

User Manual

Model : HB-USP-GT2-W



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Chapter 1. Overview

1.1 Overview of Product

HB-USP-GT2-W is a sink node that receives data from HB-USP-GT1L-W via wireless communication and transfer data to universal monitoring program(LDP) via ethernet.

1.2 Composition of Product

Name	Quantity	Remark
Main body (HB-USP-GT2-W)	1	
Power adaptor	1	Input : AC100~240V(50/60Hz) Output : DC5V  4A
LAN cable	1	UTP cable (1m)
RF antenna	1	Helical antenna(2.4GHz, 2.85 dBi)

*  : Direct current

1.2.1 Main Body

HB-USP-GT2-W consists of RJ45 port, power terminal, RF antenna, and LED.



1.2.2 Power Adaptor

Power adaptor is a device that supplies power to operate the main body of sink node. Power input is AC 100~240V (50/60Hz) and output is DC5V, 4A.



1.2.3 LAN Cable

LAN cable is used to connect the main body with a monitoring device (PC, etc.)



1.2.4 RF Antenna

RF antenna is used to transmit or receive electromagnetic waves.



Chapter 2. Product Description

2.1 Specifications

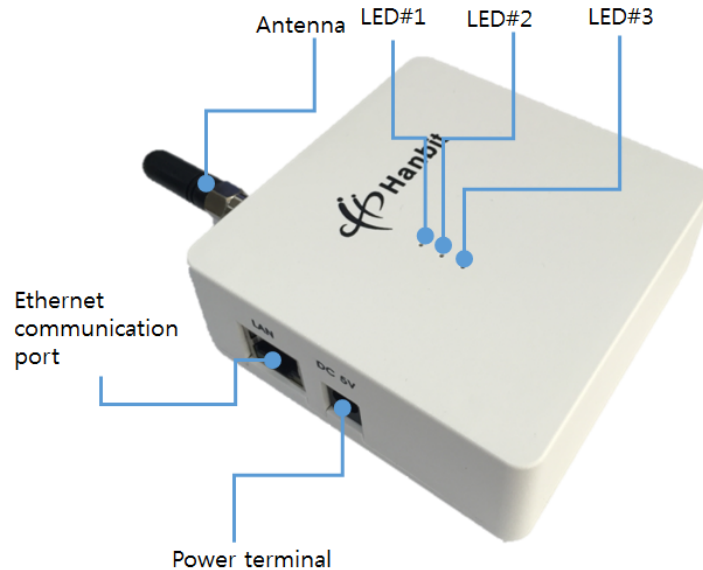
Specifications of this product are as follows.

Hardware	
Microprocessor	STM32F205 (32bit, ARM cortex-M0)
Memory	128Kbyte program memory
	64KByte SRAM
Clock speed	120MHz
RF	WiFi
Ethernet	W5500
Ethernet Interface	
Protocol	TCP/IP, UDP/IP
Communication Speed	10Base-T (10Mbps)
Connector	RJ45
RF Interface	
Protocol	Light Weight TCP/IP
Baudrate	921,600 bps
Communication distance	10m
Frequency range	2,400MHz ~ 2,483.5MHz
Transmit power	14dBm(Typical)
Antenna	Helical, 2.85 dBi, SMA type
Analog Sensor Power Supply	
Voltage	DC 5V
Power and Environment	
Input voltage range	4.8V ~ 5.2V
Operation Temperature	-20 °C ~ 60 °C
Storage Temperature	-30 °C ~ 70 °C
Case materials	ABS (Acrylnitrile-Butadiene-Styrene)
Weight	150 g
Dimension	84 x 89 x 30 mm (W x H x D), except RF antenna

* The Battery is not replaceable.

2.1.1 Name of Each Part

Name and function of each part of this product are as follows.

