

# Specification

## GPON Wi-Fi Gigabit Router

## Smart TV BOX



**Model: BTQ43i**  
**FIBER TORNADO 2**



Maintenance – Free Connections



## Introduction

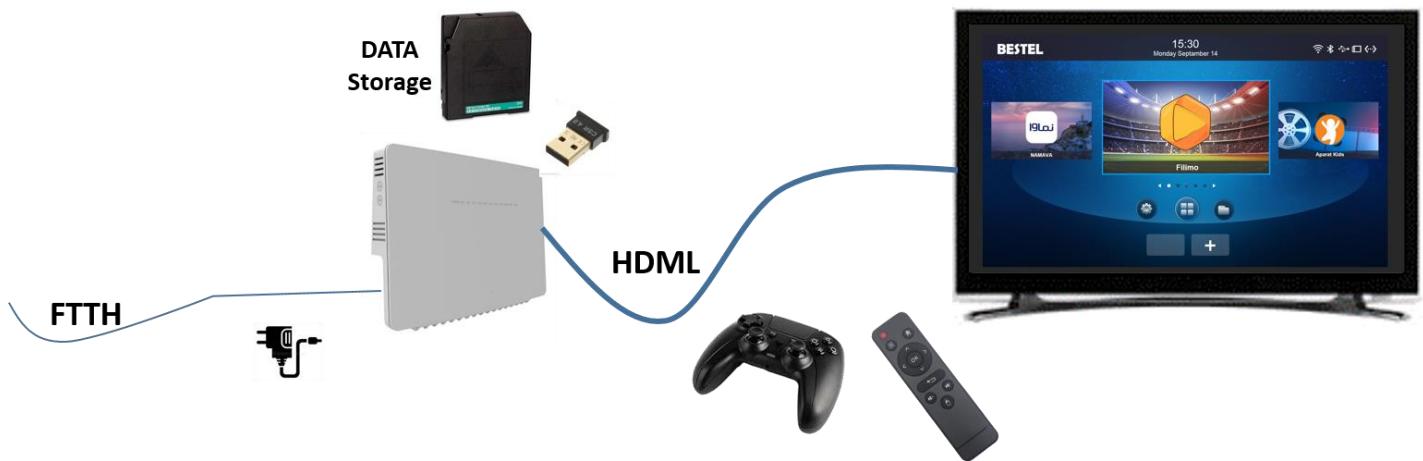
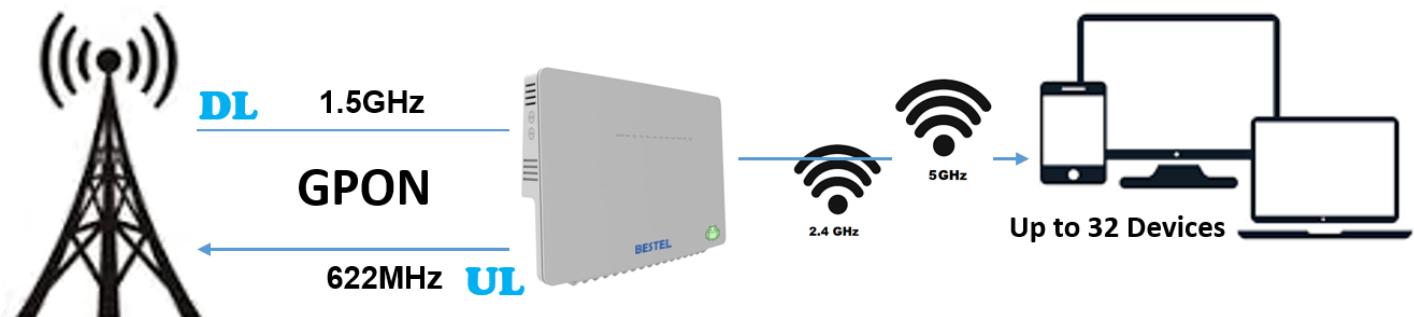
BTQ43i is for broadband access market based on the introduction of EPON & GPON technology passive optical network terminal products. It's with EPON/GPON OLT are used together to provide a complete broadband access solution.

