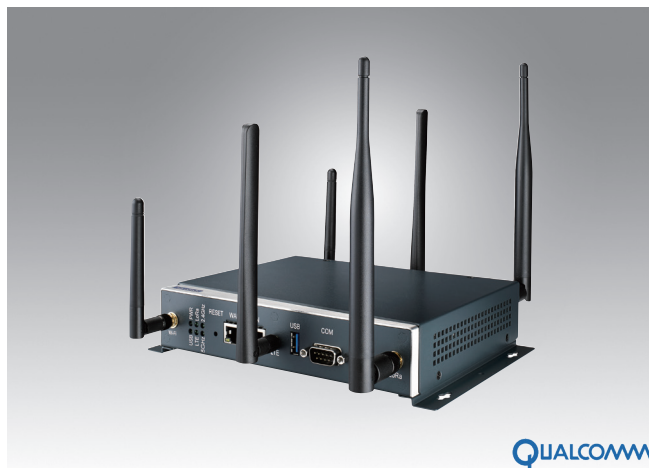


WISE-3610

Wireless IoT LoRa Network Gateway



Features

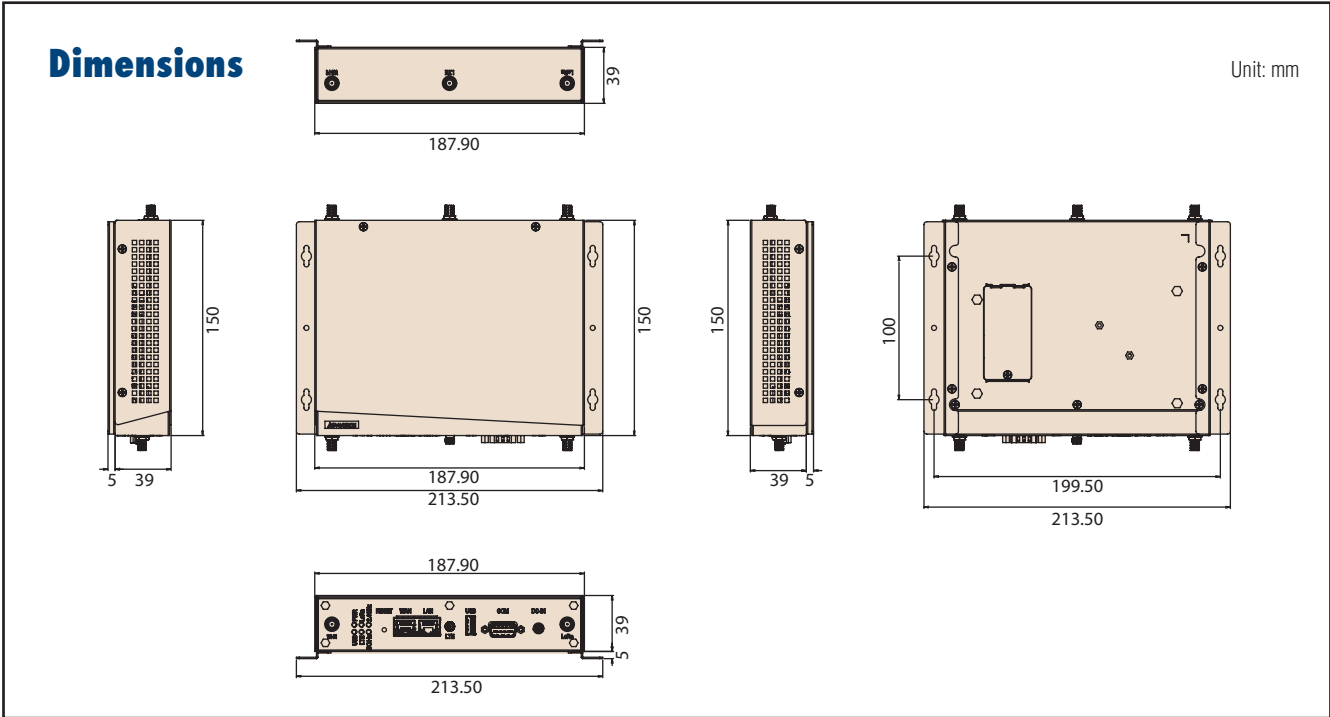
- Qualcomm Atheros Quad-Core ARM Cortex-A7 SoC
- Built-in Dual Band Concurrent Wi-Fi MU-MIMO (2x2)
- LPWAN LoRa Private (WISE-Link) Connectivity
- WAN x1 / LAN x1 Gigabit Ethernet
- Integration of Modbus TCP Networks
- IPSec / L2TP VPN Traffic Encryption
- Rich Network Scenario by Easy S/W Configuration
- Modularization Hardware Design with 2 miniPCIe Slots
- OpenWRT BSP Embedded
- Web UI User Interface

