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## F8X36 Series Router Technical Specification

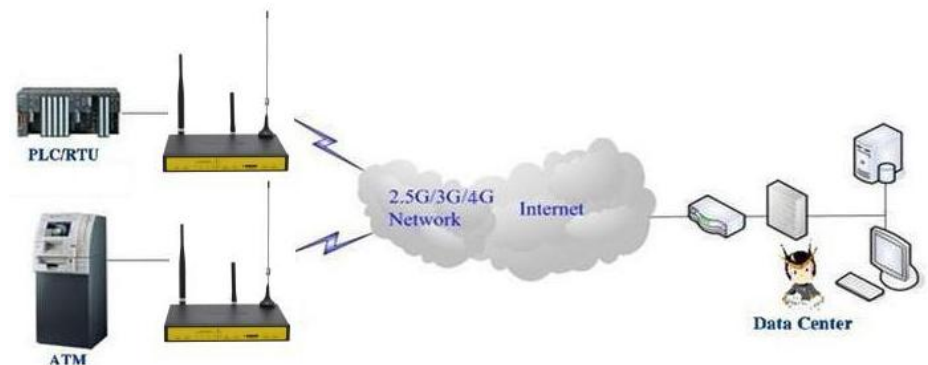


### General

F8X36 Series Router is a kind of cellular terminal device that provides large data transfer function by public GPRS/CDMA/WCDMA/EVDO/LTE network. Also, it supports ZigBee function.

It adopts high-powered industrial 32-bits CPU and embedded real time operating system. It supports RS232 (or RS485/RS422), Ethernet and WIFI port that can conveniently and transparently connect one device to a cellular network, allowing you to connect to your existing serial, Ethernet and WIFI devices with only basic configuration. Also, it supports ZigBee function.

It has been widely used on M2M fields, such as self-service terminal industry, intelligent transportation, smart grid, industrial automation, telemetry, finance, POS, water supply, environment protection, post, weather, and so on.



### Product Feature

#### Design for Industrial Application

- ◆ High-powered industrial cellular module
- ◆ High-powered industrial 32bits CPU
- ◆ High-powered industrial ZigBee module
- ◆ Support low-consumption mode, including sleep mode, scheduled online/offline mode, scheduled power-on/power-off mode(optional)
- ◆ Housing: iron, providing IP30 protection
- ◆ Power range: DC 5~36V

#### Stability and Reliability

- ◆ Support hardware and software WDT
- ◆ Support auto recovery mechanism, including online detect, auto redial when offline to make router always online
- ◆ Ethernet port: 1.5KV magnetic isolation protection

- ◆ RS232/RS485/RS422 port: 15KV ESD protection
- ◆ SIM/UIM port: 15KV ESD protection
- ◆ Power port: reverse-voltage and over-voltage protection
- ◆ Antenna port: lightning protection(optional)

#### Standard and Convenience

- ◆ Support standard RS232(or RS485/RS422), Ethernet and WIFI port that can connect to serial, Ethernet and WIFI devices directly
- ◆ Support standard WAN port and PPPOE protocol that can connect to ADSL directly
- ◆ Support intellectual mode, enter into communication state automatically when powered

- ◆ Provide management software for remote management
- ◆ Support several work modes
- ◆ Convenient configuration and maintenance interface(WEB or CLI)

**High-performance**

- ◆ Support multiple WAN access methods, including static IP, DHCP, L2TP, PPTP,PPPOE,2.5G/3G/4G
- ◆ Support ZigBee function
- ◆ Support double link backup between LTE and WAN(PPPOE, ADSL)(optional)
- ◆ Support VPN client(PPTP, L2TP, IPSEC)(only for VPN version)
- ◆ Support VPN server(PPTP, L2TP, IPSEC)(only for VPN version)
- ◆ Support local and remote firmware upgrade,import and export configure file
- ◆ Support NTP, RTC embedded
- ◆ Support multiple DDNS provider service

- ◆ Support VLANs, MAC Address clone, PPPoE Server
- ◆ WIFI support 802.11b/g/n. support AP, client, Adhoc, Repeater, Repeater Bridge mode
- ◆ WIFI support WEP,WPA,WPA2 encryption,Support MAC address filter
- ◆ Support multiple online trigger ways, including SMS, ring and data. Support link disconnection when timeout
- ◆ Support APN/VPDN
- ◆ Support DHCP server and client, firewall, NAT, DMZ host , URL block, QoS, traffic statistics, real time link speed statistics etc
- ◆ Full protocol support , such as TCP/IP, UDP, ICMP, SMTP(optional), HTTP, POP3(optional), OICQ(optional), TELNET, FTP(optional), SNMP, SSHD, etc
- ◆ Schedule Reboot, Schedule Online and Offline,etc

