Introducing Sony SPRESENSE™

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What is SPRESENSE™?

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Low power Multi Processor

SPRESENSE has a brand new low power multi-core processor that has 6 ARM® Cortex® M4F being the capability of max frequency at 156MHz and driven at 0.7V

High Resolution Audio Output

Not only has the capability of playing High-Resolution Audio of 192kHz/24bit but also has a built-in D-class amplifier enabling BLT-stereo output.

Multiple Micro-phone inputs

You can enjoy 4 mic inputs with an analog microphone or up to 8 mic inputs with a digital microphone. All of the channels can record at 192kHz/24bit simultaneously.

Camera interface

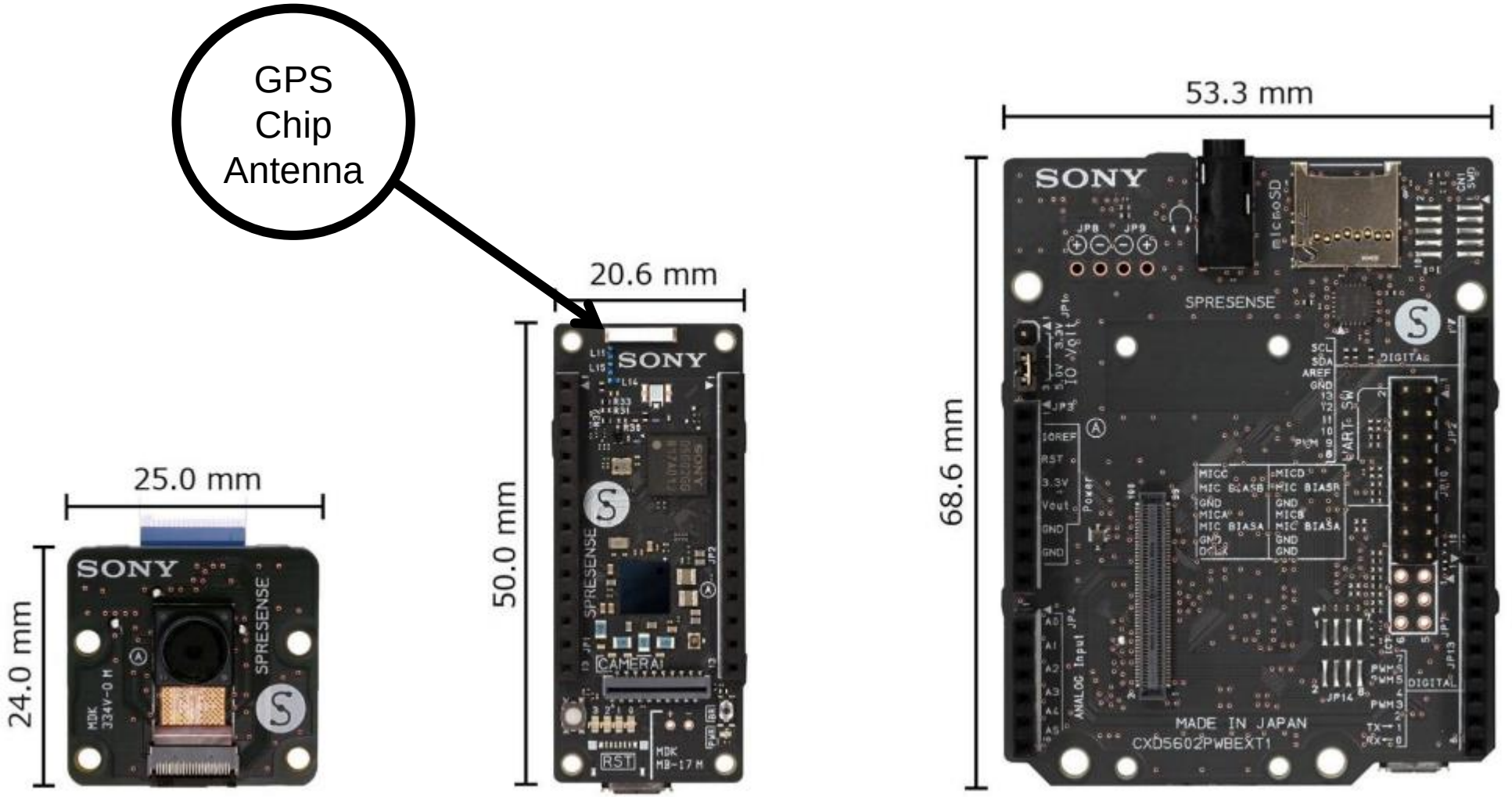
Support Sony’s 5M pixels CMOS (Exmore) sensor with dedicated CMOS 8 parallel interface.

