MINEWSEMI

MinewSemi Connectivity Module Roadmap

MINEWSEMI

V1.2

About MinewSemi

Your Reliable Intelligent Connectivity Module Provider

Shenzhen MinewSemi Co., Ltd. is a wholly-owned subsidiary of Shenzhen Minew Technology Co., Ltd. MinewSemi is a global leading one-stop wireless connectivity module supplier integrating product research and development, technical application and service support. We offer connectivity module products for companies that rely on mission-critical connectivity and enterprise-grade performance.

With over 10 years of connectivity module innovation experience, we are capable of independently developing and producing high-performance connectivity module including Bluetooth®LE, GNSS, Wi-Fi, LoRa, LoRaWAN, UWB, 5G, NB-IoT,and other comprehensive Connectivity Module products. Besides reliable, convenient, safe and intelligent IoT solutions for almost all vertical industries, we are also geared to customize the best and optimal connectivity module and solutions catering to your special requirements. Also, our connectivity module can be used individually or bundled into a comprehensive solution to reduce time-to-market and cost.

MINEWSEMI The subsidiary of **MINEW**

MinewSemi IoT Connectivity Module

80 +
Country

200 +
Brand

10,000 +
Factory Square(m²)

1,000,000 +
Monthly Production Capacity(Pcs)

(•)) MinewSemi Focuses on Connectivity Module

Bluetooth Bluetooth low power communication module, extremely low power consumption, strong anti-interference ability, can connect a variety of devices at the same time.
● Application:
- Smart Home
- Instrument and apparatus
- Smart Transportation
- Medical electronics
- Fitness equipment

GNSS GNSS module has extremely high response speed and positioning accuracy, as well as very reliable stability.The positioning accuracy can reach centimeter level.
● Application:
- Smart agriculture
- High precision mapping
- Location search
- vehicle navigation
- Safety inspection

WiFi WiFi module can connect physical devices to WiFi wireless network to achieve the purpose of networking.Data collection is realized through the cloud system.
● Application:
- Smart Home
- Programming for Education
- Wearable devices
- Medical electronics
- Equipment for pets

LoRa LoRa module can realize the interconnection of data nodes, wider area coverage, low power transmission distance, High sensitivity, strong anti-interference.
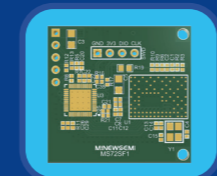● Application:
- Smart agriculture
- Security system
- Street lighting
- Building automation
- Smart meter meter

UWB UWB module has strong penetration, low power consumption, good anti-multipath effect, high security and accurate positioning.
● Application:
- Smart factory
- Electric power plant
- Warehousing and logistics
- Public prosecutor
- Smart pension

mmWave Unlock Precise Sensing: MinewSem's mmWave RADAR Module, an invaluable contactless system detecting objects with precision, operating between 60~64GHz
● Application:
- Smart Home
- Building automation
- Medical electronics
- Security& Surveillance
- Smart toilet

Product Roadmap _____ 🚀
www.minewsemi.com

Product Advantage

Multiple Certifications
RoHS, REACH, CE, FCC, BQB, IC, SRRC, TELEC, WPC, RCM, WEEE, AEC, KC

High & Stable Performance
Help ease development, speed up time-to-market and improve ROI.

Powerful Product Output
SMT/DIP/Injection/Assembly full line, automatic million-level production capacity

Various Production Lines
Different types of IoT Module including GNSS, BLE, WIFI, LoRa, LoRaWAN, UWB,etc

Ultra-compact & Low-power
Extremely easy to use for for iot device solutions
Drive development of valuable iot devices

High Cost-effective
Reduce the cost and get high performance,speed your new products development

Small Size
Overcoming keep-out Zones in antenna design
Great choices for small IoT devices

Strong Compatibility
Strong product compatibility, standard workmanship , great performance and the durability

MinewSemi

MULTI-FREQUENCY & CONSTELLATION
Support L1+L5 Dual-band GNSS Receiver 〔GPS, BDS, GLONASS, GALILEO and QZSS

MULTIPLE GNSS MODULE OPTIONS AVAILABLE
G_Mouse, With IMU, Simultaneous multi-constellation positioning

ULTRA-LOW POWER
Support RTK
Current(RX) only 15mA

MULTI-TECH SUPPORT
Including: AGPS (EASY™) track prediction, AlwaysLocate™ , integrated logging LOCUS™, long baseline RTK solving, etc.

