

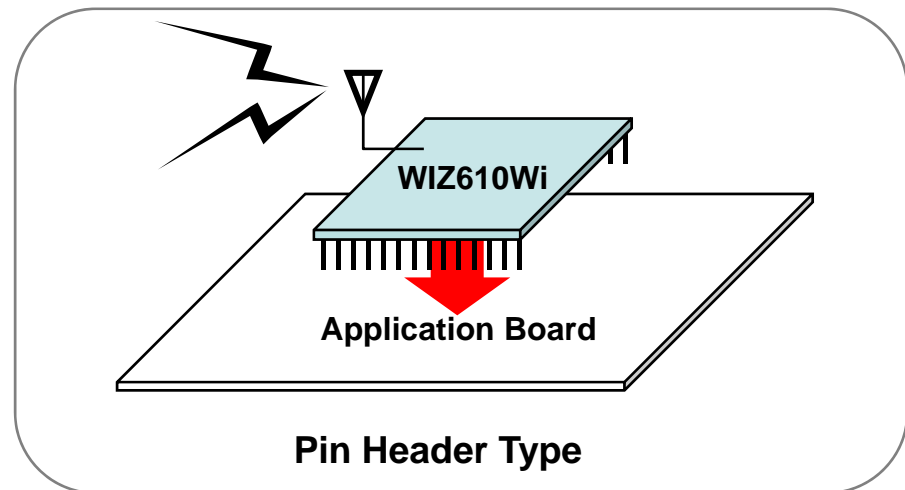
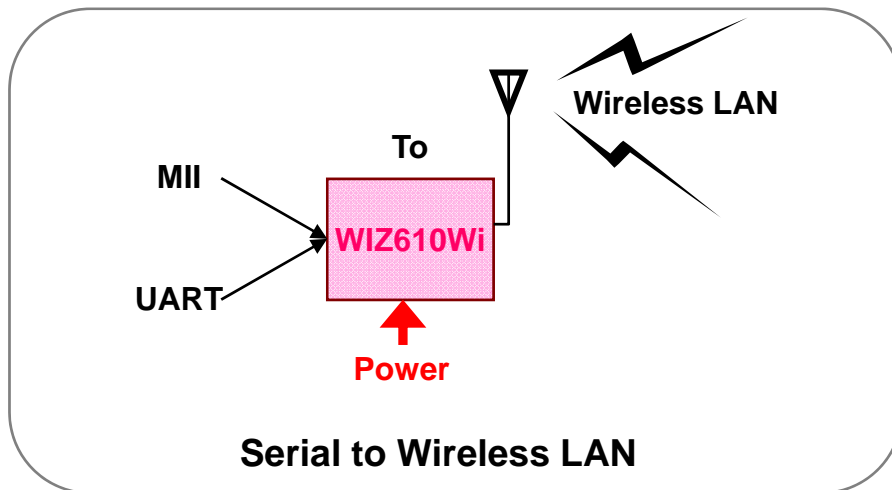
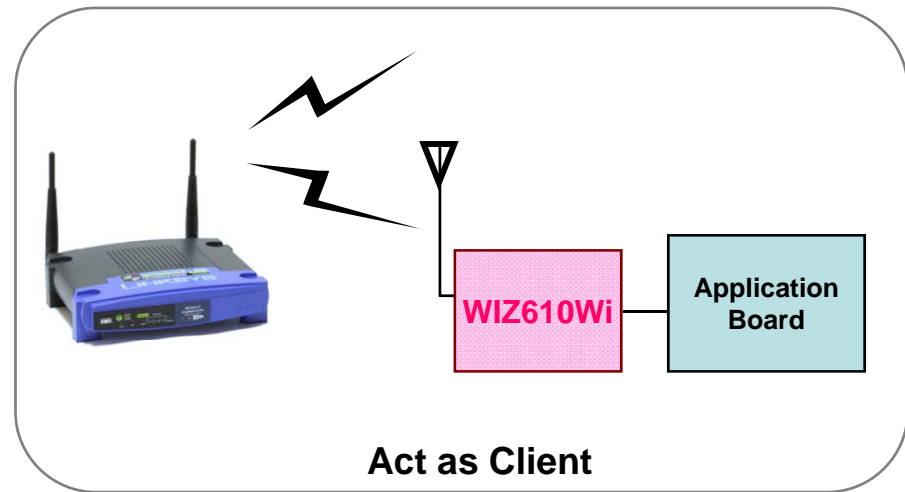
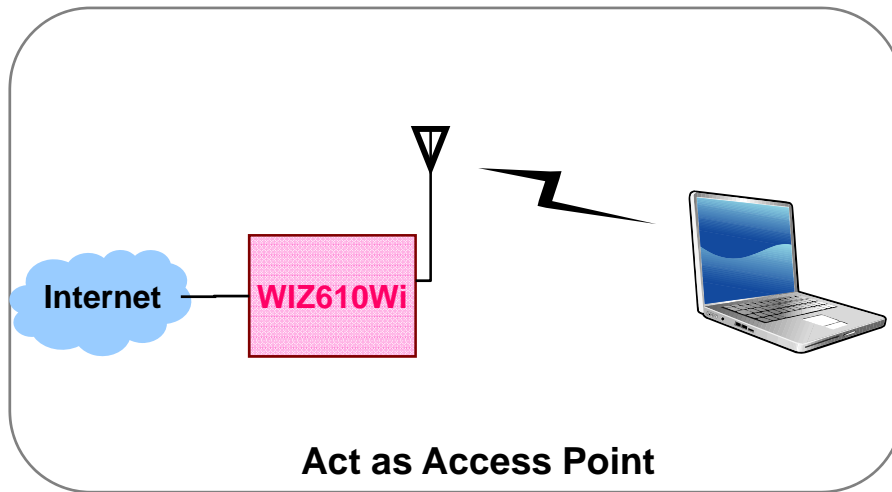
Embedded Wireless LAN Module

WIZ610Wi

WIZnet

◆ WIZ610Wi is..

