

IntegraBus
ATW975 / ATW976
Wifi Local2 / Wifi Comfort2



Datasheet
Rev. 01

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1. Product Overview

IntegraBus Wifi devices provide high quality Internet access (WLAN) in public transport vehicles. The devices are specially designed for use in public transport.

- Industrial electronic and mechanical components
- 4G (LTE) Network
- Provide access for up to 50 users.
- The unique, Fair Bandwidth technology, helps to avoid downloading bigger amount on data from the same address (i.e. streaming music or movie), but supports preferring the normal browsing (looking websites, mailing functions).
- Multi SIM support and automatic APN identification
- etc.

2. Electrical Specification

		Min.	Norm.	Max	
1.	Supply Voltage	10	24	48	V
2.	Operating Temperature	-20		+85	°C
3.	Operating Supply Current @24V		0.5	2	A
4.	Auxiliary 12V Power Output Voltage	11.5	12.0	12.5	V
5.	Auxiliary 12V Power Output Current			1	A
6.	Auxiliary 5V Power Output Voltage	4.7	5	5.3	V
7.	Auxiliary 5V Power Output Current			1	A
8.	Wifi Output Power			1000	mW

3. Wireless Specification

ATW975 – Wifi Local2

- 1 x 2.4 GHz 802.11 b/g/n MiMo wireless interface
- 1 x 5 GHz 802.11 a/n or ac MiMo wireless interface

ATW976 – Wifi Comfort2

- 2 x 2.4 GHz 802.11 b/g/n MiMo wireless interface
- 1 x 5 GHz 802.11 a/n or ac MiMo wireless interface

The modular structure supports the usage the latest generation of the Wifi radio standards.

All the interfaces use Qualcomm/Atheros SoC based system.

Reference output power and receiver sensitivity

Mode	2.4 GHz Transmit/Receive	5 GHz Transmit/Receive	5 GHz ac version Transmit/Receive
TX/RX at MCS0	30dBm/-96dBm	30dBm/-96dBm	26dBm/ -96dBm
TX/RX at MCS7	24dBm/-78dBm	24dBm/-78dBm	23dBm/ -77dBm
TX/RX at 6Mbit	30dBm/-96dBm	30dBm/-96dBm	27 dBm/ -96dBm
TX/RX at 54Mbit	27dBm/-80dBm	27dBm/-80dBm	23 dBm/ -81dBm
TX/RX at MCS9			19 dBm/ -72 dBm
Used Frequencies	2400MHz-2500MHz	4900-5920MHz	4900-5920MHz

The system shares the WiFi clients equally between the interfaces, and this provide a good balanced usage the available frequency range as well.

The system is designed to support areas with a high client density, i.e. public transport, on this reason it uses 2 different wireless channels simultaneously for 40 users, but as an option it can be extended to 4 channels, to serve 80 plus clients. In basic configured devices the number is used channels can be reduced to 2 or 1, if the number of users does not exceed 20.

The device supports 10 virtual SSIDs, and all of them are separated from each other at ISO-OSI Layer 2 level. Every SSID can have its own authentication method, IP range, routing rules, and QoS settings.

4. Wireless security

The unit supports the following security and authentication protocols:

WEP/WPA/WPA2 – AES-CCM/TKIP
 MAC authentication, Radius, EAP-TLS, EAP-TTLS-MSCHAP2, PEAP
 ACL list, MESH capability, HWMP+

5. Network capabilities

VLAN 802.1q, IPv4, IPv6 support, DHCP server and client functions, internal DNS server, RIPv1/v2 OSPFv2, BGPv4 routing protocols.

The Qualcomm SoC running at 600MHz can provide a speed of 689Mbps down/244Mbps upload bandwidth and routing capacity even when 25 different firewall rules are in use at the same time.

The device can provide many VPN tunnel at the same time of the following standards, IPSec, IKEv2, OpenVPN, PPTP, L2TP, SSTP

Stateful firewall, Layer 7 package inspection, time triggered rules are available, with dynamic address list handling inside firewall. By using our own DNS server, we can provide an effective content filtering solution.

The device provides a native HOTSPOT service handled on board, with a variable landing welcome page, remote or local authentication. The provided bandwidth and data consumption limits can be set up individually for each user.

Independent QoS rules can be defined by IP or protocols matching. The factory setup is limited to 1Mbits down and 0,5Mbits up speed with a 4 Mbits burst for the first 50 sec. This rule provides the comfort of speed for the clients but ensure each of them a fair an equally distributed access to the Internet.

By using the Transparent WEB-Proxy functionality the data consumption can be significantly reduced.