INDUSTRIAL-GRADE STANDARD
Working & storage temp:-40℃-+85℃

HIGH-SENSITIVITY
Low-Noise Amplifiers maximize receiver sensitivity

STRONG ANTI-INTERFERENCE & HIGH STABILITY
Superior performance

PRECISE POSITIONING
Multi-band GNSS module
Centimeter-level positioning accuracy

RTK
RTK + INS ALGORITHM
Achieves centimeter level accuracy position

Bluetooth® LE Module

Cutting edge Nordic Semiconductor nRF52 series SoCs enables MinewSemi Bluetooth Low Energy module collections with multiple protocol capabilities, high flexibility and ultra low power. Global certifications and preloaded MinewSemi Uart firmware reduce customers' BOM cost and time-to-market for multi IoT applications. With multi Nordic nRF52805/nRF52810/nRF52832/nRF52833/nRF52840 SoCs, higher performance PCB/Ceramic and u.FL antenna type, integrated DC/DC and 32.768Khz crystal oscillator, MinewSemi module will meet your requirements in different IoT industries.
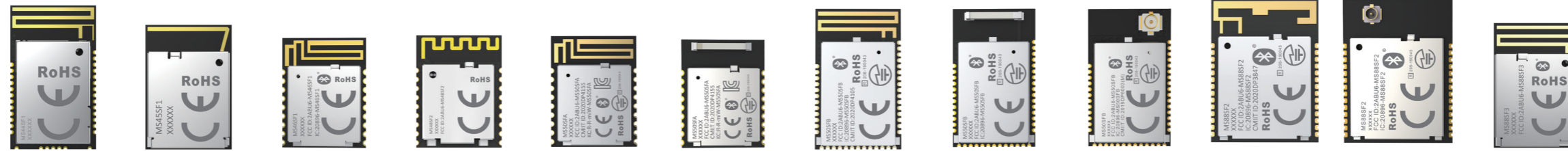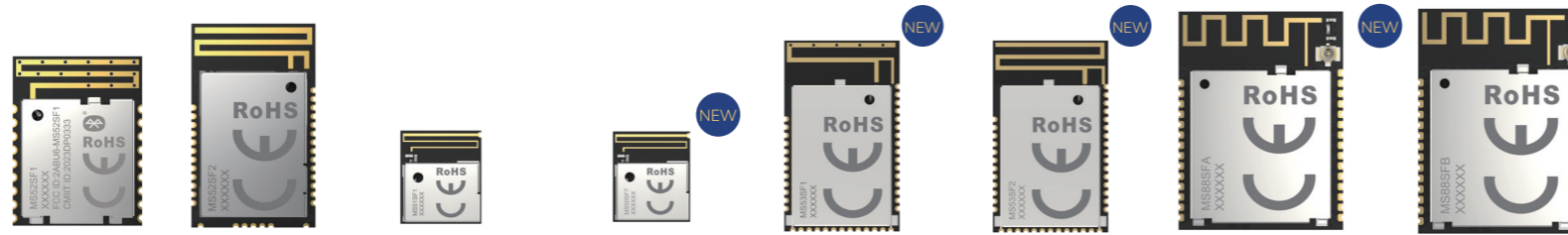
| Model Series	MS44SF1 Series	MS45SF1 Series	MS46SF1 Series	MS48SF2 Series	MS50SFA Series		MS50SFB Series			MS88SF2 Series		MS88SF3 Series
Model No.	MS44SF11	MS45SF11	MS46SF11	MS48SF21	MS50SFA1	MS50SFA2	MS50SFB1	MS50SFB2	MS50SFB3	MS88SF21	MS88SF23	MS88SF31
Antenna	PCB	PCB	PCB	PCB	PCB	Ceramic	PCB	Ceramic	IPEX(U.FL)	PCB	IPEX(U.FL)	PCB
SoCset	nRF52820	nRF5340	nRF52805	m1805	nRF52832/810	nRF52832/810	nRF52832/810	nRF52832/810	nRF52832/811/810	nRF52840/833	nRF52840/833	nRF52840/833
Max Range	600M	300M	80M	80M	80M	80M	80M	80M	80M	300M	300M	300M
Dimension(mm)	20*12*2	18.5*12.5*2	15.8*12*2	15.8*12*2	15.8*12*2	15.8*12*2	20*12*2	20*12*2	20*12*2	23.2*17.4*2	23.2*17.4*2	18.5*12.5*2
