

APsystems APSC3 The Global Leader



APsystems APSC3 The Global Leader Instructions

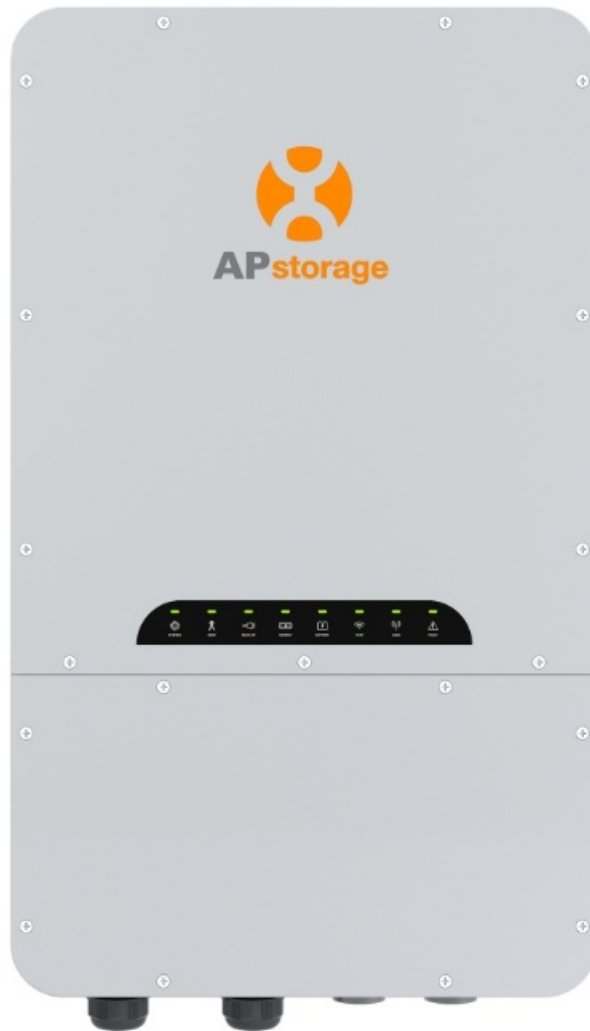
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APsystems APSC3 The Global Leader



Product Information

Specifications:

- Model: Keep out Zone
- Input Voltage: 3.3V
- Pin Layout: See top view diagram for details
- Compliance: FCC Part 15
- RF Exposure Limits: 20cm minimum distance between radiator and body

Product Usage Instructions

Pin Layout:

The top view diagram shows the pin layout of the Keepout Zone device. Ensure proper connection according to the pin configuration.

Compliance:

Any changes or modifications not approved by the responsible party could void the equipment's operation authority. Ensure compliance with FCC Part 15 regulations.

RF Exposure:

For safety, maintain a minimum distance of 20cm between the device's radiator and your body while installing and operating the equipment.

OEM Guidance:

Follow OEM guidance for additional information on using the Keepout Zone device effectively and safely.

Frequently Asked Questions (FAQ):

- Q: What should I do if I encounter harmful interference while using the device?

A: If you experience harmful interference, ensure that the device is properly connected and follows FCC guidelines for interference resolution.

- Q: Can I modify the device for different voltage inputs?

A: Any changes or modifications to the voltage input should be approved by the responsible party to maintain compliance with regulations and ensure safe operation.

- Q: How can I ensure proper installation to comply with RF exposure limits?

A: To meet RF exposure limits, always maintain a minimum distance of 20cm between the device's radiator and your body during installation and operation.

Features**CPU and On-Chip Memory**

- ESP32-C3 embedded, 32-bit RISC-V single-core processor, up to 160 MHz
- 384 KB ROM
- 400 KB SRAM (16 KB for cache)
- 8 KB SRAM in RTC

Peripherals

GPIO, SPI, UART, I2C, I2S, remote control peripheral, LED PWM controller, general OMA controller, TWAI® controller (compatible with ISO 11898-1, i.e. CAN Specification 2.0), USB Serial/JTAG controller, temperature sensor, SAR ADC, general-purpose timers, watchdog timers

Operating Conditions

- Operating voltage/Power supply: 3.0 ~3.6 V
- Operating ambient temperature:
 - 105 °C version module: -40 ~ 105 °C