Introduction

WISE-3610 is a Qualcomm ARM Cortex A based hardware platform, which operates at OpenWRT, described as a Linux distribution for embedded devices. Leveraging wireless sensor technology, the Advantech WISE-3610 Industrial Router is as Advantech IoT gateway designed for smart cities and Industry 4.0 applications, even those in harsh environments. This IoT gateway can aggregate both wireless sensor networks (WSN), including Low Power WAN (LPWAN) technology by Advantech private LoRa technology, wired sensors and ties them into an IP network. With a modular slot design, it can agilely adapt to a variety of wireless technologies at regional RF bands with wireless communication protocols by various uplink requirements and quickly go to market.

Specifications

Processor System	CPU	QCA Quad-core ARM Cortex A7 CPU 716 MHz	
	RAM	DDR3L 256MB	
	Flash	128MB	
Ethernet	WAN	1 10/100/1000 Mbps	
	LAN	1 10/100/1000 Mbps	
Security	VPN Engine	IPsec, L2TP	
Connectivity	Wi-Fi	2x2 IEEE802.11ac MU-MIMO 2.4GHz / 5GHz	Qualcomm® VIVE™ technology
	LoRa	LoRa Private Network - WISE-Link	up-to 500 sensor nodes support
	4G/LTE (Option)	4G miniPCIe card	
Expansion	SD socket	1 x Micro SD socket	
	mini PCIe	1 x Full size mini PCIe slot 1 x Full size mini PCIe Module	For LoRa Host
	SIM	2 x Micro SIM slot	
	USB	1 x USB 3.0 type A	
I/O (Edge)	Serial Port	1 x RS-232/422/485 (DB9 Male)	Configure by hardware switch on board
	Antenna	6 x SMA Connector	Wi-Fi: 2 x RP-SMA LoRa: 2 x SMA Optional for 4G: 2 x SMA (1 x Rx Diversity)
	LED	6 x PWR/LoRa/Wi-Fi 2G/Wi-Fi 5G/USB/WWAN	
	Button	1 x Reset button	
	Power	Power Supply Voltage	9 - 24V
Environment	Power Type	DC-in	
	Power Consumption	18 Watt	
	Operational Temperature	-20 ~ 70 °C	
Mechanical	Operating Humidity	5 ~ 95% Relative Humidity, non-condensing	
	Dimensions (W x D x H)	187.9mm x 150mm x 39mm	
Operating System	OpenWRT Barrier Breaker (Linux (3.14))		
Network Sub-System	L2/3 multilayer switch / router		
	Access control list mask rules		
	Hardware network address translation (NAT) engine		
Network Connectivity	4 x scenario configurations by corresponding communication network support - NorthBond: WWAN (4G), WAN, Wi-Fi (2.4GHz or 5GHz) - SouthBond: LAN, Wi-Fi (2.4GHz or 5GHz), LoRa		Depend on different application environment for corresponding configuration
Cloud	WebAccess / SCADA & WISEPaaS / EdgeSense & ARM Pelion		
Certification	TELEC, CE(RED Compliance)/FCC/IC Class B, SRRC, VCCI, BSMI, NCC		



Software Key Features

<p>Completed Software Services</p> <ul style="list-style-type: none"> ▪ Modbus TCP networks ▪ Rich network scenario configuration ▪ Point-to-point VPN encryption engine ▪ Network routing path acceleration 	<p>Easy-Use from Sensor to Cloud</p> <ul style="list-style-type: none"> ▪ WISE-Link LoRa Private Network ▪ Web UI setting for WSN, Gateway and Cloud ▪ IoT communication with MQTT protocol (WebAccess / SCADA compatible) ▪ WISE-Agent connected to WISE-PaaS/EdgeSense ▪ Mbed Edge connected to ARM Pelion
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Ordering Information