6. LTE capability

Cat4 modem (B1,B2,B3,B4,B5,B7,B8,B20 LTE bands) is installed by 150/50mbits theoretical bandwidth capacity.

The LTE modem is a modular part as well, and IntegraBus can provide always the state-of-the art solution for customers need, so 5G modems will be supported later on as well.

7. Special Features

- Manual setup for the most important parameters:
 - SSID, Password, APN,
 - Bandwidth and cumulated data by client,
 - Roaming, PIN
- Automatic APN identification and setup
- Dual SIM support, selection can be manual or automatic

The devices are using a cloud based management solution, this allows the support staff to log and update the devices remotely. Our company can build predefined packages that will be automatically downloaded through a VPN tunnel.

Special commands can be executed by an event or schedule, this will work even if the units are offline.

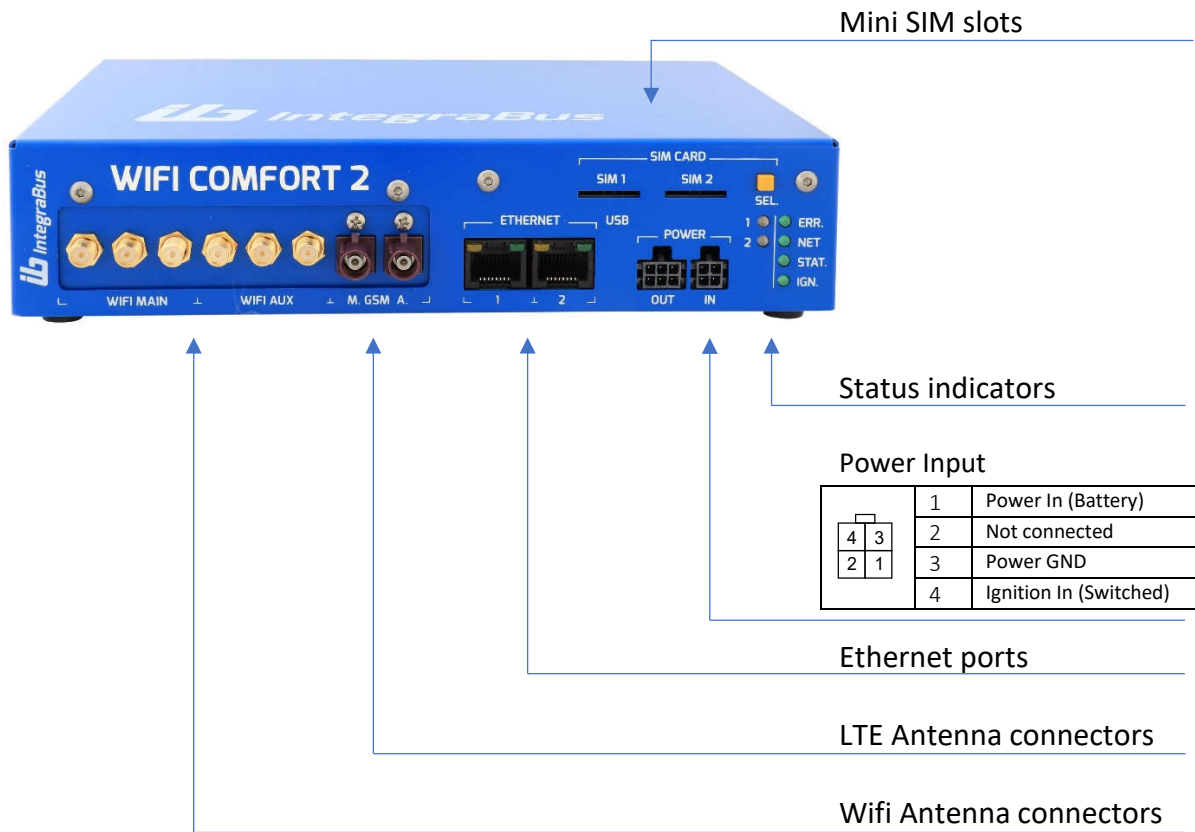
8. Certifications

ECE R118 certification
ECE R10 and 2014/53/EU (RED)

9. Mechanical Specification

- Metal housing dimensions: 210mm x 50mm x 170mm

10.Connectors and Pinouts



Connector types

Wifi antenna:	SMA male
LTE antenna:	Fakra code D male
DC in:	4 pol Micro-Fit3(TM)
DC out (5 and 12 Volt, 1 A):	6 pol. Micro-Fit3(TM)
SIM:	mini SIM socket
Ethernet:	RJ45 socket

11. Document History

rev	History	Date	Author
R01	First release	2023.10.03.	epapp