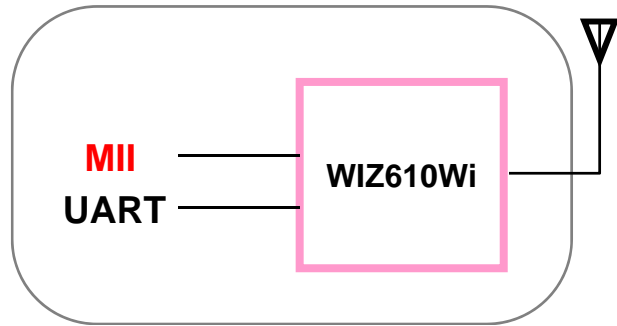
- 802.11b/g WLAN AP Module
- Client-Bridge Module
- Serial to WLAN Module
- Pin Header Type



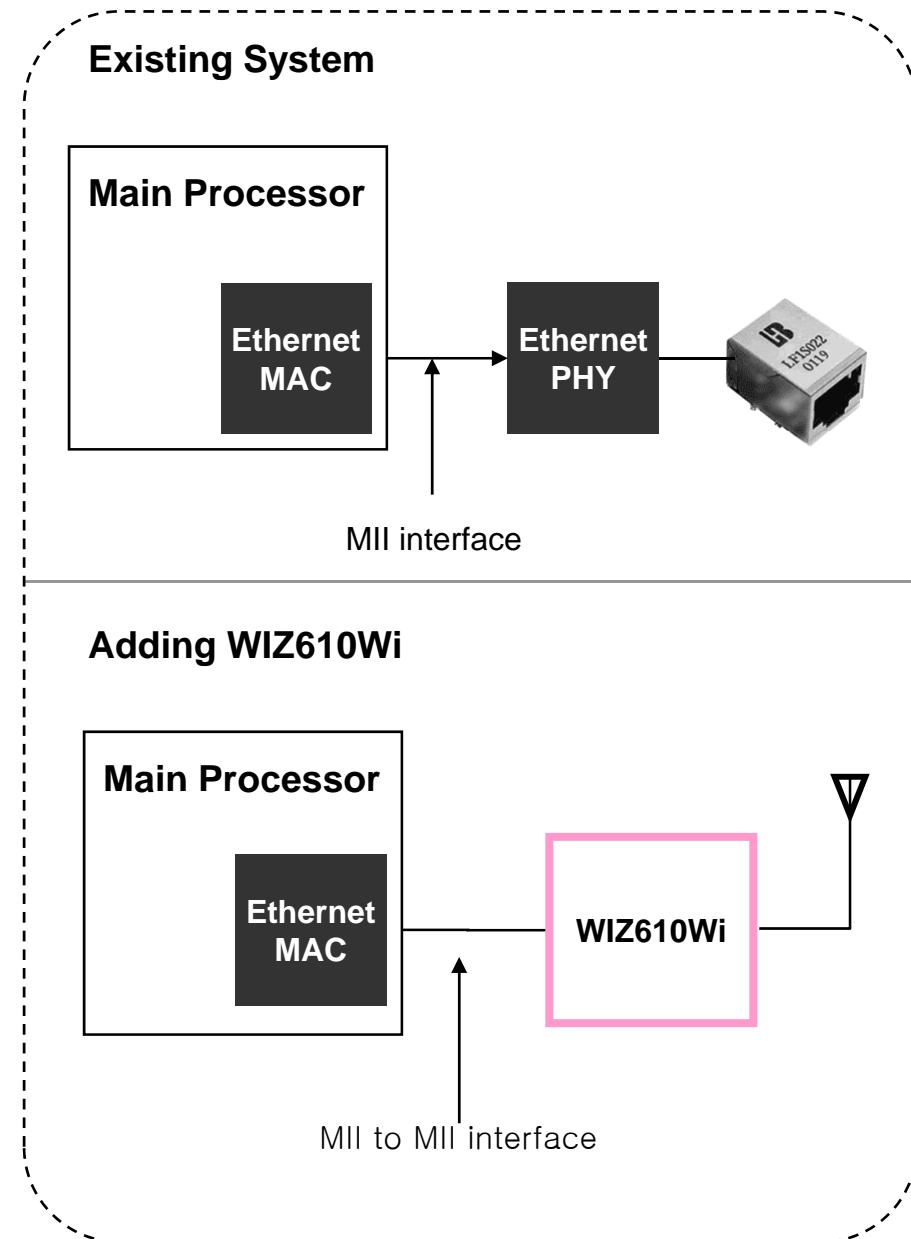
◆ Comparison to WLAN Adapter Card

	Single Chip Solution WIZ610Wi	WLAN Adapter Card
Interface	If system has serial Interface (UART), simply add WLAN interface.	To connect WLAN adapter card, mini PCI, USB or SDIO interface is required. If system doesn't have these interface, have to change MCU and whole system.
	If application has Ethernet Interface, simply add WLAN interface by connecting MII to MII	
Development	WLAN driver porting is not required.	WLAN driver porting required.
	OS independent	TCP/IP S/W stack or OS like Linux, WinCE is required.
	If WLAN is optional, simply insert WIZ610Wi	Even though WLAN is optional, WLAN driver porting is required.
Stability	WIZ610Wi is standalone type so it operate independently with main system.	Main system control the WLAN also. If bug exist, whole system should be changed.
Function	AP, Client and Serial to Wireless converter function	Client function