Model Name	Description
WISE-3610ILS-51A1C	WISE-3610 Private LoRa Network IoT Gateway CN470
WISE-3610ILS-51A1E	WISE-3610 Private LoRa Network IoT Gateway EU868
WISE-3610ILS-51A1J	WISE-3610 Private LoRa Network IoT Gateway JP923
WISE-3610ILS-51A1N	WISE-3610 Private LoRa Network IoT Gateway NA915
WISE-3610ILS-51A1T	WISE-3610 Private LoRa Network IoT Gateway TW920
WISE-DK3610-LSJPO	WISE-3610 Private LoRa IoT Gateway Starter Kit JP923

Related Models

Model Name	Description
WISE-1510	Wireless IoT Private LoRa M2.COM Module
WISE-1520	Wireless IoT Wi-Fi M2.COM Module
WISE-1530	Wireless IoT Wi-Fi/BLE Combo M2.COM module

Packing List

Part No.	Description	Quantity
96PSA-A36W12R1	ADP A/D 100-240V 36W 12V	1
1750008001-01	Antenna 2.4Ghz / 5Ghz SMA Male Reverse	2
1960082071N001	Mounting BKT for WISE-3610	2

Optional Items

Part No.	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
1750008424-01	4G/LTE Antenna Dipole 4dBi Full Band
1750008669-01	4G/LTE RX Diversity Antenna Cable IPEX to IPEX Connector
EWM-C117FL02E	4G/LTE/HSPA+/GPRS Cat.4 module*
EWM-C117FL07E	4G/LTE Cat.4 Module for Japan NTT DoCoMo
1750008599-01	LoRa Antenna Dipole 1dBi 863-870 MHz
1750008598-01	LoRa Antenna Dipole 1dBi 902-928 MHz
1750008771-01	LoRa Antenna Dipole 1.5dBi 470-510 MHz

* System bundles wireless modules; which need RED compliance

WISE-3620

Wireless IoT WiFi Network Gateway

Preliminary



WISE-PaaS/RMM



Features

- Qualcomm Atheros Quad-Core ARM Cortex-A7 SoC
- Built-in Dual Band Concurrent Wi-Fi MU-MIMO (2x2)
- WAN x1 / LAN x1 Gigabit Ethernet
- Integration of Modbus TCP and Modbus RTU networks
- IPSec / L2TP VPN Traffic Encryption
- Rich Network Scenario by S/W Configuration
- Modularization hardware design
- OpenWRT BSP embedded
- Web UI user interface

