li> <li>Bandwidth: 20MHz / 40MHz / 80MHz (Auto)</li> <li>Access Point Isolate</li> <li>Channel Selection: Manual, Auto</li> <li>Channel Range 36 ~ 64</li> <li>SSID: Hidden / Disable / Edit,</li> <li>Security type: No Authentication, WPA-PSK, WPA2-PSK, WPA/WPA2-PSK, WPA/WPA3-PSK</li> <li>WPA Algorithm: (TKIP/AES)</li> <li>Country Code: IRAN</li> </ul>
WAN Network	<ul style="list-style-type: none"> <li>WAN (LTE)</li> <li>WAN (Input Access)</li> </ul>
VPN Server	<ul style="list-style-type: none"> <li>IPsec</li> <li>L2TPv2 &amp; v3</li> <li>GRE</li> <li>PPTP</li> <li>VxLAN L2/L3</li> </ul>
Open NAT	<ul style="list-style-type: none"> <li>Port Range Forwarding</li> <li>Port Range Triggering</li> <li>DMZ Setting</li> <li>UPnP Setting</li> <li>ALG Rule Setting</li> </ul>
Remote Access	<ul style="list-style-type: none"> <li>DDNS or DNS Agent</li> <li>SNMP</li> </ul>
Firewall	<ul style="list-style-type: none"> <li>Terminal Firewall</li> <li>IPv4/IPv6 Filter (Black List / white List)</li> <li>MAC Filter (Black List / white List)</li> <li>URL Filter (Black List / white List)</li> </ul>
System Security	<ul style="list-style-type: none"> <li>Remote Web Login</li> <li>Access Control</li> <li>Block Port scanner</li> <li>Block SYN Flood</li> <li>SPI Firewall</li> </ul>
Terminal Security	<ul style="list-style-type: none"> <li>SSH</li> <li>Telnet</li> </ul>
Device Management	<ul style="list-style-type: none"> <li>SNMP v3</li> <li>SAS</li> </ul>

CWMP	<ul style="list-style-type: none"> <li>• Primary TR069</li> <li>• Certificated Primary</li> <li>• Secondary TR069</li> <li>• Certificated Secondary</li> </ul>
Network Diagnostics	<ul style="list-style-type: none"> <li>• TCP Dump</li> <li>• Ping</li> <li>• Traceroute</li> <li>• iPerf</li> </ul>
Administration	<ul style="list-style-type: none"> <li>• Web Protocols (https 443 and http 80)</li> <li>• NTP Setting</li> <li>• MTU Setting</li> <li>• PIN Management</li> <li>• USIM Setting</li> <li>• ICCID Setting</li> </ul>
Statistics	<ul style="list-style-type: none"> <li>• LTE Status</li> <li>• System up time</li> <li>• Device Status</li> <li>• Firewall Status</li> <li>• Roaming Status</li> <li>• Carrier Aggregation Status</li> </ul>
Network Users	<ul style="list-style-type: none"> <li>• DHCP Client List</li> <li>• Wi-Fi 2.4GHz Client List</li> <li>• Wi-Fi 5GHz Client List</li> </ul>
Maintenance	<ul style="list-style-type: none"> <li>• Date and time setting</li> <li>• Restore Factory Settings</li> <li>• Backup Configuration file</li> <li>• Firmware Upgrade locally Web UI</li> <li>• Firmware Over The Air (FOTA)</li> <li>• Ping Wi-Fi dog Setting</li> </ul>
Routing	<ul style="list-style-type: none"> <li>• Current Route Status</li> <li>• Routing Map (ARP / Active Route)</li> <li>• Static Routes (LAN / WAN / L3 VPN)</li> <li>• Ping Watchdog</li> </ul>
System Tools	<ul style="list-style-type: none"> <li>• Operating Log (Info, Warnings, Errors, Critical)</li> <li>• Run-time Log (Info, Warnings, Errors, Critical)</li> <li>• Filter, Select, Display, export Logs</li> </ul>
Debugging Software	<ul style="list-style-type: none"> <li>• DM tools for troubleshooting</li> </ul>
Other Applications	<ul style="list-style-type: none"> <li>• WiFi-Dog Solution</li> <li>• SMS Sent / Receive</li> <li>• Calendar</li> </ul>



	<ul style="list-style-type: none"> <li>Events (IP Address Block, Reboot, WiFi, LTE)</li> <li>WPS Soft Button</li> <li>SSID Bind APN</li> </ul>
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## Wi-Fi SPECIFICATIONS

Standards Supported	<ul style="list-style-type: none"> <li>802.11b/g/n compatible Wi-Fi</li> <li>802.11e QoS Enhancement (WMM)</li> <li>802.11i (WPA, WPA2) No Authentication, shared key, and pairwise key authentication services</li> </ul>
Channel Bandwidth	20MHz, 40MHz, 80MHz
Frequency 2.4GHz	2.412 (Channel 1) ~ 2.472 (Channel 13)
Frequency 5GHz	5.18 (Channel 36) ~ 5.32 (Channel 64)
TXRX	2T2R
MIMO	2x2 MIMO
Maximum Data Rate	<ul style="list-style-type: none"> <li>802.11b: 11Mbps</li> <li>802.11g: 54Mbps</li> <li>802.11n: 300Mbps</li> <li>802.11ac: 866Mbps</li> </ul>
Modulation	<ul style="list-style-type: none"> <li>DSSS with DBPSK and DQPSK, CCK</li> <li>OFDM with BPSK, QPSK, 16QAM, and 64QAM</li> </ul>
Convolutional Coding Rate:	1/2, 2/3, 3/4, and 5/6
Receive Sensitivity	<ul style="list-style-type: none"> <li>-51dBm @ 135Mbps, typical for 802.11ac</li> <li>-64dBm @ 65Mbps, typical for 802.11n</li> <li>-65dBm @ 54Mbps, typical for 802.11g</li> <li>-76dBm @ 11Mbps, typical for 802.11b</li> </ul>
Maximum Output Power	<ul style="list-style-type: none"> <li>2.4GHz / 20dBm for OFDM &amp; 18dBm for CCK modulation</li> <li>5GHz / 23dBm</li> </ul>
Fast Receiver	Automatic Gain Control (AGC)
Antenna Type	Build-in separate antenna, 2.4GHz, 5GHz
Antenna Gain	2.4GHz / 3dBi 5GHz / 5dBi

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C to 55°C
Storage Temperature	-40°C to 70°C
Operating Humidity	5% to 95%
Ingress Protection Rating	IP65

## PACKAGE DELIVER

	Assembled Product
	Ethernet Cable, Cat5e
	12V/2A AC/DC Adaptor
	Quick Installer Guide

## CONTACT INFORMATION

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