Built-in GNSS (GPS)

Built-in GNSS function supporting GPS/GLONASS/QZSS allows you to get a precise position all over the world

Artificial Intelligence

SPRESENSE can accommodate AI functionality made by Sony Neural Network Console

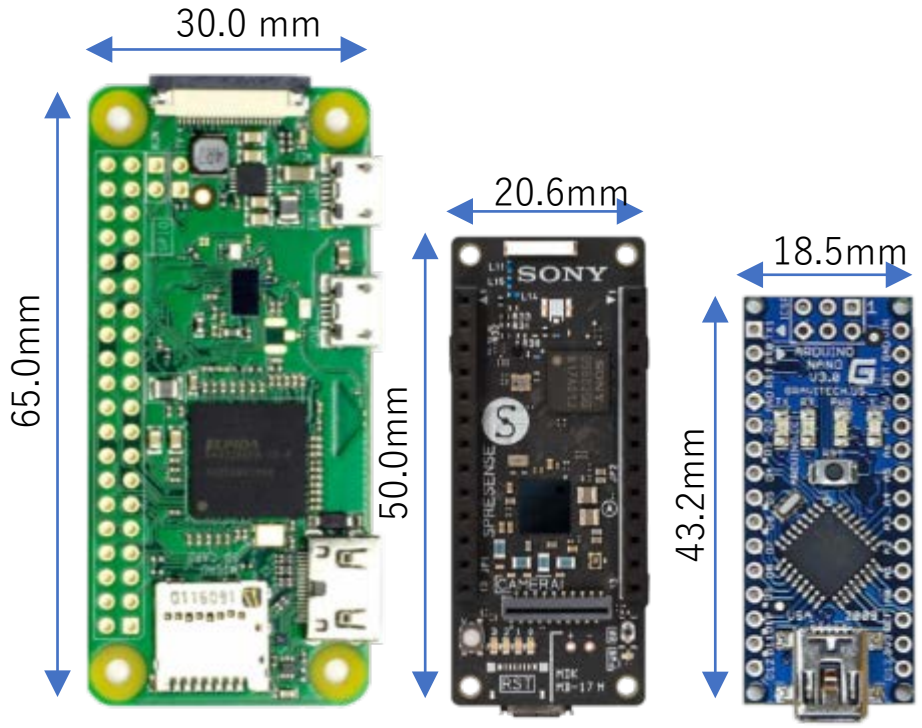


CAMERA BOARD

MAIN BOARD

EXTENSION BOARD

SPRESENSE Performance Comparison



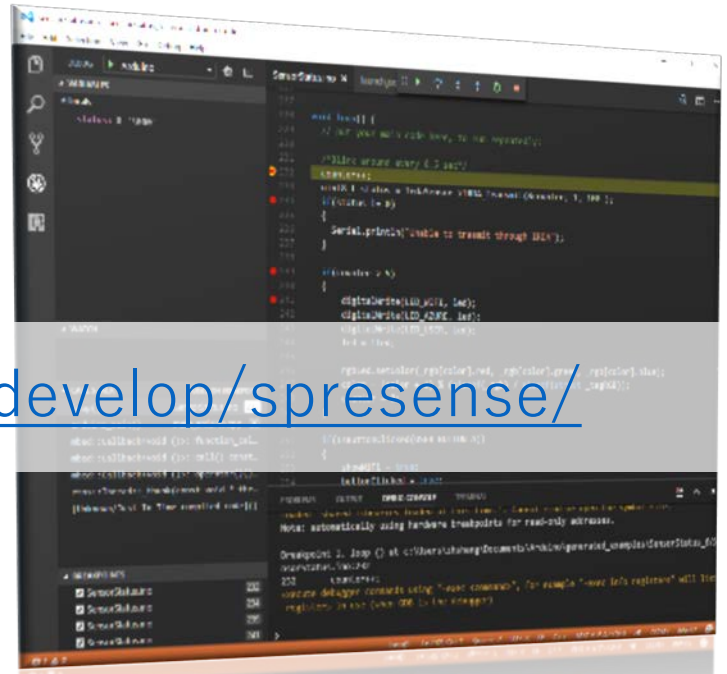
	Raspberry Pi Zero WH	SPRESENSE™ Main board	Arduino Nano 3.0
Power Consumption *1	500mW*2	30mW	100mW
Calculation Power	1250DMIPS (ARM11 Single Core)	1170DMIPS (Cortex M4F Six-Cores)	20DMIPS (ATmega328p)
Board size	65.0mm 30.0mm	50.0mm 20.6mm	43.2mm 18.5mm
Others	Wi-Fi/Bluetooth Display output Audio output Camera interface	GNSS receiver Hi Reso. audio input and output Camera interface	