This model can integrate wireless function with meeting 802.11 n/b/g/ac technical standards, It has built-in high gain directional antenna, the wireless transmission rate up to 866Mbps. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.

BTQ43i is highly advanced GPON 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.

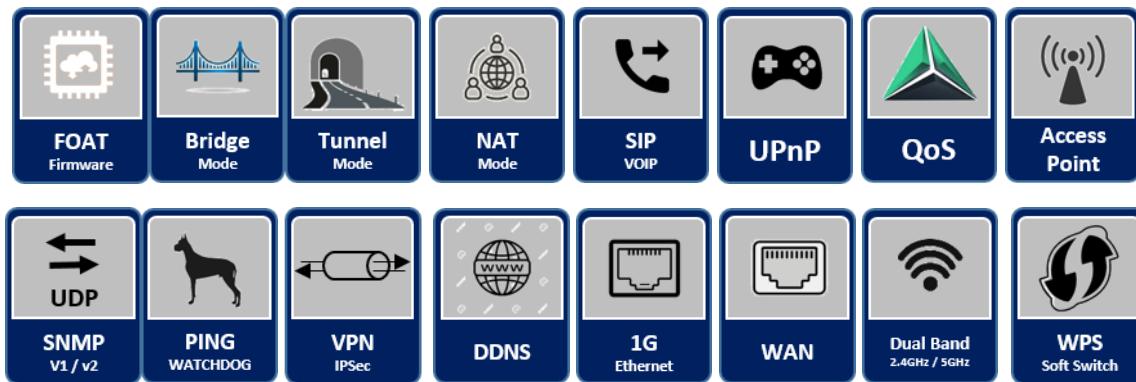
In this product, we provide Gigabit networking and dual bands Wi-Fi AP functionalities, it enables wide service coverage and provides high data throughput and networking features to customers who needs easy broadband access, hot-spot Wi-Fi connectivity.

The device also have Smart TV Box, VoIP and USB interface support.



## Technical Features

- Support Dual Band Wi-Fi (2.4GHz / 5GHz) Concurrent
- Support Dual Stack IPv4 / IPv6
- Support 3 LAN ports, 1GE
- Support 1 WAN port
- Support Small Network Management Protocol (SNMP)
- Support CWMP TR069 and Certification (Primary and Secondary)
- Support Server Network Time protocol (SNTP).
- Support two login access, root for administrator and admin for clients
- Support DDNS or DNS Agency
- Support WPS Soft Button
- Support Routing (NAT, Tunnel, and Bridge Mode)
- Support VPN (L2TP, GRE, PPTP)
- Support IPSec VPN



## GPON SPECIFICATIONS

Standard	FSAN G.984.2, Class B+
Authentication	Consistent with the SN or password
Downstream	2.488Gbps
Upstream	1.244Gbps
Receiver Sensitivity	-28dBm
Transmit Optical Power	0.5~5dBm
Saturation Optical Power	-8dBm
Wavelength Transmitter	1310nm
Wavelength Receiver	1490nm

## EPON SPECIFICATIONS

Standard	1000BASE-PX20+ Symmetric CTC2.1, CTC3.0
Authentication	Consistent with the MAC or LOID
Downstream	1.25Gbps
Upstream	1.25Gbps
Receiver Sensitivity	-27dBm
Transmit Optical Power	0~4dBm
Saturation Optical Power	-3dBm
Wavelength Transmitter	1310nm
Wavelength Receiver	1490nm