Flash	256 KB	1 MB & 256 KB	192KB	512KB	512/192KB	512/192KB	512/192KB	512/192KB	512/192/192KB	1MB/512KB	1MB/512KB	1MB/512KB
RAM	32KB	512KB & 64KB	24KB	138KB	64/24KB	64/24KB	64/24KB	64/24KB	64/24/24KB	256KB/128KB	256KB/128KB	256KB/128KB
Sensitivity(RX)	-103/-95dBm	-104/-98dBm	-95dBm	-97dBm	-96dBm	-96dBm	-96dBm	-96dBm	-96/-96/-104~-97dBm	-103/-95dBm -103/-96dBm	-103/-95dBm -103/-96dBm	-103/-95dBm -103/-96dBm
Transmission Power	-40-+8dBm	-40-+3dBm	-40~+4dBm	-40~+5dBm	-40~+4dBm	-40~+4dBm	-40~+4dBm	-40~+4dBm	-40~+4dBm	-40~+8dBm	-40~+8dBm	-40~+8dBm
Current(TX)	0dBm-4.9mA	0dBm-3.2mA	0dBm-4.6mA	0dBm-8mA	0dBm-5.3mA /4.6mA	0dBm-5.3mA /4.6mA	0dBm-5.3mA /4.6mA	0dBm-5.3mA /4.6mA	0dBm-5.3mA /4.6mA/4.6mA	0dBm-4.9mA /4.8mA	0dBm-4.9mA /4.8mA	0dBm-4.9mA /4.8mA
Current(RX)	4.7mA	2.6mA	4.6mA	8mA	5.4mA/4.6mA	5.4/4.6mA	5.4/4.6mA	5.4/4.6mA	5.4/4.6/4.6mA	4.6mA	4.6mA	4.6mA
GPIO	16	48	6	12	13	13	32	32	32	20	20	48/42
Certification	BQB	FCC,CE	REACH,FCC,CE, IC,RoHS,BQB	FCC,CE,SRRC	BQB,FCC,CE,KC, RoHS&Reach,SRRC TELEC,EN 50498	BQB,FCC,CE,SRRC, RoHS&Reach,TELEC, KC,EN 50498	BQB,FCC,CE,IC,KC, TELEC,WPC,RCM, RoHS&Reach,SRRC WEEE,EN 50498	BQB,FCC,CE,IC,SRRC TELEC,WPC,RCM,KC, RoHS&Reach,UKCA WEEE,EN 50498	BQB,FCC,CE,IC,KC TELEC,WPC,RCM, RoHS&Reach,SRRC EN 50498,WEEE	BQB,FCC,CE,IC, TELEC,WPC,RCM, RoHS&Reach SRRC	BQB,FCC,CE,IC, TELEC,WPC,RCM, RoHS&Reach	CE,FCC,BQB, ROHS,REACH
Firmware		1. For module based on nRF52811/833/840, it is null module without any firmware preloaded in default. 2. For module based on nRF52805/810/832, it has the UART-Slave/Master firmware preloaded in default. We can provide UART command list if needed.										