*1 No load　*2 Wi-Fi/Bluetooth are OFF

SPRESENSE Development Environment

ARDUINO IDE

VSCode



https://developer.sony.com/ja/develop/spresense/

SCRATCH 3rd party

Already available
https://www.neusoft.co.jp

python™ 3rd party

Already available
https://www.zerynth.com/zerynth-studio/

Java MICROEJ 3rd party

Already available
https://www.microej.com/product/studio/

SPRESENSE Peripheral boards

Wi-Fi Add-on

BLE Add-on

Sigfox Add-on

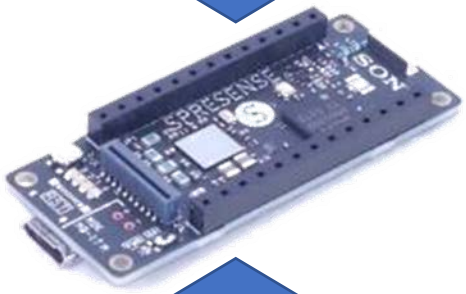
LoRa-BLE Add-on

Sensor Add-on

Sensor Add-on

Sensor Add-on

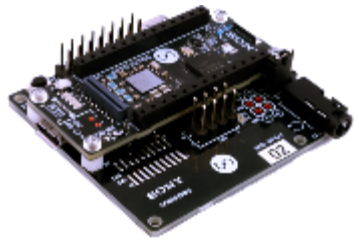
Flexible and Expandable



Sandwich Concept Design

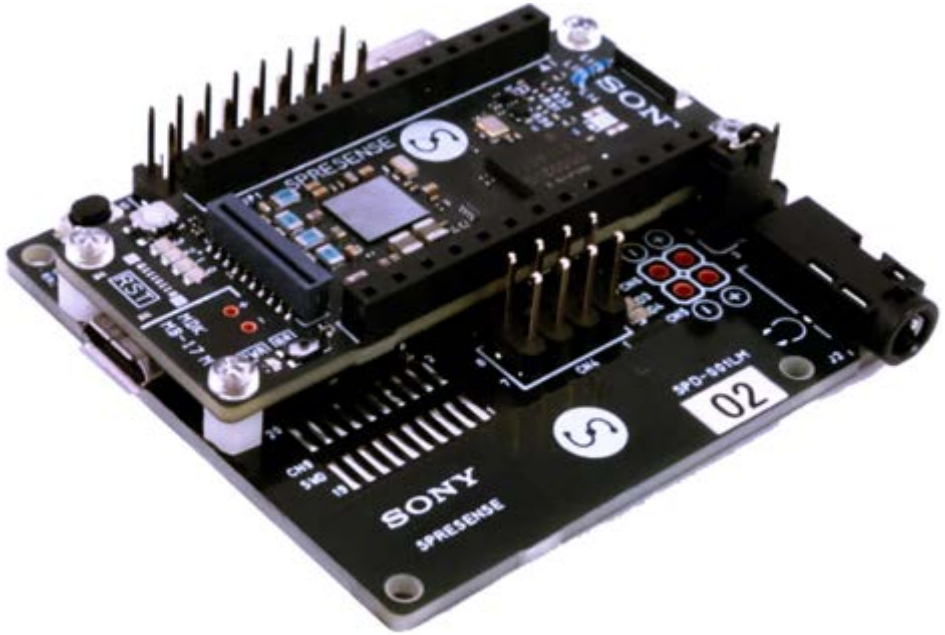
Portable Player Extension Board

Extension Board from Sony