## ONT SPECIFICATIONS

GPON Standard	ITU-T G.984.X
Dimensions (LxWxH)	265mm x 16mm x 32mm
Weight	TDB
Wi-Fi Dual Band	2.4GHz (802.11 b/g/n and MIX) 5GHz (802.11 ac)
Wi-Fi Antenna	2 Separate PCB Built-in high gain, 2.4GHz, 5GHz
LED Indicators	WPS,WLAN,LAN4,LAN3,LAN2,LAN1,USB,TEL,LOS,PON,ONT,OTT
UNI	1POT + 3GE + 2.4G/5G Wi-Fi + 3USB + 1HDMI + 1AV OUT + 1IR Receiver
Restore Button	Press for 10 Sec. to factory restore settings
ONT Power Switch	ON/OFF Button
OTT Power Switch	ON/OFF Button
Power Supply	Input: Universal range 100V to 240V AC, Output DC 12V/3A
Static power consumption	3W
Maximum power consumption	10W
Installation mode	DESKTOP, WALL MOUNT

## PORT SPECIFICATIONS

Fiber Port	SC/PC single-mode fiber
	Flexible mapping between GEM Port and TCONT
	Bi-directional FEC
	SR-DBA and NSR-DBA
	Type B (Single-homing & Dual-homing)
Ethernet Port	Ethernet port-based VLAN tags and tag removal

	1:1 VLAN, N:1 VLAN or VLAN transparent transmission
	QinQ VLAN
	Limit on the number of learned MAC addresses
	Auto-adaptive 10 Mbit/s, 100 Mbit/s or 1000 Mbit/s
	Full/half duplex mode, auto MDI/MDI-X
POTS Port (Optional)	Maximum REN:4
	G.711A/μ, G.729a/b & G.722 encoding/decoding
	T.30/T.38/G.711 Fax mode
	DTMF, Emergency calls (with the SIP protocol)
USB Port	USB 2.0 interface
	Transmission Rate 480Mbps
	FTP-based network storage
	File/Print sharing based on SAMRA
	DLNA function
WLAN	Comply with IEEE 802.11a/b/g/n/ac protocol standard
	5dBi antenna gain
	Maximum ideal rate up to 1.2Gbps
	2.4GHz supports 2*2 MIMO technology
	5GHz supports 2*2 MIMO technology
	WMM/Multiple SSIDs/WPS
HDMI Port	4K*2K UHD Output, HDMI 2.0A
AV Port	480i/576i standard definition output
	Remote Receiver Connection

## SOFTWARE SPECIFICATIONS

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>
Wi-Fi (2.4GHz)	<ul style="list-style-type: none"><li>• Wi-Fi (Enable / Disable)</li><li>• Frequency Range: 2.412GHz ~ 2.462GHz</li><li>• Bandwidth: 20MHz / 40MHz</li><li>• Access Point Isolate</li><li>• Channel Mode: Manual, Auto</li><li>• Channel Range 1 ~ 13 (Europe)</li><li>• SSID: Hidden / Disable / Edit, Support four SSID</li><li>• Security type: No Authentication, WPA-PSK, WPA2-PSK, WPA/WPA2-PSK, WPA3-PSK</li><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>• Frequency Range: 5.18GHz ~ 5.7GHz</li><li>• Bandwidth: 20MHz / 40MHz / 80MHz (Auto)</li><li>• Access Point Isolate</li><li>• Channel Mode: Manual, Auto</li><li>• Channel Range 36 ~ 64 (Europe)</li><li>• SSID: Hidden / Disable / Edit,</li><li>• Security type: No Authentication, WPA-PSK, WPA2-PSK, WPA/WPA2-PSK, 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 (Input Access)</li></ul>
VPN Server	<ul style="list-style-type: none"><li>• IPsec</li><li>• L2TPv2 &amp; v3</li><li>• PPTP</li></ul>
Data Services	<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 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 (Enable / Disable)</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>• 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>• SAMBA Service</li></ul>
CWMP	<ul style="list-style-type: none"><li>• Primary TR069</li></ul>
Network Diagnostics	<ul style="list-style-type: none"><li>• Ping</li><li>• Traceroute</li></ul>
Administration	<ul style="list-style-type: none"><li>• Web Protocols (https 443 and http 80)</li><li>• NTP Setting</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></ul>