Applications

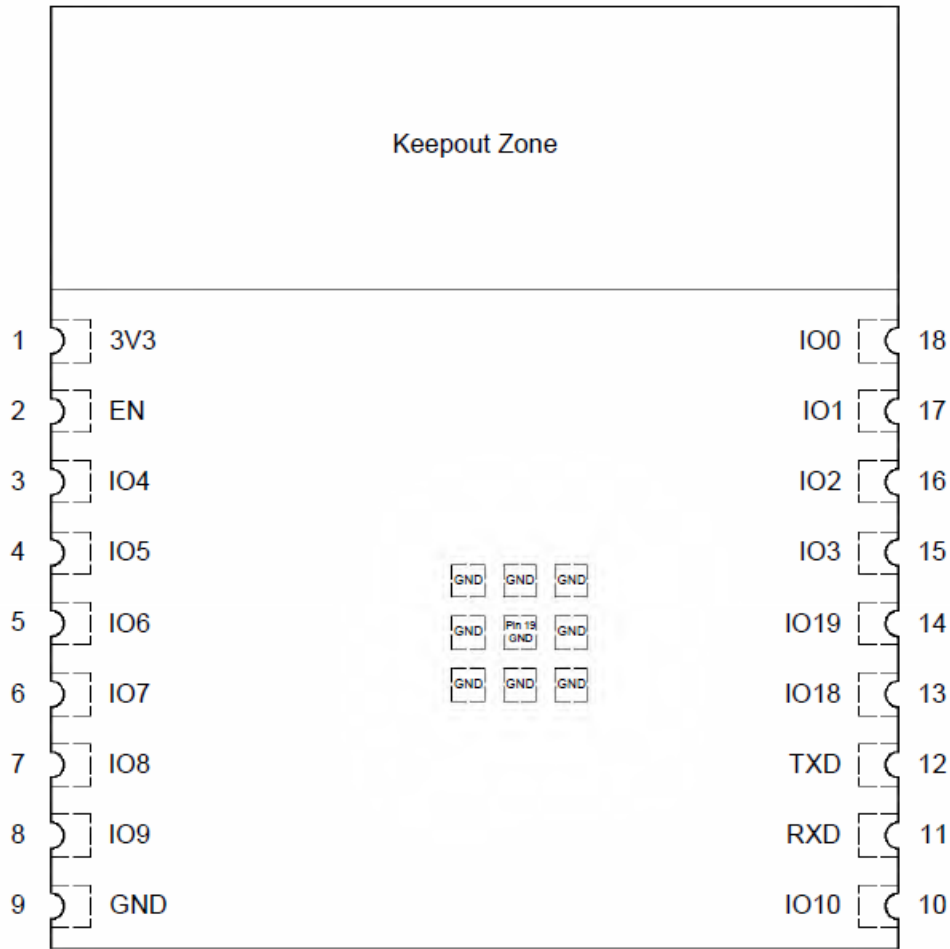
- Smart Home
 - Light control
 - Smart button
 - Smart plug
 - Indoor positioning
- Industrial Automation
 - Industrial robot
 - Mesh network

- Human-machine interface (HMI)
- Industrial field bus
- Wi-Fi speaker
- Logger toys and proximity-sensing toys
- Smart Agriculture
 - Smart greenhouse
 - Smart irrigation
 - Agriculture robot
- Retail and Catering
 - POS machines
 - Service robot

Pin Description

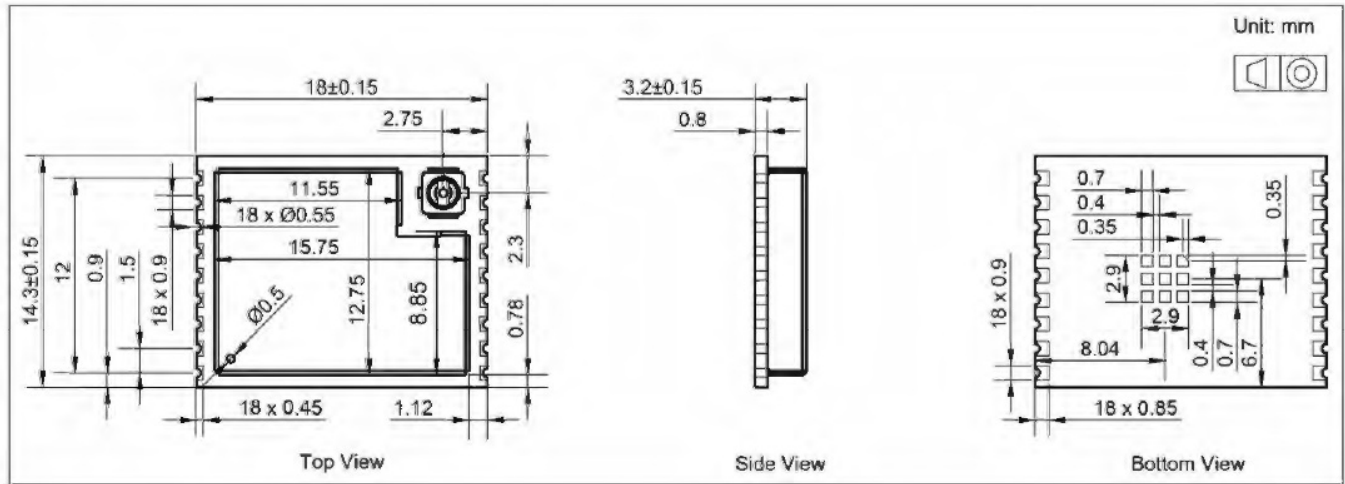
Name	No.		Function
3V3	1	p	Power supply
			High: on, enables the chip.
EN	2	l	Low: off, the chip powers off.
			Note: Do not leave the EN pin floating.
	3	I/O/T	GPIO4, ADC1_CH4, FSPiHD, MTMS
105	4	I/O/T	GPIO5, ADC2_CH0, FSPiWP, MTDI
106	5		GPIO6, FSPiCLK, MTCK