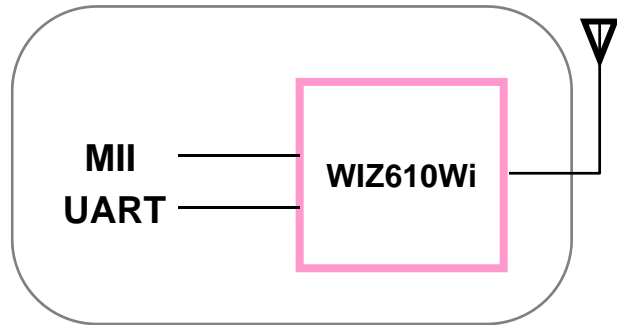
◆ Configuration – MII to MII interface



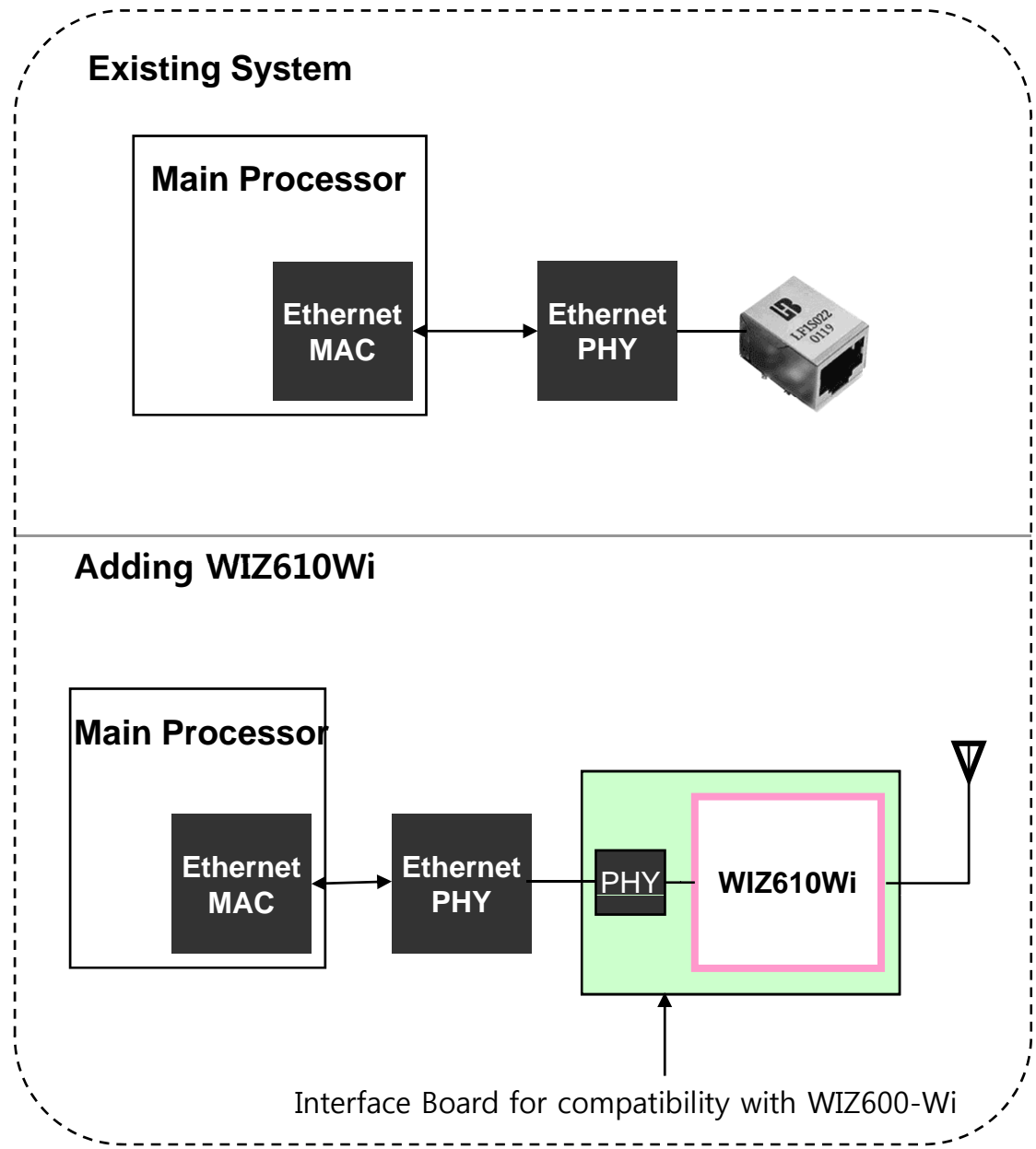
If existing system has Ethernet interface (if using Ethernet MAC), the WLAN can be added through MII to MII



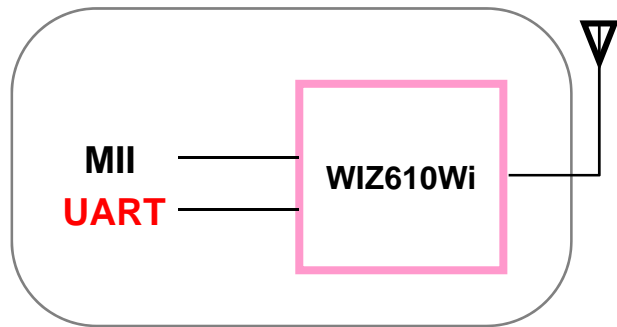
◆ Configuration- PHY to PHY



If existing system has Ethernet interface (if using Ethernet MAC), WLAN can be added through PHY to PHY.

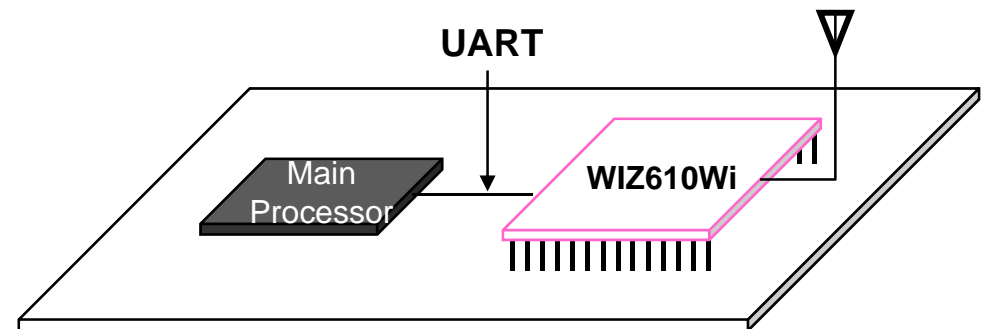
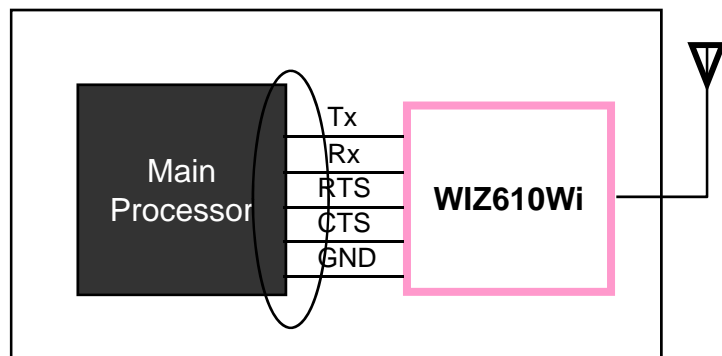