**Product Specification** -----

**Cellular Specification**

Item	Content
<b>F8136 ZigBee+GPRS WIFI ROUTER</b>	
Standard and Band	EGSM 900/GSM 1800MHz, GSM 850/900/1800/1900MHz(optional) Compliant to GSM phase 2/2+ GPRS class 10, class 12(optional)
Bandwidth	85.6Kbps
TX power	GSM850/900:<33dBm GSM1800/1900:<30dBm
RX sensitivity	<-107dBm
<b>F8236 ZigBee+CDMA WIFI ROUTER</b>	
Standard and Band	CDMA2000 1xRTT 800MHz, 450MHz(optional)
Bandwidth	153.6Kbps
TX power	<30dBm
RX sensitivity	<-104dBm
<b>F8436 ZigBee+WCDMA WIFI ROUTER</b>	
Standard and Band	UMTS/WCDMA/HSDPA/HSUPA/HSPA+ 850/1900/2100MHz, 850/900/1900/2100MHz(optional) GSM 850/900/1800/1900MHz GPRS/EDGE CLASS 12
Bandwidth	DC-HSPA+: Download speed 42Mbps, Upload speed 5.76Mbps



	HSPA+: Download speed 21Mbps, Upload speed 5.76Mbps HSDPA: Download speed 7.2Mbps, HSUPA: Upload speed 5.76Mbps UMTS: 384Kbps
TX power	<24dBm
RX sensitivity	<-109dBm
<b>F8636 ZigBee+EVDO WIFI ROUTER</b>	
Standard and Band	CDMA2000 1X EVDO Rev A 800MHz, 800/1900MHz(optional), 450MHz(optional) CDMA2000 1X EVDO Rev B 800/1900MHz(optional) CDMA2000 1X RTT, IS-95 A/B
Bandwidth	EVDO Rev. A: Download speed 3.1Mbps, Upload speed 1.8Mbps EVDO Rev. B: Download speed 14.7Mbps, Upload speed 5.4Mbps (optional)
TX power	<23dBm
RX sensitivity	<-104dBm
<b>F8736 ZigBee+TDD LTE WIFI ROUTER</b>	
Standard and Band	LTE TDD 2600/1900/2300MHz(Band 38/39/40), 800/1400/1800MHz(Band 27/61/62)(optional) TD-SCDMA 2010/1900MHz(A/F frequency band, Band 34/39) GSM /GPRS/EDGE 900/1800/1900MHz
Bandwidth	LTE TDD: Download speed 61Mbps, Upload speed 18Mbps TD-HSPA+: Download speed 4.2Mbps, Upload speed 2.2Mbps TD-HSPA: Download speed 2.2Mbps, Upload speed 2.2Mbps
TX power	<23dBm
RX sensitivity	<-97dBm
<b>F8836 ZigBee+FDD LTE WIFI ROUTER</b>	
Standard and Band	LTE FDD 2600/2100/1800/900/800MHz, 700/1700/2100MHz(optional) DC-HSPA+/HSPA+/HSDPA/HSUPA/UMTS 850/900/2100MHz, 800/850/1900/2100MHz(optional) EDGE/GPRS/GSM 850/900/1800/1900MHz GPRS CLASS 10 GPRS CLASS 12
Bandwidth	LTE FDD: Download speed 100Mbps, Upload speed 50Mbps DC-HSPA+: Download speed 42Mbps, Upload speed 5.76Mbps HSPA+: Download speed 21Mbps, Upload speed 5.76Mbps HSDPA: Download speed 7.2Mbps, HSUPA: Upload speed 5.76Mbps UMTS: 384Kbps
TX power	<23dBm
RX sensitivity	<-97dBm
<b>F8A36 ZigBee+LTE WIFI ROUTER</b>	
Standard and Band	LTE FDD,LTE TDD,EVDO,WCDMA,TD-SCDMA,CDMA1X,GPRS/EDGE
Bandwidth	LTE FDD: Download speed 100Mbps, Upload speed 50Mbps LTE TDD: Download speed 61Mbps, Upload speed 18Mbps DC-HSPA+: Download speed 42Mbps, Upload speed 5.76Mbps TD-HSPA+: Download speed 4.2Mbps, Upload speed 2.2Mbps EVDO Rev. A: Download speed 3.1Mbps, Upload speed 1.8Mbps

TX power	<23dBm
RX sensitivity	<-97dBm

### ZigBee Specification

Item	Content
ZigBee Module	Industrial ZigBee Platform
Standard and Band	IEEE 802.15.4 ISM 2.4 ~2.5GHz
Indoor/Urban Range	30m 90m(With PA)
Outdoor/RF Line-of-Sight Range	500m 2000m(With PA)
Transmit Power	2.82 mw (+4.5dBm) 100 mw (+20dBm) (With PA)
Bandwidth	250Kbps
Receiver Sensitivity	-97dBm -103dBm(With PA)
Network Topologies	Point-to-Point, Point-to-Multipoint, Peer-to-Peer and Mesh
Number of channels	16 Direct Sequence Channels
Channel	11 to 26
Max packge size	300Bytes