## 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 ODFM &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

## OTT SPECIFICATIONS

Video	All winner Video Engine (AVE) with dedicated hardware decoders and encoders
	Support multi-video decoder up to 4K@60fps
	Supports multiple "secured" video decoding sessions and simultaneous decoding and encoding
	Video/Picture Decoding
Video/Picture Decoding	VP9 Profile-2 up to 4K@30fps
	H.265 Mam10@1.5.1 up to 4K@60fps
	AVS2 JiZhum 10bit Profile up to 4K@60fps
	H.264 BP/MP/HP@L4.2 up to 4K@30fps
	H.263 BP up to 1080P@60fps
	MPEG-4 SP/ASP@L5 up to 1080P@60fps
	MPEG-2 MP/HI up to 1080P@60fps
	MPEG-1 MP/HI up to 1080P@60fps
	Xvid ap to 1080P@60fps
	Sorenson Spark up to 1080P@60fps
	VP8 up to 1080P@60fps
	AVS/AVS+ JiZhun Profile up to 1080P@60fps
	WMV9,VCI SP/MP/AP up to 1080P@60fps
	JPEG IFIF file format up to 45M PPS
	Multiple language and multiple format sub-title video support
	MJPEG and JPEG unlimited pixel resolution decoding (ISO/IEC-10918)
	Supports JPEG thumbnail, scaling, rotation and transition effects
	Supports *.mkv, *.wmv, *.mpg, *.mpeg, *.dat, *.avi, *.mov, *.iso, *.mp4, *.rm and *.jpg file formats.

Image	HD JPEG, BMP, GIF, PNG, TIF	
language	English French German Spanish Italian etc. multilateral languages	
OS	Android 10.0	
Audio	Supports MP3, AAC, WMA, RM, FLAC, Ogg and programmable with 7.1/5.1 down-mixing	
	Built-in serial digital audio SPDIF/IEC958 input/output and PCM input/output	
	Two DAC channels	
	Supports 1 audio output interface (differential LINEOUTP/N or single-end LINEOUTL/LINOUTR)	
	One Audio HUB, supporting internal mixing function	
	Embedded 3 I2S/PCM (12S0 for extended audio codec. 12S2 for BT, 12S3 for digital power amplifier)	
	Supports Left-justified, Right-justified, Standard 12S mode. PCM mode, and TDM mode	
	125 mode supports 8 channels, and 32-bit/192kbit sample rate	
	125 and TDM modes support maximum 16 channels, and 32-bit/96kbit sample rate	
	One OWA OUT interface, supporting 16-/20-/24-bit inputs and outputs	
Applications	Integrated digital microphone (DMIC), supporting maximum 8 digital PDM microphones	
	Online	Browse all video websites, support Netflix, Hulu, Flixster, Youtube, etc.
	Apps	Apps download freely from android market amazon app store etc.
	Talk online	Support SKYPE video call MSN, facebook, Twitter, QQ etc.
	Medium	Local Media playback. Support HDD, U Disk, TF Card.
	Others	Support Email, office suit etc. Support DLNA function Support 2.4G wireless mouse/keyboard

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0°C~45°C
Standby Temperature	-40°C~70°C
Operating Humidity	10% - 90%
Standby Humidity	5% - 90% RH

## PACKAGE DELIVER

Assembled Product
Quick Installer Guide
Remote Controller
Ethernet Cable, Cat5
HDMI Cable
12V-3A AC / DC Adaptor
2 x AAA 1.5v Battery

## CONTACT INFORMATION



### BONYAN ERTEBAT SAHAND FARHIKHTEGAN KISH COMPANY

R&D Director: Dr. Morawej  
Contact No.: +98 912 649 3138  
E-mail: ali.morawej@bestel.ir

Postal Code: 3187411039, 45  
Registration Number 13673

Address: Payam Airport Economic Zone,  
Phase 3, Madiran Boulevard, First Alley,  
No. 9, Karaj, IRAN