Introduction

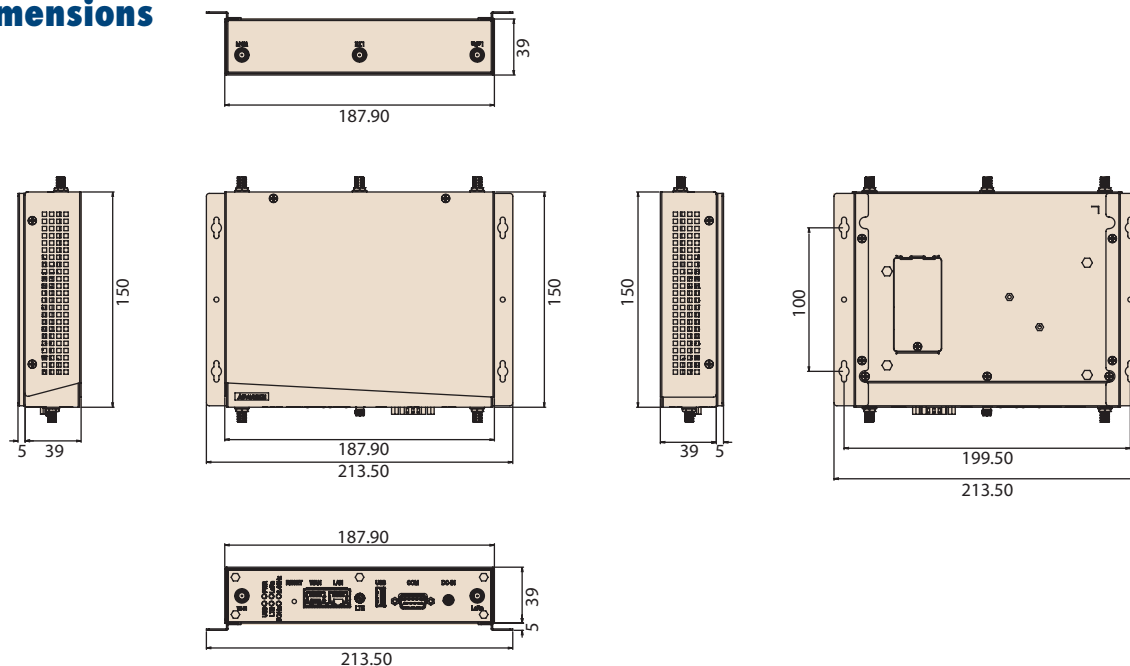
WISE-3620 is Qualcomm ARM Cortex A based hardware platform, which is operating at OpenWRT, described as a Linux distribution for embedded devices. The Advantech WISE-3620 Industrial Router is Advantech IoT gateway design for smart city, Industrial 4.0 applications, even those in harsh environment, leveraging wireless sensor technology. This IoT gateway can aggregate both the wireless sensor networks (WSN), including 802.11AC MU-MIMO Technology, wired sensors and ties them into an IP network. With modular slot design, it can agilely adapt to a variety of wireless technologies at regional RF bands, wireless communication protocol by various uplink requirement and quickly go to market.

Specifications

Processor System	CPU	QCA Quad-core ARM Cortex A7 CPU 716 MHz	
	RAM	DDR3L 256MB	
	Flash	128MB	
Ethernet	WAN	1 10/100/1000 Mbps	
	LAN	1 10/100/1000 Mbps	
Security	VPN Engine	IPsec, L2TP	
Connectivity	Wi-Fi	2x2 IEEE802.11ac MU-MIMO 2.4GHz / 5GHz	Qualcomm® VIVE™ technology
	3G/LTE (Option)	3G miniPCIe card	3G Band Support: B5, B8, B2, B1, B4
	SD socket	1 x Micro SD socket	
Expansion	mini PCIe	1 x Full size mini PCIe slot 1 x Full size mini PCIe Module	
	SIM	2 x Micro SIM slot	
	USB	1 x USB 3.0 type A	
I/O (Edge)	Serial Port	1 x RS-232/422/485 (DB9 Male)	Configure by hardware switch on board
	Antenna	6 x SMA Connector	Wi-Fi: 2 x RP-SMA Optional for 3G: 2 x SMA (1 x Rx Diversity)
	LED	6 x PWR/Wi-Fi 2G/Wi-Fi 5G/USB/WWAN	
	Button	1 x Reset button	
	Power Supply Voltage	9 - 24V	
Power	Power Type	DC-in	
	Power Consumption	18 Watt	
	Operational Temperature	-20 ~ 70 degree C	
Environment	Operating Humidity	5%-95% Relative Humidity, non-condensing	
	Dimensions (W x D x H)	187.9mm x 150mm x 39mm	
Operating System	OpenWRT Barrier Breaker (Linux (3.14))		
Network Sub-system	L2/3 multilayer switch / router		
	Access Control List mask rules		
	Hardware network address translation (NAT) engine		
Network Connectivity	4 x scenario configurations by corresponding communication network support - NorthBond: WWAN (3G), WAN, Wi-Fi (2.4Ghz or 5Ghz) - SouthBond: LAN, Wi-Fi (2.4Ghz or 5Ghz), LoRa		Depend on different application environment for corresponding configuration
Cloud	WISE-PaaS / RMM Cloud		
Certification	TELEC, CE/FCC/IC Class B, SRRC, KCC, NCC		

Dimensions

Unit: mm



Software Key Features

Completed Software Services

- Modbus TCP and Modbus RTU networks
- Rich network scenario configuration
- Point-to-point VPN encryption engine
- Network routing path acceleration
- WISE-Agent