◆ Configuration - UART



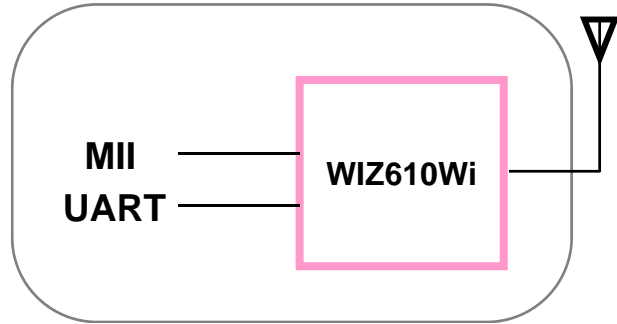
If existing system has UART interface, "Serial to WLAN" can be implemented

- UART



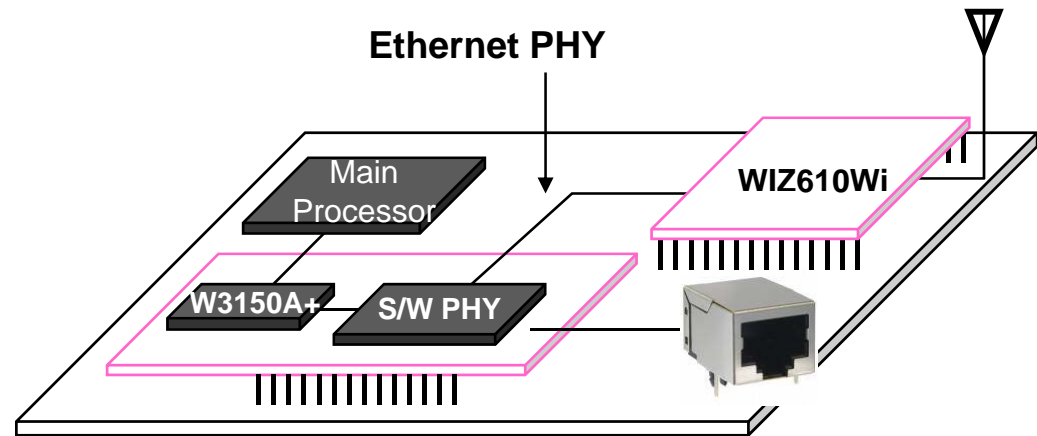
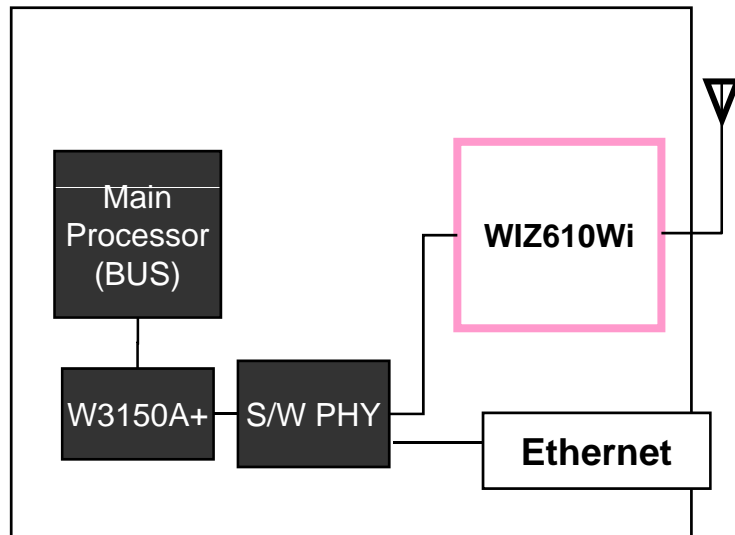
*RTS/CTS is required for H/W Flow Control

◆ Configuration



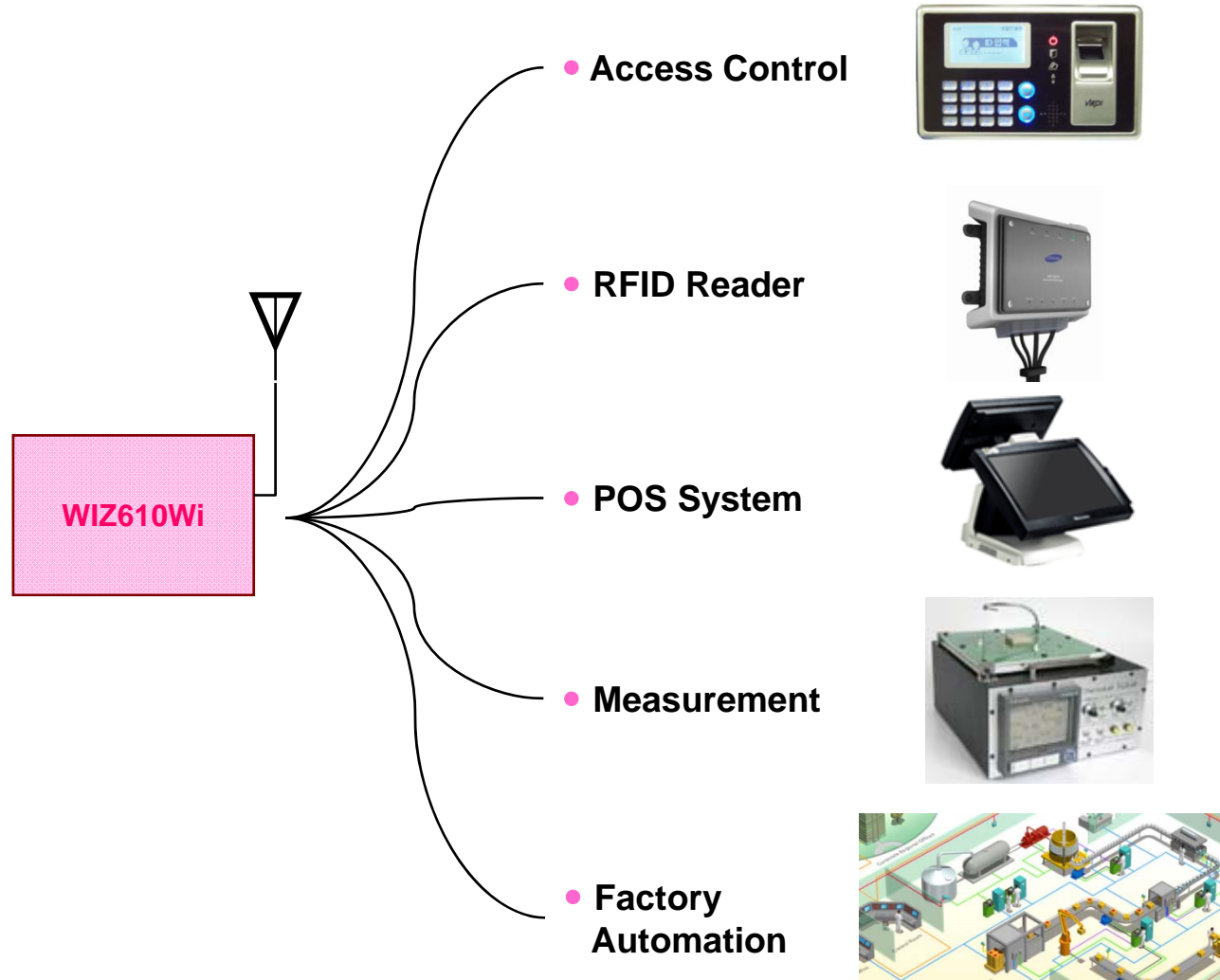
The simultaneous use of WLAN and Ethernet can be implemented by using switching PHY chip..