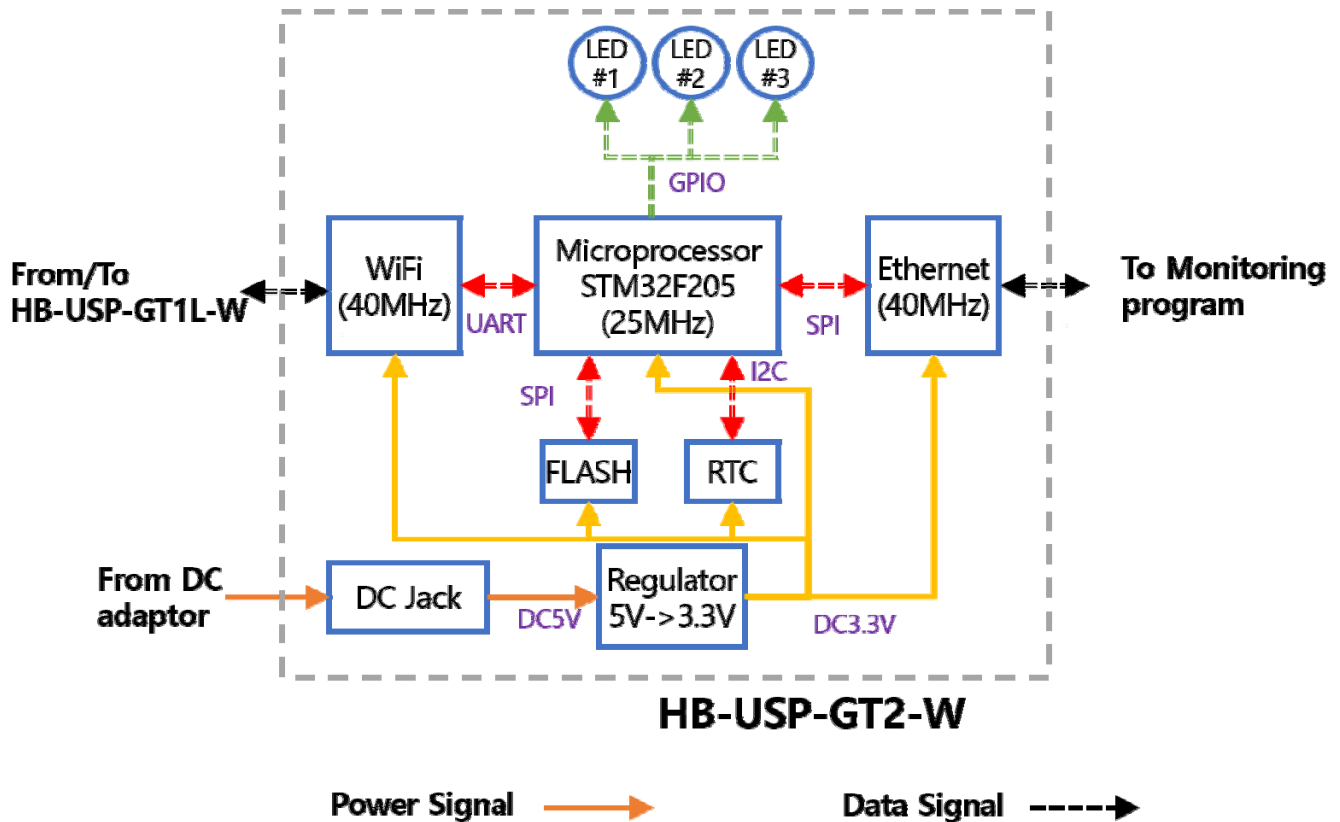


○ Power terminal	This is power input terminal to operate the main body of sensor node. Power adaptor provided upon purchase is connected to this terminal.
○ Ethernet communication port	This port is used to transfer sensor data to general monitoring program. The provided LAN cable is used to connect this port to a monitoring device (PC, etc.).
○ LEDs	This product has 3 LEDs. - LED #1 : Not function - LED #2 : Blink 2~3 times per second - LED #3 : Blink 1 time per 4 seconds
○ Antenna	This antenna is used to transmit or receive electromagnetic waves. The gain is 2.85dBi.

2.2 Hardware Description

2.2.1 Block Diagram

The figure below shows block diagram of the product hardware.



<Block Diagram of HB-USP-GT2-W>

This product is operated by receiving 5V from DC adaptor. Voltage of 5V is down-converted to 3.3V through voltage regulator, and 3.3V is supplied to microprocessor, WIFI module, FLASH, RTC and Ethernet communication part.

Data received from the HB-USP-GT1L-W device are passed through the WIFI module of HB-USP-GT2-W device and converted into UART signal. Data are processed by microprocessor, and stored in a buffer. Processed data are sent to the monitoring device via ethernet.

Setting data stored in FLASH are automatically loaded when device power on. The LED indicates the current operating status of the microprocessor and the WIFI module.

FCC Compliance Statement

This equipment has been tested and complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.