Bluetooth® LE Module

Cutting edge Nordic Semiconductor nRF52 series SoCs enables MinewSemi Bluetooth Low Energy module collections with multiple protocol capabilities, high flexibility and ultra low power. Global certifications and preloaded MinewSemi Uart firmware reduce customers' BOM cost and time-to-market for multi IoT applications. With multi Nordic nRF52805/nRF52810/nRF52832/nRF52833/nRF52840 SoCs, higher performance PCB/Ceramic and u.FL antenna type, integrated DC/DC and 32.768Khz crystal oscillator, MinewSemi module will meet your requirements in different IoT industries.

Model Series	MS52SF1 Series	MS52SF2 Series	MS51SF1 Series	MS50SF7 Series	MS53SF1 Series	MS53SF2 Series	MS88SFA Series	MS88SFB Series
Model No.	MS52SF11	MS52SF21	MS51SF11	MS50SF71	MS53SF11	MS53SF21	MS88SFA8	MS88SFB8
Antenna	PCB	PCB	PCB	PCB	PCB	PCB	PCB/IPEX	PCB/IPEX
SoCset	Telink TLSR8208	Telink TLSR8208	Nordic nRF52833	Nordic nRF52832	BlueNRG-355M	BlueNRG-332AC	Nordic nRF52833/840	Nordic nRF52833
Max Range	80M	80M	80M	80M	300M	500M	600M	600M
Dimension(mm)	15.8*12*2	20*12*2	9.8*8.4*2	9.8*8.4*2	20*12*2	20*12*2	23.2*17.4*2	23.2*17.4*2
Flash	128KB	128KB	512KB	512KB	256KB	192KB	1M/512KB	512KB
RAM	16KB	16KB	128KB	64KB	64KB	24KB	256KB/128KB	128KB
Sensitivity(RX)	-97dBm	-97dBm	-96dBm	-96dBm	-97dBm	-97dBm	-96dBm	-96dBm
Transmission Power	-45~+10dBm	-45~+10dBm	-40~+8dBm	-40~+4dBm	--20~+8dBm	-20~+8dBm	~+20dBm	~+20dBm
Current(TX)	0dBm-9.5mA	0dBm-9.5mA	0dBm-4.9mA	0dBm-5.3mA	0dBm-4.3mA	0dBm-4.3mA	Peak:150mA	Peak:200mA
Current(RX)	9.1mA	9.1mA	4.6mA	5.4mA	3.4mA	3.4mA	/	/
GPIO	14	15	20	24	25	19	29	29
Certification	SRRC,BQB,FCC,CE REACH,ROHS	/	/	/	/	/	CE,FCC,REACH, ROHS	REACH,ROHS
Firmware	1. For module based on nRF52811/833/840, it is null module without any firmware preloaded in default. 2. For module based on nRF52805/810/832, it has the UART-Slave/Master firmware preloaded in default. We can provide UART command list if needed.							

New Arrival

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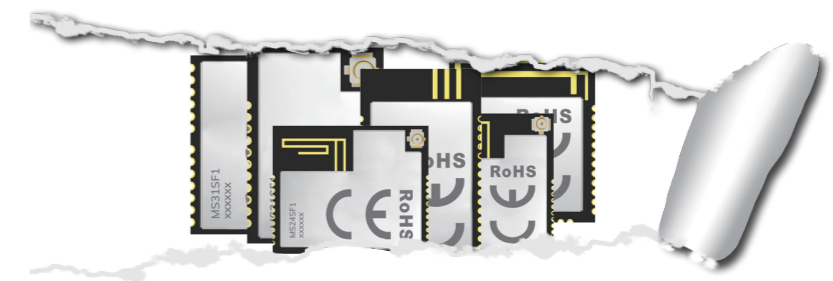
**More Connectivity Modules Are Coming soon...**

GNSS Module

The GNSS module series integrate the latest generation of GNSS technology, delivering highly accurate positions with minimal power consumption. Combining high positioning accuracy and indoor sensitivity with powerful processing capabilities, our GNSS modules simultaneously support multiple global navigation systems including the U.S. GPS, European Galileo, Russian GLONASS, as well BeiDou, QZSS and NavIC. It's cost-competitive, and allows for easy integration and migration from existing product designs including trackers, telematics, portable, and tablets as well as marine and sports accessories.