- Ethernet + Wireless LAN



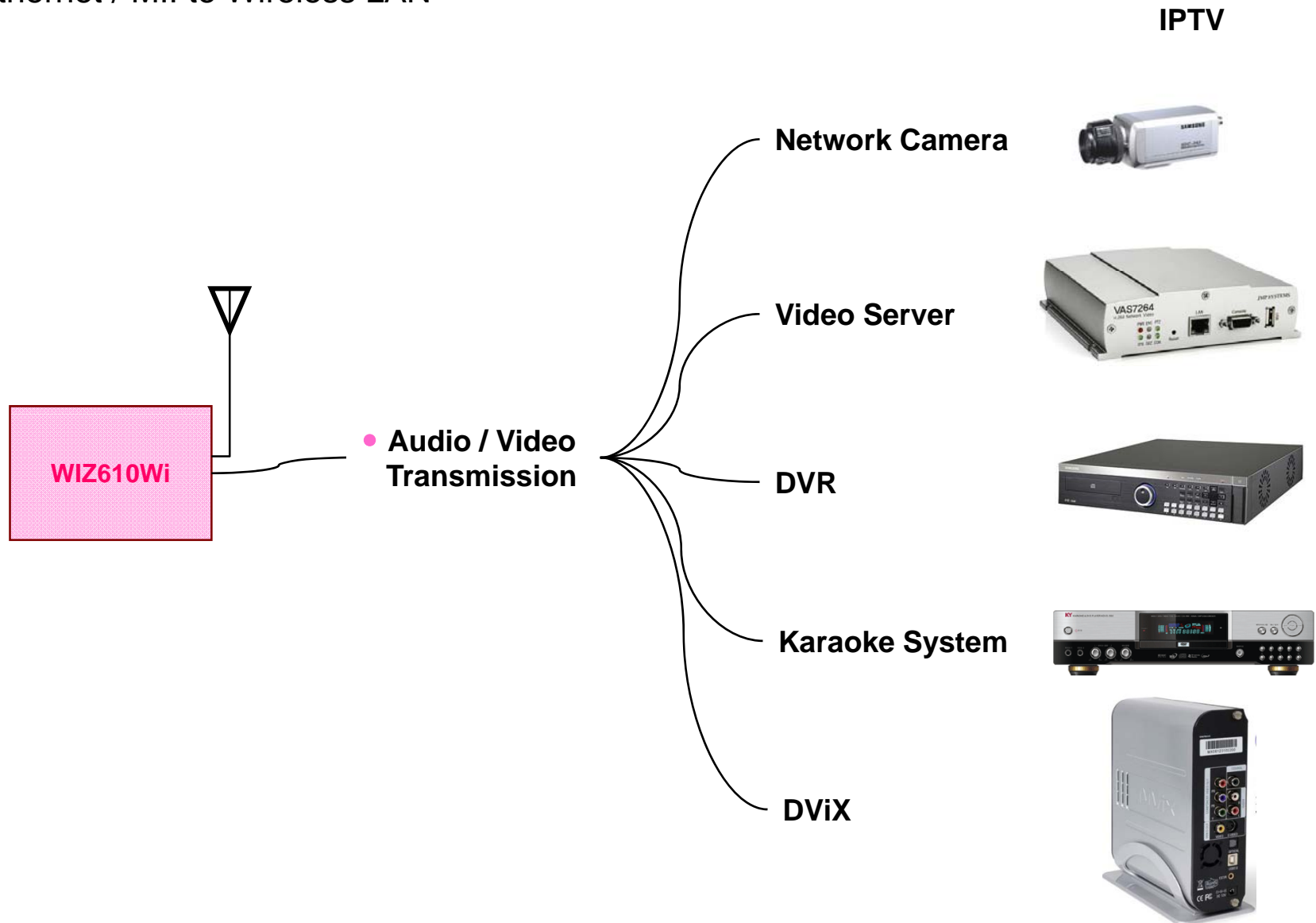
◆ Target Application

- Serial to Wireless LAN



◆ Target Application

- Ethernet / MII to Wireless LAN





Specification

Hardware Specification

Standard	IEEE802.11b/g
Interface (Pin Header)	MII, UART, GPIO(0~5), Power, 1.27mm Pitch, U.FL
Operating Temperature	(0~55)
Storage Temperature	-20~77
Dimensions	32mm X 35 mm X 9mm