### WIFI Specification

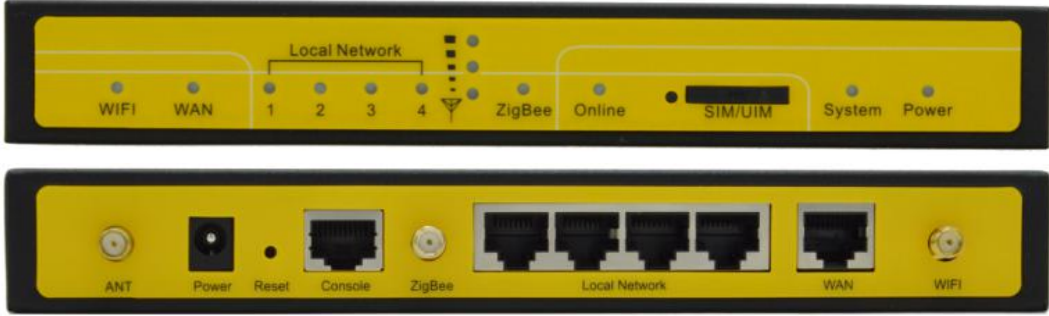
Item	Content
Standard	IEEE802.11b/g/n
Bandwidth	IEEE802.11b/g: 54Mbps (max) IEEE802.11n: 150Mbps (max)
Security	WEP, WPA, WPA2, etc WPS (optional)
TX power	20dBm(11n),24dBm(11g),26dBm(11b)
RX sensitivity	<-72dBm@54Mbps

### Hardware System

Item	Content
CPU	Industrial 32bits CPU
FLASH	16MB(Extendable to 64MB)
DDR2	128MB

**Interface type**

Item	Content
WAN	1 10/100 Mbps WAN port(RJ45), auto MDI/MDIX, 1.5KV magnetic isolation protection
LAN	4 10/100 Mbps Ethernet ports(RJ45), auto MDI/MDIX, 1.5KV magnetic isolation protection
Serial	1 RS232(or RS485/RS422) port, 15KV ESD protection Data bits: 5, 6, 7, 8 Stop bits: 1, 1.5(optional), 2 Parity: none, even, odd, space(optional), mark(optional) Baud rate: 2400~115200 bps
Indicator	"Power", "System", "Online", "ZigBee", "Local Network", "WAN", "WIFI", "Signal Strength"
Antenna	Cellular: Standard SMA female interface, 50 ohm, lightning protection(optional) ZigBee: Standard SMA female interface, 50 ohm, lightning protection(optional) WIFI: Standard SMA male interface, 50 ohm, lightning protection(optional)
SIM/UIM	Standard 3V/1.8V user card interface, 15KV ESD protection
Power	Standard 3-PIN power jack, reverse-voltage and over-voltage protection
Reset	Restore the router to its original factory default settings



**Note: There may be different components and interfaces in different model, please in kind prevail.**

**Power supply**

Item	Content
Standard Power	DC 12V/1.5A
Power range	DC 5~36V

**Consumption**

Working condition	Consumption
Standby	4G:305~345mA@12VDC 3G:285~310mA@12VDC 2G:244~303mA@12VDC
Communication	4G:355~595mA@12VDC 3G:315~390mA@12VDC 2G:284~311mA@12VDC

**Physical Characteristics**

Item	Content
Housing	Iron, providing IP30 protection
Dimensions	207x135x28 mm
Weight	790g

**Environmental Limits**

Item	Content
Operating Temperature	-35~+75°C(-31~+167°F)
Storage Temperature	-40~+85°C (-40~+185°F)
Operating Humidity	95% (unfreezing)

**Ordering Information**

Model No.	Description	WAN	LAN	Cellular	WIFI	SIM/UIM
F8136	ZigBee+GPRS WIFI ROUTER	1	4	1	1	1
F8236	ZigBee+CDMA WIFI ROUTER	1	4	1	1	1
F8436	ZigBee+WCDMA WIFI ROUTER	1	4	1	1	1
F8636	ZigBee+EVDO WIFI ROUTER	1	4	1	1	1
F8736	ZigBee+TDD LTE WIFI ROUTER	1	4	1	1	1
F8836	ZigBee+FDD LTE WIFI ROUTER	1	4	1	1	1
F8A36	ZigBee+LTE WIFI ROUTER	1	4	1	1	1