Easy-use from sensor to cloud

- Web UI setting for WSN, Gateway and Cloud
- IoT communication with MQTT protocol
- WISE-Agent connect to WISE-PaaS/RMM

Ordering Information

Model Name	Description
WISE-3620	WISE-3620 802.11AC MU-MIMO WiFi Engineering Sample

Related Models

Model Name	Description
WISE-1520ITB-TDA1E	WISE-1520 M2.COM Wi-Fi module
WISE-1530ITB-SDA10	WISE-1530 M2.COM WIFI/BLE module

Packing List

Part No.	Description	Quantity
96PSA-A36W12R1	ADP A/D 100-240V 36W 12V	1
1750008001-01	Antenna 2.4Ghz / 5Ghz SMA Male Reverse	2

Optional Items

Part No.	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
1750008424-01	3G/LTE Antenna Dipole 4dBi Full Band
1750008669-01	3G/LTE RX Diversity Antenna Cable IPEX to IPEX Connector
968EMW0093	Mini PCIE HSPA 3G Card with Rx Diversity

WISE-3200 Series

IoT Router



Features

- QCA 650MHz CPU with advanced power management capability
- Dynamic clock switching for ultralow power modes
- Full standards based Wi-Fi
- Configurable as a 1x1 or 2x2 solution
- Optional external PA/LNA
- Linux OS/ OpenWRT for easy development
- USB 2.0 host interface

Introduction

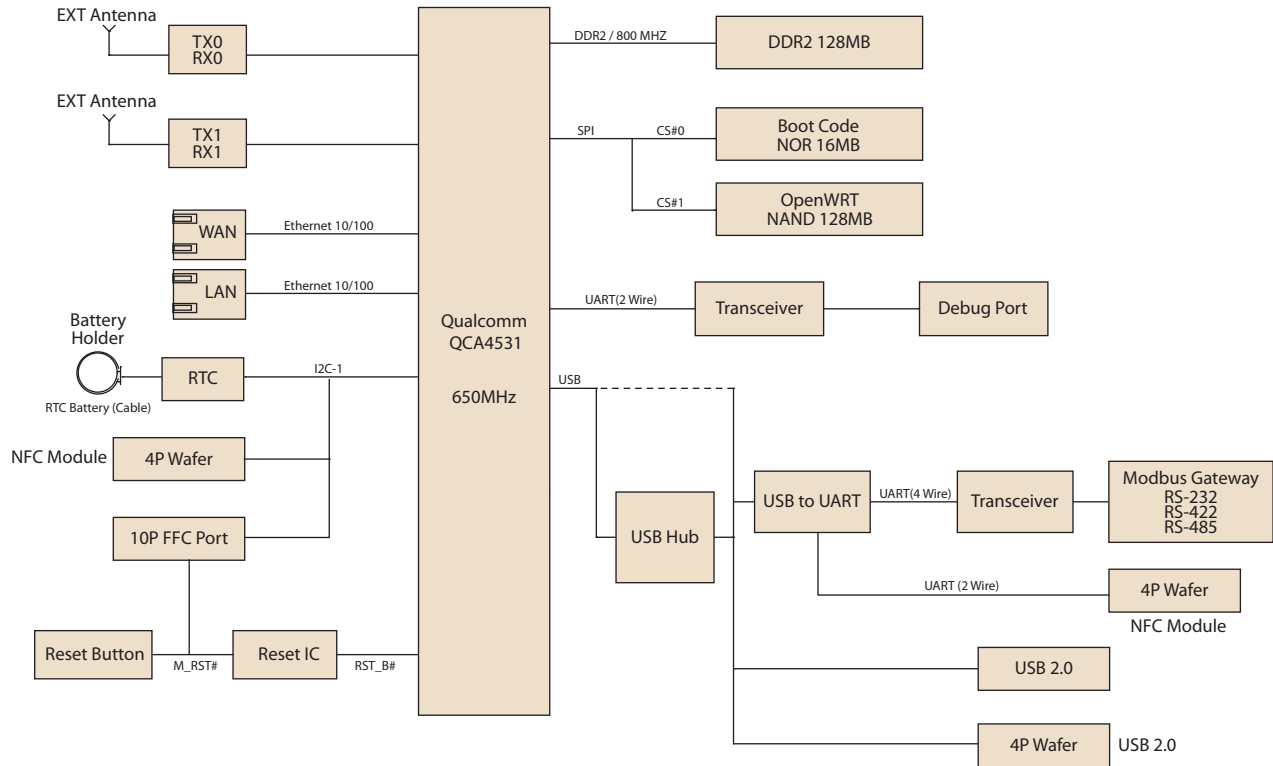
WISE-3200 is the Qualcomm MIPS QCA 4531 hardware platform which is operating with OpenWRT. WISE-3200 series support the different configuration with Ethernet, Wi-Fi, Zigbee and 4G/LTE communication. For EPD-230 and EPD-332, we select 2.4GHz Wi-Fi or Ethernet in up-link and zigbee in down-link with WISE-1840. For EPD-770 and EPD-870, we select 4G/LTE in up-link. The Advantech WISE-3200 Industrial Router is design for smart city, Industrial 4.0 applications.