RF Specification

Speed(Data Rate)	54Mbps
Output Power	
802.11b (1~11Mbps)	14dBm
802.11g (6~24Mbps)	14dBm
802.11g (36Mbps)	14dBm
802.11g (48Mbps)	14dBm
802.11g (54Mbps)	14dBm
Standards	
IEEE 802.11b	11Mbps, 5.5Mbps, 2Mbps, 1Mbps
IEEE 802.11g	54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 9Mbps, 6Mbps, automatically fallback to 5.5Mbps, 2Mbps, 1Mbps
Frequency Range	
IEEE 802.11b/g	2.412GHz ~ 2.462GHz (US & Canada)
	2.412GHz ~ 2.472GHz (Europe)
	2.412GHz ~ 2.484GHz (Japan)
Modulation Techniques	OFDM and CCK
Receiver Sensitivity	802.11b -65dBm@11Mbps 802.11g -76dBm@54Mbps



Specification

Others

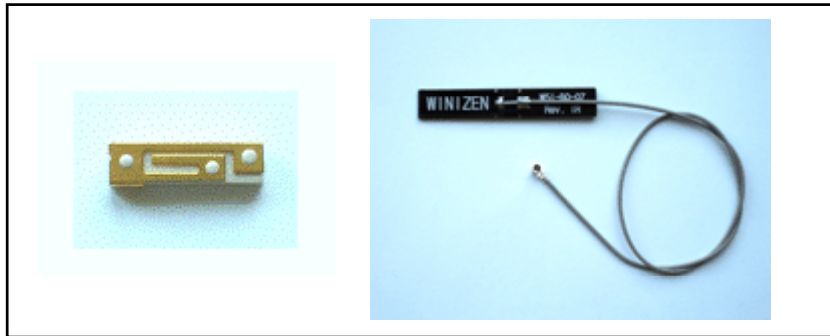
OPERATING MODES	SECURITY
<ul style="list-style-type: none">• Access Point• Client• Gateway• Serial to Wireless LAN	WEP 64/128bit WPA/WPA2 PSK/AES/TKIP 802.1x(Radius)
WAN TYPE	LED INDICATORS
<ul style="list-style-type: none">• Static IP	WLAN, LAN, Diagnostic, Power
<ul style="list-style-type: none">• DHCP Server/Client	POWER REQUIREMENTS
	<u>3.3V summary(W)</u> <u>10Mbps HD(Traffic) 0.27A 0.42</u> <u>100Mbps HD(Traffic) 0.119A 0.39</u>
DEVICE MANAGEMENT	DATA CAPTURE & NOTIFICATION
<ul style="list-style-type: none">• HTTP• Telnet	<ul style="list-style-type: none">• Event Logging (Syslog)

◆ Antenna Policy

Internal, External Antenna Ready.

Partnership with Antenna Design Center, so customization is possible with small development fee.

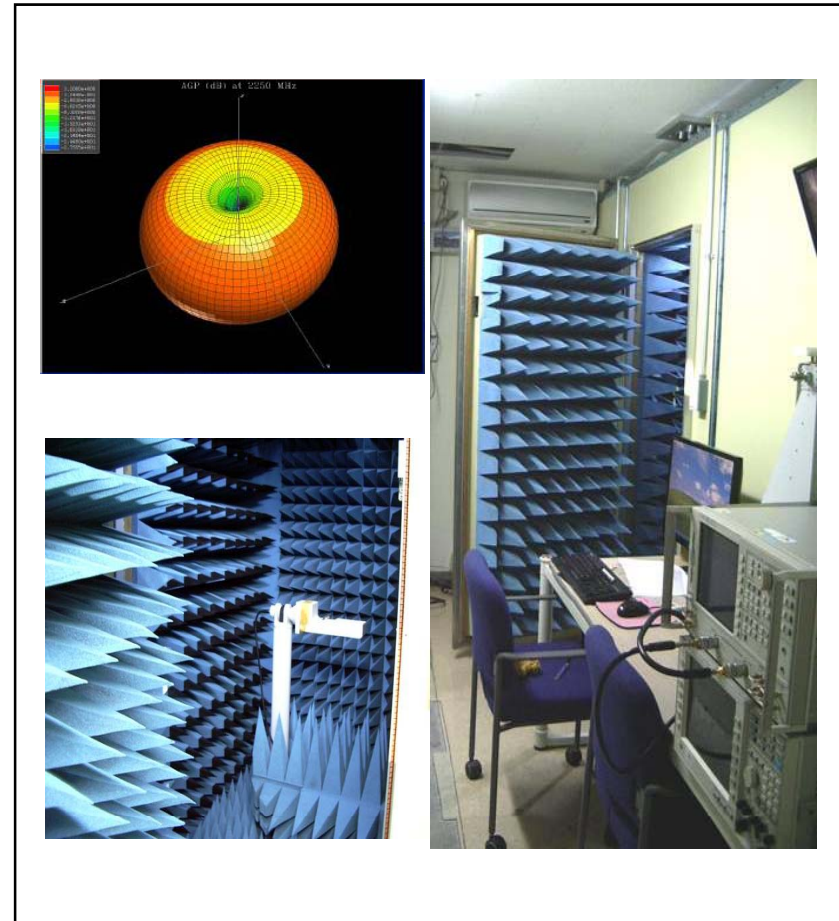
Internal Antenna



External Antenna



Antenna Design Center



FAQ

**** Why is WIZ610Wi more expensive than WLAN adaptor card (Mini PCI/USB/SDIO...etc)?**

WLAN adaptor card is composed of RF, MAC and PHY. It does not include main processor. However, WIZ610Wi has been developed by using SoC chip (including main processor, MAC and PHY) Therefore, by using WIZ610Wi, the functions of AP, Client, Repeater and Serial to WLAN can be implemented easily and quickly. The engineer does not need to take care of driver porting or other WLAN related jobs.

****What kind of OS is required?**

WIZ610Wi is stand-alone typed module independent of existing application board. Therefore, WIZ610Wi can be applied to any system having any kind of OS or Non OS.

