Nest user manual

Overview of Nest

Nest is an image transmission module with WIFI, Ethernet and RTK module designed and manufactured by Autel Robotics LTD., CO.

The module is developed based on the LTE technology platform and is suitable for point-to-point image and data bidirectional transmission. The module provides the function of automatically and manually selecting frequency bands, and has super anti-interference ability.

Characteristics

Single power supply, wide voltage input

USB+2 serial ports

Support four-frequency automatic selection, adaptive frequency point

Support wireless upgrade

Automatic network repair

Encrypted transmission

Full industrial grade components to meet the harsh working environment

Product size is small and easy to integrate Specification

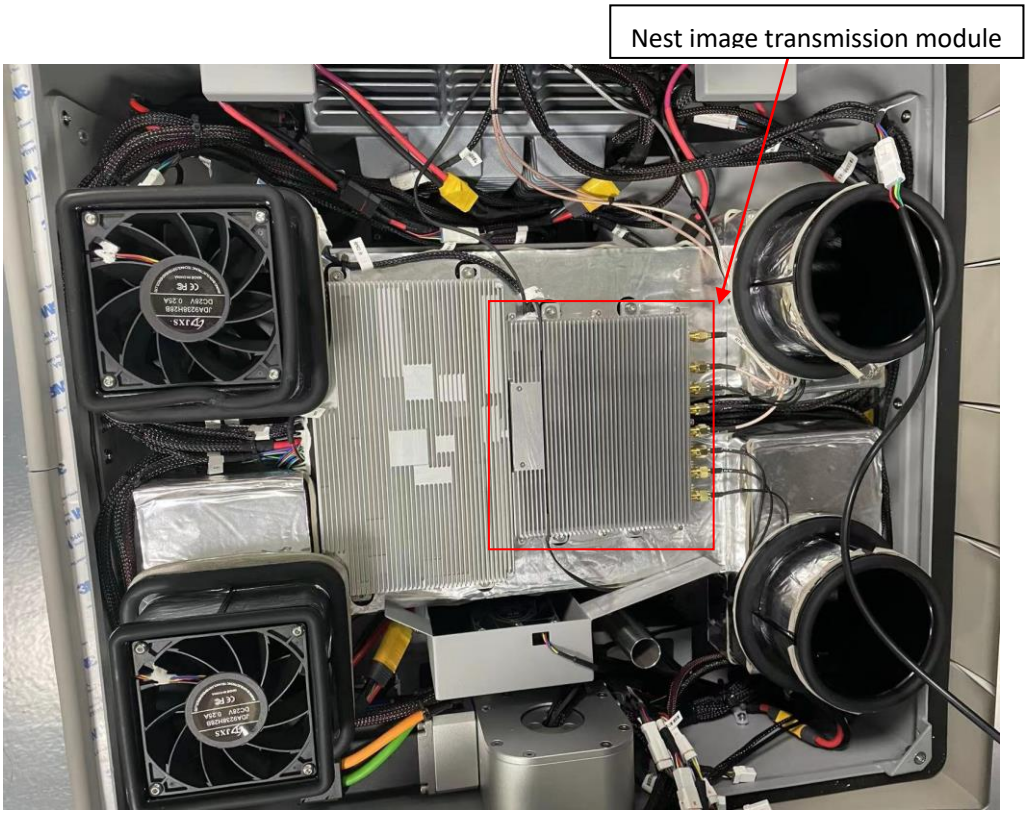
Parameter	Description	Comments
System	Linux/Android	
eMMC/Flash	32GB+24Gb	
Image transmission Frequency	900MHz：902-928MHz 2.4GHz：2400-2483.5MHz 5.2GHz: 5150-5250MHz 5.8GHz：5725-5850MHz	1. Work in one frequency band and frequency at the same time. 2. Can manually set frequency point.
image transmission Bandwidth	1.4MHz/10MHz/20MHz	
WIFI	2400-2483.5MHz,	802.11a/b/g/n/ac

	5180-5240MHz, 5725-5850MHz	
RTK	BDS B1I/B2I/B3I/B1C/B2a/B2b GPS L1/L2/L5 GLONASS L1/L2 Galileo E1/ E5a/E5b/E6	1559-1610MHz receive function
Connector/Definition	A2512WR-4P： UARTx1，Baud rate：115200	
DC Power	12-36V	26V typ.
Power Consumption	≤8W@FCC	
Work Temperature Humidity	-30℃~60℃ 99% No condensation	
Storage Temperature	-40℃~85℃	