Module	MS31SN1	MS32SN1	MS32SN4	MS33SN1	MS33SN2	MS34SN2	MS34SN3	MS34SNA	MS35SN1	MS35SN2	MS36SN4
Satellite System	GPS BDS GLONASS QZSS	GPS QZSS	GPS QZSS	GPS BDS GLONASS GALILEO QZSS	GPS BDS GLONASS GALILEO QZSS	GPS L1+L5 BDS B1I+B2a GLONASS G1 GALILEO E1+E5 QZSS L1+L5 IRNSS L5*	GPS L1+L5 BDS B1I+B2a GLONASS G1 GALILEO E1+E5 QZSS L1+L5 IRNSS L5*	GPS L1+L5 BDS B1I+B2a GLONASS G1 GALILEO E1+E5 QZSS L1+L5 IRNSS L5*	GPS L1+L5 BDS B1I+B2a GLONASS G1 GALILEO E1+E5 QZSS L1+L5 IRNSS L5*	GPS L1+L5 BDS B1I+B2a GLONASS G1 GALILEO E1+E5 QZSS L1+L5 IRNSS L5*	GPS: L1 C/A, L5 BDS: B1I, B2a GLONASS: L1 GALILEO: E1, E5a QZSS: L1 C/A, L5 SBAS: WAAS,EGNOS,MSAS,GAGAN,SDCM NAVIC*: L5 (optional)
Ranging Accuracy	≤2.5m (1 σ)	≤2.5m (1 σ)	≤2.5m (1 σ)	≤2.5m (1 σ)	≤2.5m (1 σ)	≤1.2m (1 σ) RTK: ≤1cm (1 σ)	≤1.2m (1 σ) RTK: ≤1cm (1 σ)	≤1.2m (1 σ) RTK: ≤8mm(1 σ) INS: 1%*D(1 σ)	≤1.2m (1 σ)	≤1.2m (1 σ)	≤1.2m (1 σ) RTK: ≤1cm (1 σ)
Dimension(mm)	10.1*9.7*2.4	10.1*9.7*2.4	18.2*18.2*6.8 mm	10.1*9.7*2.4	16.0*12.2*2.4	16.0*12.2*2.4	17*22*2.4	17*22*2.4	10.1*9.7*2.4	16.0*12.2*2.4	16*21*2.6
Supply Voltage	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V
Operating current	30mA Avg	20mA Avg	20mA Avg	15mA Avg	15mA Avg	15mA Avg	15mA Avg	160mA Avg	15mA Avg	15mA Avg	/
Pin Package	LCC-18pin	LCC-18pin	LCC-18pin	LCC-18pin	LCC-24pin	LCC-24pin	LGA-56pin	LGA-56pin	LCC-18pin	LCC-24pin	LCC-48pin
Output Mode	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)	UART(TTL)
Channel	Acq: 64 Track: 32	Acq: 66 Track: 22	Acq: 66 Track: 22	Acq: 127 Track: 47	Acq: 127 Track: 47	Acq: 217 Track: 135	Acq: 217 Track: 135	Acq: 217 Track: 135	Acq: 217 Track: 135	Acq: 217 Track: 135	/
Tracking Sensitivity	-162dBm	-165dBm	-165dBm	-165dBm	-165dBm	-165dBm	-165dBm	-165dBm	-165dBm	-165dBm	-165dBm
Algorithm	PVT	PVT	PVT	PVT	PVT	RTK algorithm	RTK algorithm	High-dynamic RTK + INS algorithm(Optional)	Support Original Observation Data Output	Support Original Observation Data Output	RTK algorithm
Feature	High cost-effective Multi-constellation Low-power	MTK platform High sensitivity Ultra-low Power	G_Mouse Module (with Ceramic Antenna) MTK platform High sensitivity Ultra-low Power	Single-band Multi-constellation MTK platform High sensitivity Ultra-low power	Single-band Multi-constellation MTK platform High sensitivity Ultra-low power	Simultaneous multi -constellation positioning MTK platform High sensitivity All-constellation GNSS RTK position 1-5Hz RTK output	Simultaneous multi -constellation positioning MTK platform High sensitivity All-constellation GNSS RTK position 1-5Hz RTK output	Simultaneous multi -constellation positioning MTK platform High sensitivity All-constellation GNSS RTK position Ultra-long baseline 40km+ 1-10Hz RTK output Support combined navigation function	Simultaneous multi -constellation positioning MTK platform High sensitivity All-constellation GNSS	Simultaneous multi -constellation positioning MTK platform High sensitivity All-constellation GNSS	Simultaneous multi -constellation positioning MTK platform High sensitivity All-constellation GNSS RTK position 1-5Hz RTK output