FAQ

**** What is communication range of WIZ610Wi?**

If using 2dBi Antenna, WIZ610Wi supports about 200m communication range. However, obstacles or multi-pass environment can affect the communication, and change the range. The main factors of communication range are the GAIN(dBi) of antenna and Receive Sensitivity.

The communication range between wireless devices depends on output power and GAIN of antenna. If the sum of output power and antenna gain is higher, the communication range is wider.

****Customization is supported?**

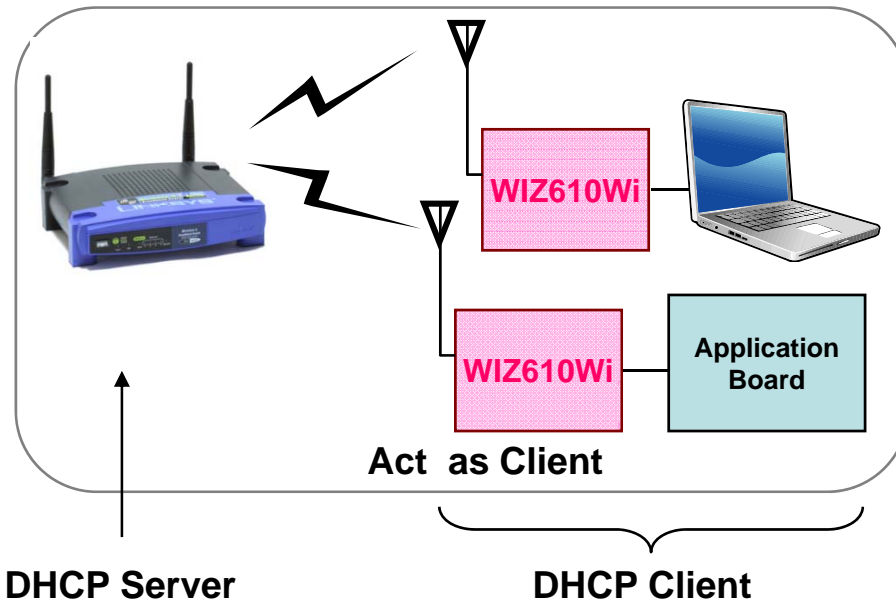
MAC address, Logo, SSID and serial command can be changed to the requirement of customers.

****How can I change the configuration?**

If you connect to WIZ610Wi by inputting IP address at the Internet browser, the configuration pages are displayed. You can change configuration value in the web pages. Or not, by using serial command (input to UART pin), the configuration can be changed.

◆ FAQ

**** Can the IP address be assigned to application board where WIZ610Wi is connected through MII at the DHCP mode?**



As shown in the figure, IP address can be assigned to WIZ610Wi, PC and application board at the DHCP mode.

****What is the communication speed?**

-Data Rate: 54Mbps

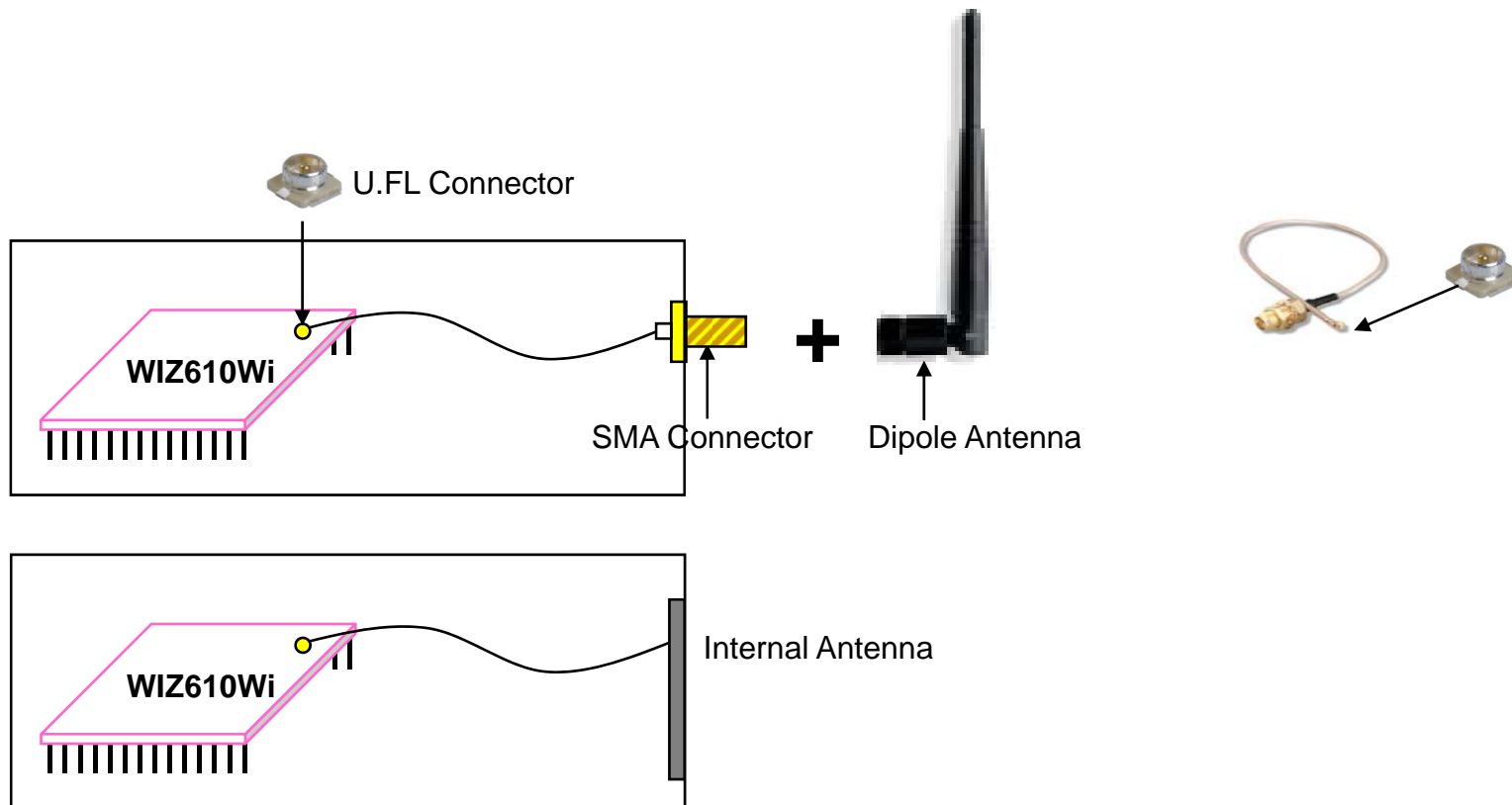
-Effective Speed : If we measure the communication speed by using FTP speed program, only half of data rate is shown. It is because the overhead occupies a half of data packet. Therefore the effective speed of WIZ610Wi is 20~25Mbps.