Name	No.	Type1	Function
107	6	1/O/T	GPIO7, FSPID, MTDO
108	7	1/O/T	GPIO8
109	8	1/O/T	GPIO9
GND	9,19	p	Ground
1010	10	I/O/T	GPIO10, FSPICS0
RXD	11	1/O/T	GPIO20, U0RXD
TXD	12	1/O/T	GPIO21, U0TXD
1018	13	I/O/T	GPIO18, USB_D-
1019	14	I/O/T	GPIO19, USB_D+
103	15	I/O/T	GPIO3, ADC1_CH3
102	16	1/O/T	GPIO2, ADC1_CH2, FSPIQ
101	17	1/O/T	GPIO1, ADC1_CH1, XTAL_32K_N
100	18	I/O/T	GPIO0, ADC1_CH0, XTAL_32K_P



Pin Layout (Top View)

PCB land Pattern



Caution

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

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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, under part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used by the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body.

FCC Label Instructions

If using a permanently affixed label, the modular transmitter must be labelled with its own FCC identification number, and, if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains FCC ID: 2AFGR-APSC3”.

Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explains this requirement.

OEM Guidance

- Applicable FCC rules

This device complies with part 15.247 of the FCC Rules.

- The specific operational use conditions

This module can be used in IoT devices. The input voltage to the module is nominally 3.3 V DC. The operational ambient temperature of the module is -40 °C ~ 85 °C. An external antenna is allowed, such as a dipole antenna.

- Limited module procedures

N/A

- Trace antenna designs

N/A

- RF exposure considerations

The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body. If the equipment is built into a host as a portable usage, an additional RF exposure evaluation may be required as specified by 2.1093.

- Antennas

Antenna type: Dipole antenna; Peak antenna gain: 2.7 dBi

- Label and compliance information

An exterior label on OEM's end product can use wording such as the following: "Contains Transmitter Module FCC ID: 2AFGR-APSC3" or "Contains FCC ID: 2AFGR-APSC3"

- Information on test modes and additional testing requirements

The modular transmitter has been fully tested by the module grantee on the required number of channels, modulation types, and modes, it should not be necessary for the host installer to re-test all the available transmitter modes or settings. It is recommended that the host product manufacturer, installing the modular transmitter, performs some investigative measurements to confirm that the resulting composite system does not exceed the spurious emissions limits or band edge limits (e.g., where a different antenna may be causing additional emissions).

The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to the physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. It is important to note that host product manufacturers should not assume that because the modular transmitter is certified that they do not have any responsibility for final product compliance.

If the investigation indicates a compliance concern the host product manufacturer is obligated to mitigate the issue. Host products using a modular transmitter are subject to all the applicable individual technical rules as well as to the general conditions of operation in Sections 15.5, 15.15, and 15.29 to not cause interference. The operator of the host product will be obligated to stop operating the device until the interference have been corrected.

The final host/module combination needs to be evaluated against the FCC Part 15B criteria for unintentional radiators to be properly authorized for operation as a Part 15 digital device.

- Additional testing, Part 15 Subpart B disclaimer

The host integrator installing this module into their product must ensure that the final composite product

complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation and should refer to guidance in KDB 996369. For host products with certified modular transmitters, the frequency range of investigation of the composite system is specified by rule in Sections 15.33(a)(1) through (a)(3), or the range applicable to the digital device, as shown in Section 15.33(b)(1), whichever is the higher frequency range of investigation. When testing the host product, all the transmitters must be operating. The transmitters can be enabled by using publicly-available drivers and turned on, so the transmitters are active. In certain conditions, it might be appropriate to use a technology-specific call box (test set) where accessory 50 devices or drivers are not available. When testing for emissions from the unintentional radiator, the transmitter shall be placed in the receive mode or idle mode, if possible. If receive mode only is not possible then, the radio shall be passive (preferred) and/ or active scanning. In these cases, this would need to enable activity on the communication BUS (i.e., PCIe, SDIO, USB) to ensure the unintentional radiator circuitry is enabled. Testing laboratories may need to add attenuation or filters depending on the signal strength of any active beacons (if applicable) from the enabled radio(s). See ANSI C63.4, ANSI C63.10 and ANSI C63.26 for further general testing details.

The product under test is set into a link/association with a partnering device, as per the normal intended use of the product. To ease testing, the product under test is set to transmit a high-duty cycle, such as by sending a file or streaming some media content.

ISED RSS Warning:

This device complies with the Innovation, Science and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.


ISED RF exposure statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

IC Label Instructions:

The outside of final products that contain this module device must display a label referring to the enclosed module. This exterior label can use wording such as: "Contains Transmitter Module IC: 20481-APSC3", or "Contains IC: 20481-APSC3", Any similar wording that expresses the same meaning may be used.

Documents / Resources



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APSC3, APSC3 The Global Leader, The Global Leader, Global Leader, Leader

References

- [User Manual](#)

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