LoRa Module

The Module is select Semtech LoRa @ to SX1262, are ideal for long range wireless applications. It's designed for long battery life with just 4.7 mA of active receive current consumption.The SX1262 can transmit up to +22dBm with highly efficient integrated power amplifiers. It's ultra low power and lonfg range, compact, and easy to use.
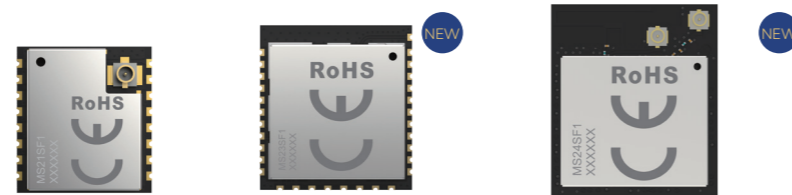
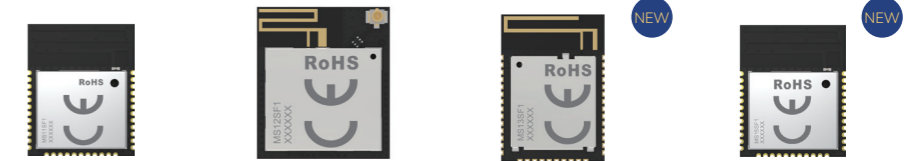| Model Series	MS21SF1 Series	MS23SF1 Series	MS24SF1 Series
Model No.	MS21SF13	MS23SF14	MS24SF18
Antenna	IPEX	/	PCB+IPEX
ChipSet	SX1262/LLCC68	STM32WLE5CCU6	nRF52840+SX1262
Dimension(mm)	16.4x15x3mm	20.72*19.13*3.2mm	27*23.5*2.8mm
Transmission Range	5KM	5KM	5KM
Transmission Power	+22dBm	+20.5dBm	+22dBm
Reception Sensitivity	-146dBm	-146dBm	-146dBm
Emission Current	8.2mA	120mA	122.8mA
Receiving Current	4.7mA	4.2mA	9.3mA
GPIO	5	24	35
Characteristic	SPI Interface Ultra-low Power Ultra-long Range	RAM64KB Flash 256KB LoRaWAN protocol 1.0.3 Multi-interface	RAM 512KB Flash 1M LoRaWAN protocol 1.0.3 Multi-IO interface

Application:

Smart agriculture | Security system | Street lighting

Building automation | Smart meter meter | Medical electronics

Simple Connection

WiFi Module

The module are Wi-Fi 4/6 and Bluetooth® 5 module,and built around ESP32-C3/nRF7002 SoC, which can be widely used in smart home, consumer electronics, wearable devices and other fields.
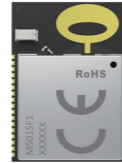
Model Series	MS11SF1 Series	MS12SF1 Series	MS13SF1 Series	MS15SF1 Series
Model No.	MS11SF11	MS12SF18	MS13SF11	MS15SF11
Antenna	PCB	PCB+IPEX	PCB	PCB
SoCset	ESP32-C3FN4	nRF7002+nRF5340	ESP32-D0WD-V3	ESP32-C6FH4
Dimension(mm)	16.6*13.2*2.2	27*23.5*2.8	25.5*18*2.2	16.6*13.2*2.2
Wi-Fi Version	Wi-Fi 4 (802.11 b/g/n)	Wi-Fi 6 (802.11 ax)	Wi-Fi 4 (802.11 b/g/n)	Wi-Fi 6 (802.11 b/g/n)
Bluetooth Version	BLE 5.0	BLE 5.3	BLE 4.2	BLE 5.3
SPI Flash	4MB	1MB+256KB	8M+448KB	320 KB+4MB
RAM	400KB	512kB+64KB	520 KB+16KB	512KB+16KB
Emission Current	278mA	2.4G-191mA 5G-260mA	239mA	382mA
Receive Current	87mA	2.4G-56mA 5G-58mA	112mA	82mA
Sleep Current	6uA	11.3uA	5uA	7uA
GPIO	22	29	21	22
Characteristic	Full IO port, BLE+Wi-Fi, Support AT, ESP-IDF development	Wi-Fi 6 +BLE ndependent dual-antenna low power	SDIO high-speed communication large flash storage AT command versatile SDK	SDIO high-speed communication WiFi 6 + BLE 5.3 AT command Multi-protocol support

Valuable Connection

UWB Module

The module is an ultra-wideband transceiver & Ble low-energy 5.2 integrated with the latest door position tech & the Nordic semiconductor, to meet the demands of ITIS, logistics, smart city, and public division. etc.
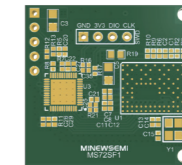
Model Series	MS01SF1 Series
Model No.	MS01SF17
Antenna	PCB/Ceramic
SoCset	UWB:DW3120 BLE:nRF52833
Dimension(mm)	26.12x19.13x3.2mm
Ranging Accuracy	10-30cm
Flash	512KB
RAM	128KB
Transmission Power	-40-+8dBm
UWB Emission Current UWB Receives Current	150mA 55mA
BLE emission Current	0dBm-4.6mA
BLE receiving Current	4.8mA
GPIO	BLE : 23 + UWB : 4
Characteristic	UWB+BLE, dual channel support, Support the FIRA

Application:

Smart factory | Electric power plant | Warehousing and logistics

Public prosecutor | Smart pension | Ani -lost

Millimeter Wave Radar Module

The millimeter wave RADAR (mmWave RADAR) is an extremely valuable sensing technology ideal for detection of objects and providing information on range, velocity and angle of these objects. MinewSem's mmWave radar module uses a contactless system which operates in the spectrum between 60GHz and 64GHz.
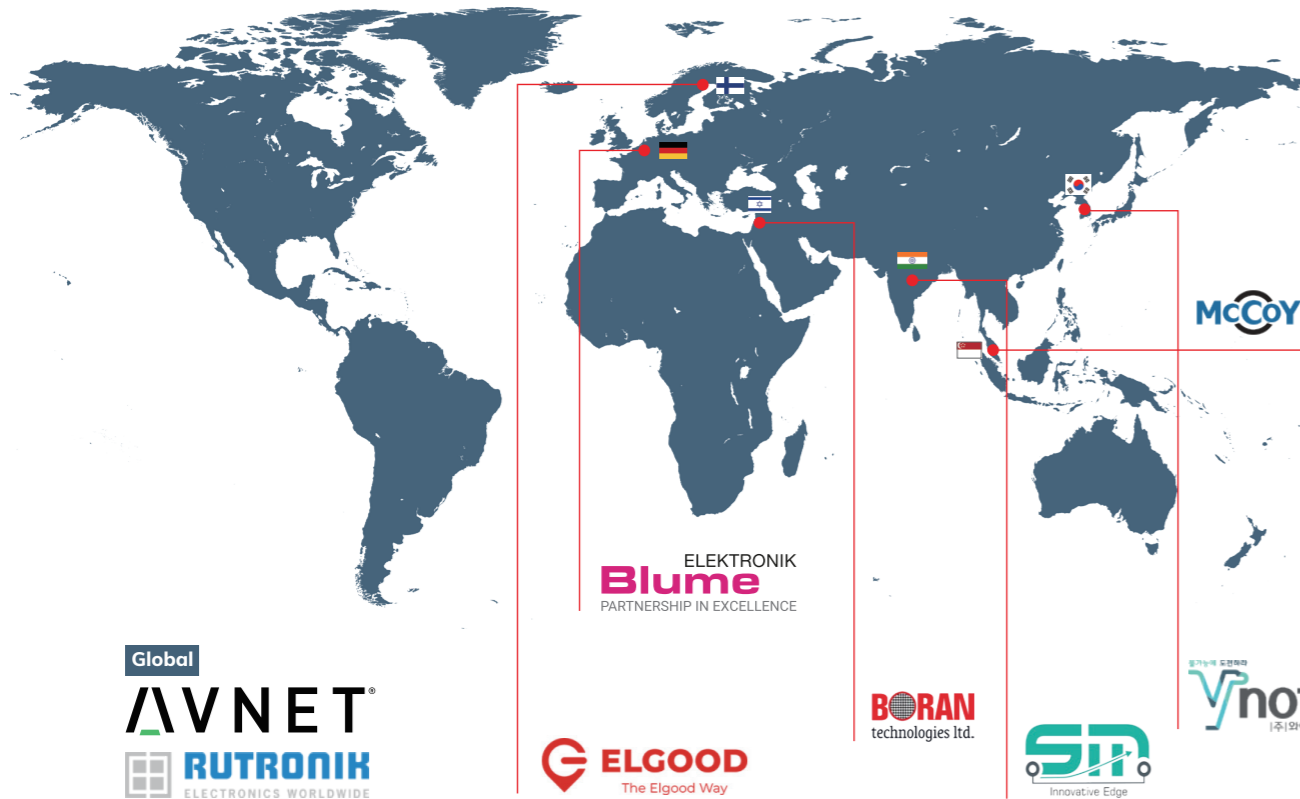
Model Series	MS72SF1 Series
Model No.	MS72SF11
Dimension(mm)	29.36*28*2.4mm
Installation Method	"top-mounted"
Peak Power Consumption	1.7w
Detection Distance	0.5~8m
Tracking Number	≤10
Operation Frequency	60-64GHz
Processing Cycle	≤30ms
Average Power Consumption	0.3w

Application:

Smart Home | Security Monitoring | Gesture Recognition

Healthcare | Human Presence Detection | People Counting & Tracking

Worldwide Presence

Global

AVNET

RUTRONIK
ELECTRONICS WORLDWIDE

ELEKTRONIK
Blume
PARTNERSHIP IN EXCELLENCE

ELGOOD
The Elgood Way

BORAN
technologies ltd.

MCCoY

Vnot

SM
Innovative Edge

Technology Partners

NORDIC
SEMICONDUCTOR

SEMTECH

ST
life.augmented

QORVO

ESPRESSIF

MEDIATEK

Telink

WIREPAS

Simple Connection

Version update record

Number	Update time	Update content
V 1.1	2023.06.26	Added Bluetooth module MS50SF7 Added LoRa module MS21SF1_LLCC68 Added LoRa module MS24SF1 Update the latest product certification
V 1.2	2023.09.06	Added Bluetooth module MS53SF2 Added WiFi module MS13SF1 Added WiFi module MS15SF1 Added GNSS module MS36SN4

COPYRIGHT STATEMENT

INFORMATION

The marking on the product shield will be updated with the change of certification. It will only be added on the basis of existing information. For the actual marking content, please refer to the final product you received
In addition, the change of marking content will not affect the performance of product, and there will be no further notification from MinewSemi.
If you have customization requirments, please contact our sales for details.