◆ FAQ

** What kind of antenna should be used?

The RF output of WIZ610Wi is processed through U.FL interface.
Between the module and Antenna, there are U.FL connector, cable and SMA connector.

There are various types of antennas. For the selection of antenna, if you need the support, contact to WIZnet any time.



APPENDIX

◆ Wireless Solution

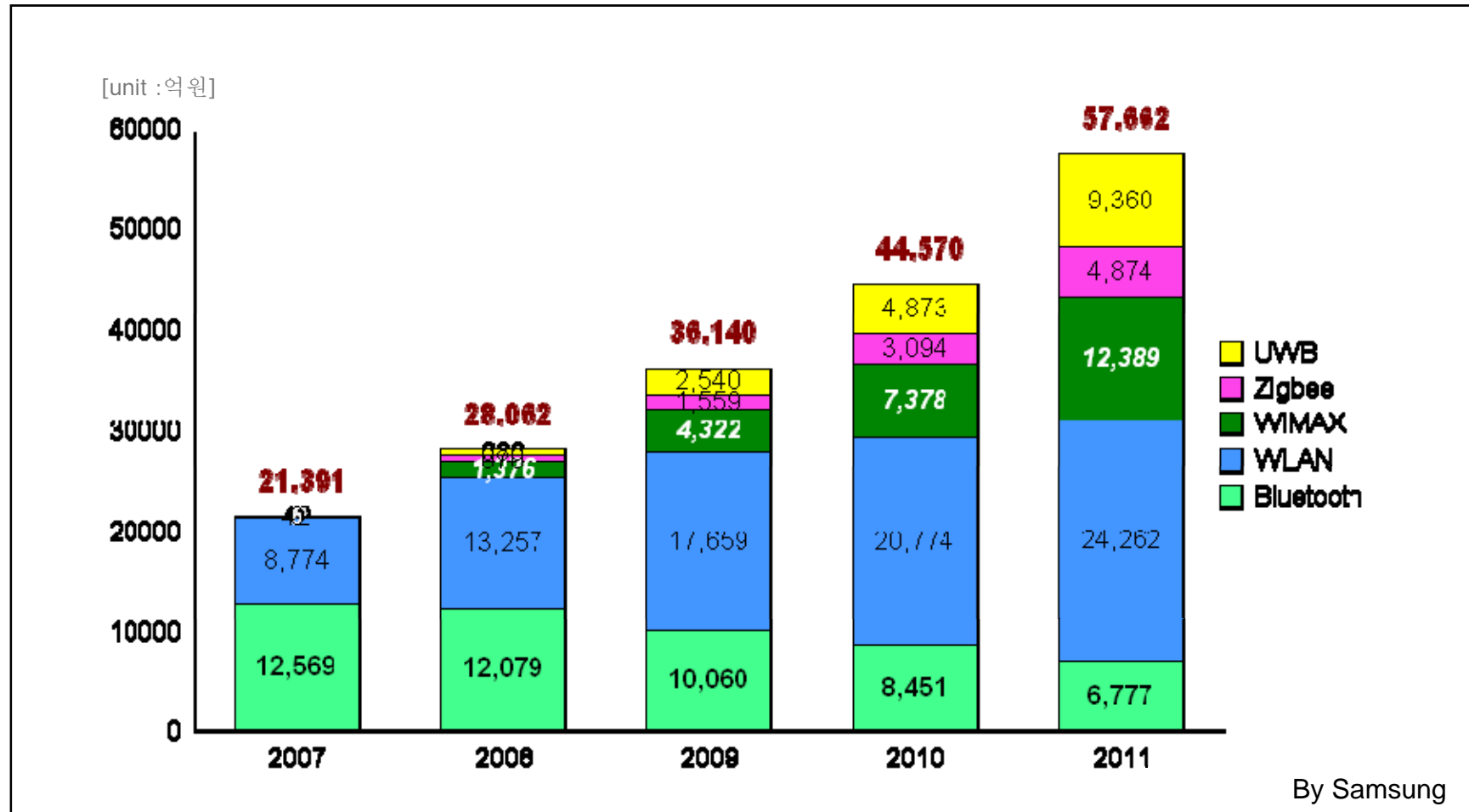
Comparison Chart of Zigbee, Bluetooth, WLAN & UWB

	ZigBee	Bluetooth	WLAN	UWB
Effective Speed	250kbps	1Mbps (3Mbps-'06)	11~54Mbps	480Mbps
Coverage	~30m	10m	~100m	~10m
RF Band	2.4GHz (ISM)	2.4GHz (ISM)	2.4GHz, 5GHz (ISM)	3.1~4.9GHz
Network Topology	Star(1:250), Mesh	Star (1:7)	Star(1:32)	1:1
Usage	Low Power Consumption control & monitoring	Short Distance Audio streaming	Internet Connection Audio/Video Streaming	Short Distance / High Quality / Multi-Audio/Video streaming, High Speed Data Communication
Feature	Low Cost, Low Power Consumption, Network: Quick Connection, Mesh supported	Low Cost, Audio streaming	Wide Communication Range Internet Connection	High Speed Communication Wireless USB Supported (on the process of standardization)
Internet Connectivity	△	△	○	△
Market Maturity	Standardization is just finished Early Step	Matured	Matured	On the process of standardization Early Step

Only WLAN supports the TCP/IP standard to connect the Internet

◆ Market Forecast

At the mobile device, embedded WLAN modules are more adopted



Thank You