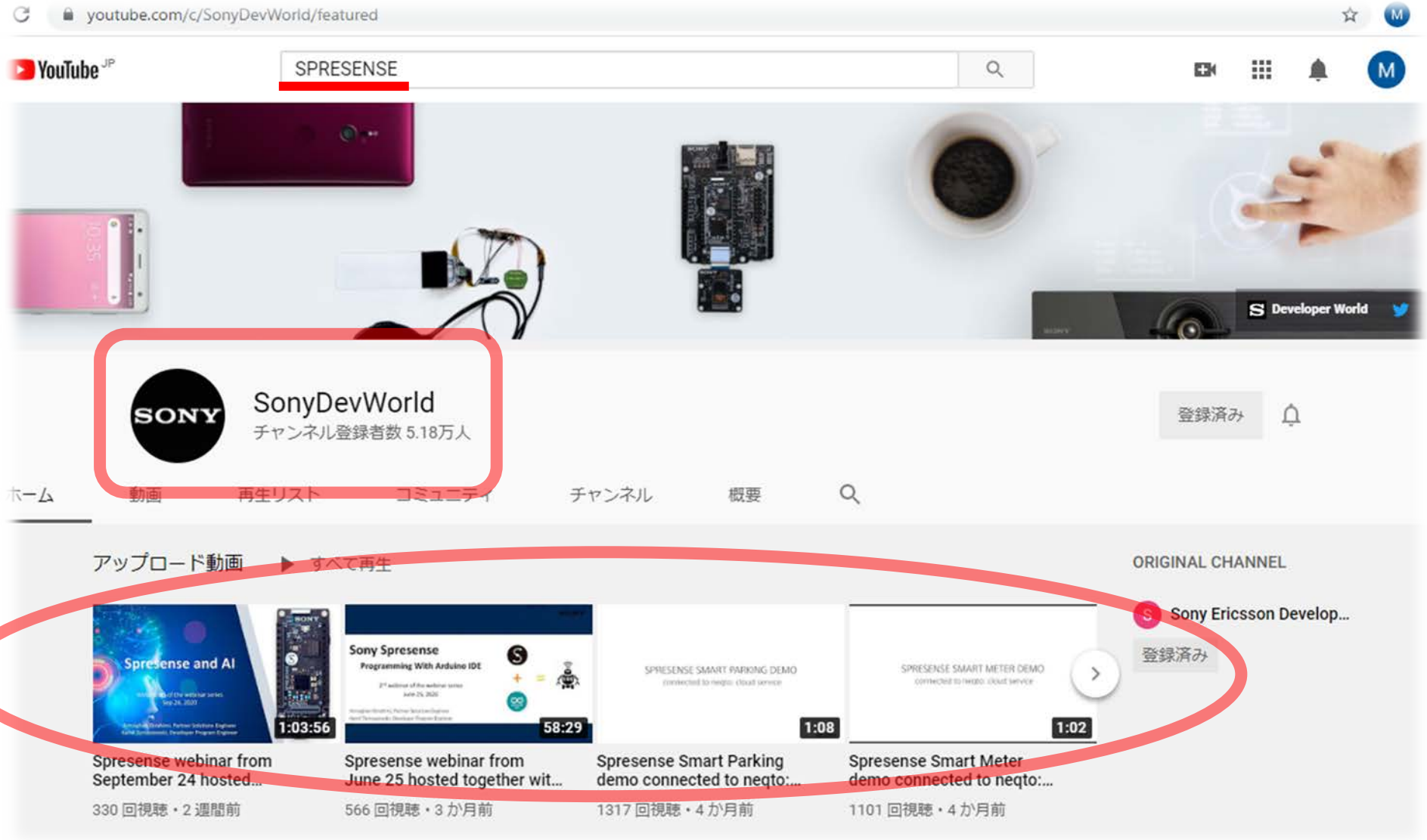
LTE(Cat-M) Extension Board from Sony (will be released in the early next year)

SPRESENSE LTE(Cat-M) Extension Board



SPRESENSE LTE(Cat-M) Extension Board		
Size	50mmx45mmx1.6mm（TBD）	
Module name	LBAD0XX1SC（ALT1250）	
Communication System	LTE Cat-M1	
Band	Band 1, Band 3, Band 8, Band 18, Band 19, Band 41	
Audio input / output Digital input / output	Analog MIC x 2 or Digital MIC x 4 HeadPhone Stereo (Line-out)	
	SPI x 1（Master） PWM x 4 GPIO x 4	3.3V or 5.0V (selectable)
Analog input	Analog Input x 2 (5.0V range)	
External memory interface	SD Card Interface	
Antenna	On board	
SIM	SIM card	

Please check webinar contents on the web



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