Specifications

Processor System	CPU	MIPS QCA 4531 650 MHz Processor
	RAM	DDR2 128MB
	SPI Flash	16MB Boot code & 128MB OpenWRT
Ethernet	WAN	1 x 10/100Mbps for WAN
	LAN	1 x 10/100Mbps for LAN
Security		WEP 64 bit, WPA_PSK, WPA2_PSK, WPA_PSK/WPA2_PSK (Mixed Mode) Password protected access
Connectivity	Wifi	IEEE 802.11b/g/n 2T2R
	Zigbee	IEEE 802.15.4
Expansion	Mini PCIe	1 x full size mini PCIe module
IO (Edge)	Antenna x1	WiFi
	LED x2	Power on, WiFi & Zigbee module on
	Button x1	Reset button
	Com port x1	RS232/422/485
	USB x1	USB 2.0
	RJ45 x2	WAN/LAN
Power	Power Supply Voltage	12
	Power Type	DC-in
	Power Consumption	3W
Environment	Operational Temperature	-20~60 °C (Industrial) 0~50 °C (Commercial)
	Non-Operational Temp.	-40~85 °C (Industrial) -40~85 °C (Commercial)
	Operating Humidity	5% ~ 95% Relative Humidity, non-condensing
Mechanical	Dimensions (L x W x H)	143 x 101 x 30 mm
Weight		215 g
Operating System		Linux kernel 4.4.6, OpenWrt GCC 4.8.3 (for QCA MIPS SoCs)
Network sub-system	L2/L3 multilayer switch/router	<ul style="list-style-type: none"> ▪ DHCP Client ▪ Access control list mask rules ▪ Hardware network address translation (NAT) engine.
	WiFi	<ul style="list-style-type: none"> ▪ Channel Number selection ▪ 5MHz - 40MHz channel bandwidth selection ▪ Support updating different SSID / Password ▪ Support Router/AP/Bridge/Client Mode
Network connectivity	Uplink	WiFi 2.4G / WAN
	Downlink	WiFi 2.4G / LAN
	Operating Humidity	5% ~ 80% Relative Humidity, non-condensing
Certification		FCC/NCC/SRRC/CE

Block Diagram

WISE-3220



Ordering Information

Part No.	Description
WISE-3220IOS-21A1T	Wireless EPD 2.4G WiFi Network IoT Router
WISE-3240IOS-41A1E	Wireless EPD 2.4G WiFi Network IoT Router in industrial grade for Europe
WISE-3240IOS-41A1J	Wireless EPD 2.4G WiFi Network IoT Router in industrial grade for Japan
WISE-3240IOS-41A1N	Wireless EPD 2.4G WiFi Network IoT Router in industrial grade for North America
WISE-3240IOS-41A1T	Wireless EPD 2.4G WiFi Network IoT Router in industrial grade for Taiwan
WISE-3240IOS-41A1C	Wireless EPD 2.4G WiFi Network IoT Router in industrial grade for China
WISE-3240IOS-41B1E	Wireless EPD 2.4G WiFi Network IoT Router in commercial grade for Europe
WISE-3240IOS-41B1T	Wireless EPD 2.4G WiFi Network IoT Router in commercial grade for Europe TaiwanWQ40178321
WISE-3270IOS-71A1T	Wireless EPD 2.4G WiFi/LTE Network IoT Router

Packing List

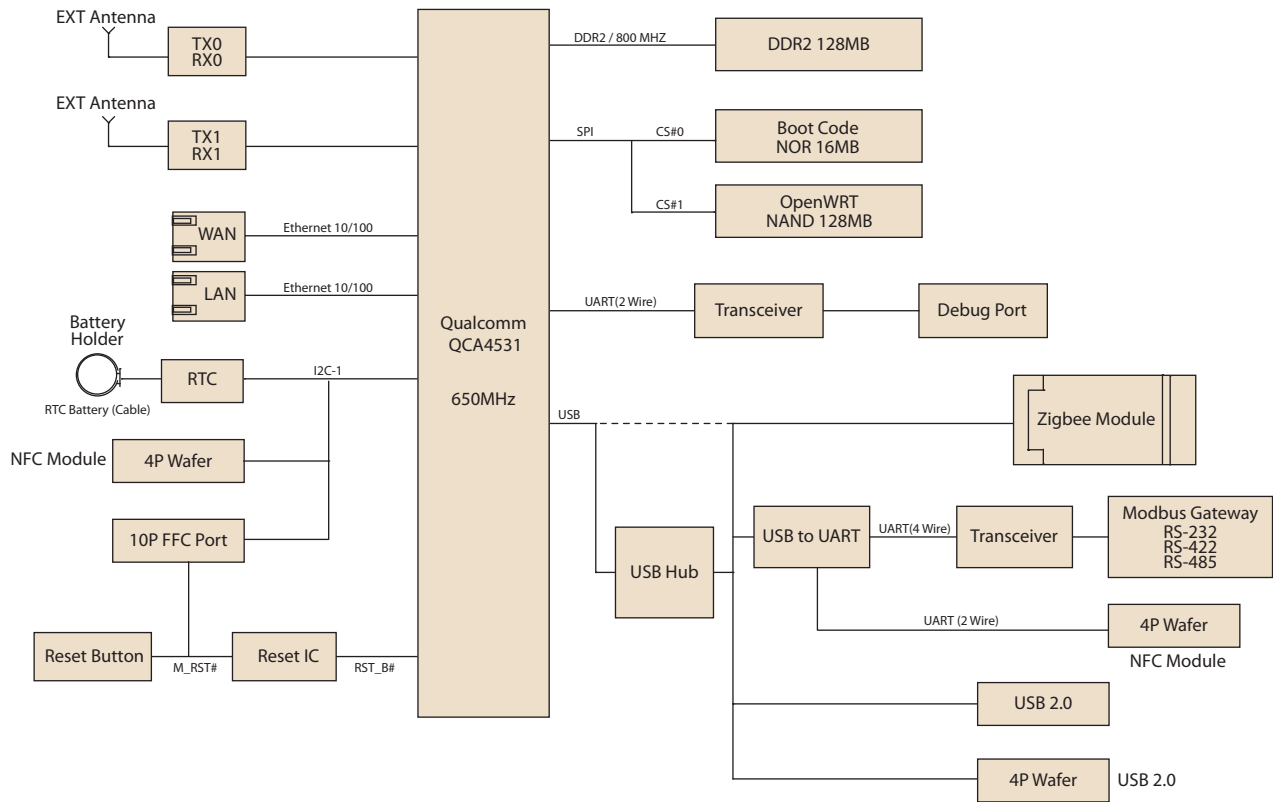
Part No.	Description
96PSA-A36W12W7-5	Adapter A/D 100-240V 36W 12V x1
1750002842	Wireless 2.4G Antenna R-AN2450-5701RS R/P SMA. M10.9cm
1750008818-01	4G/LTE Antenna Dipole 4dBi Full Band
1750006264	4G/LTE AntennaSMA(F)/MHF 15cmConnector

Optional Items

Part No.	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
WISE-1840WTB-TD010	MINI PCIE Card for Zigbee host control except EU
WISE-1840WTB-TD01E	MINI PCIE Card for Zigbee host control for EU
EWM-C117	Mini PCIE LTE 4G,3G WCDMA/DC-HSPA+, 2G Card

Block Diagram

WISE-3240



Block Diagram

WISE-3270