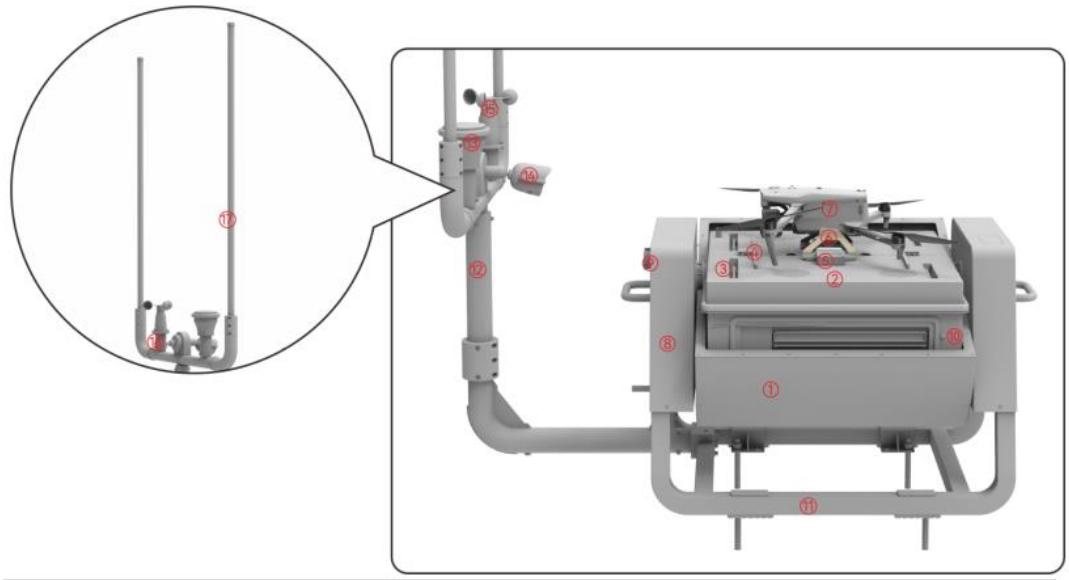
Installation

The Module use for connect to the drone and remote control, it can make the drone land precisely on the tarmac.

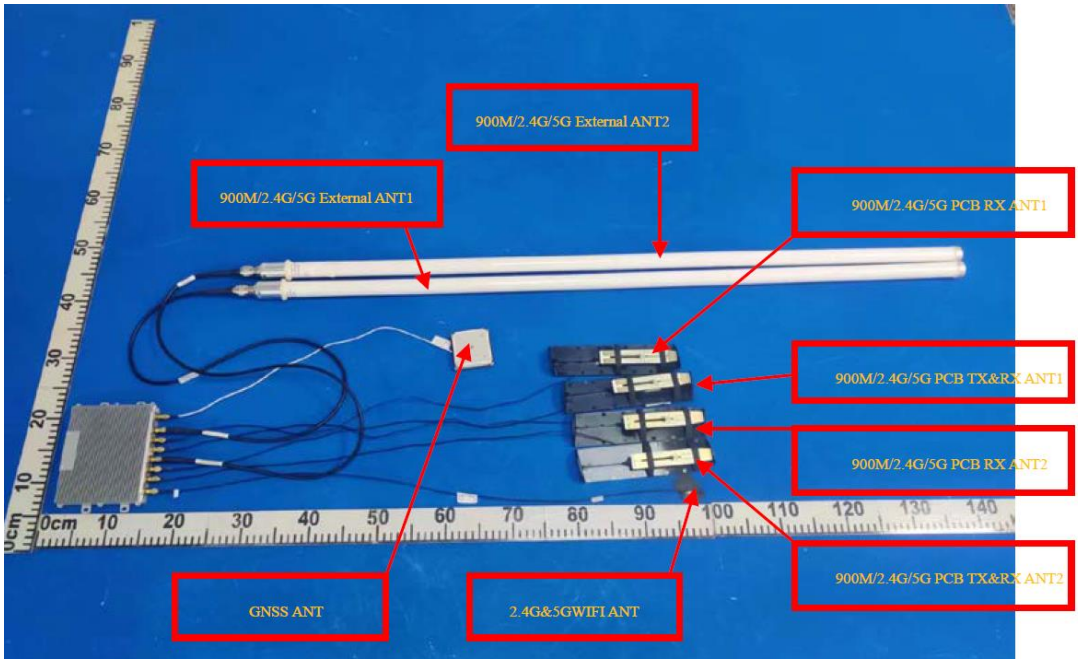
The module is installed in the control center area of EVO Nest, the module connects to the EVO Nest air conditioner, tarmac, charging pole, and control by the skylink app.

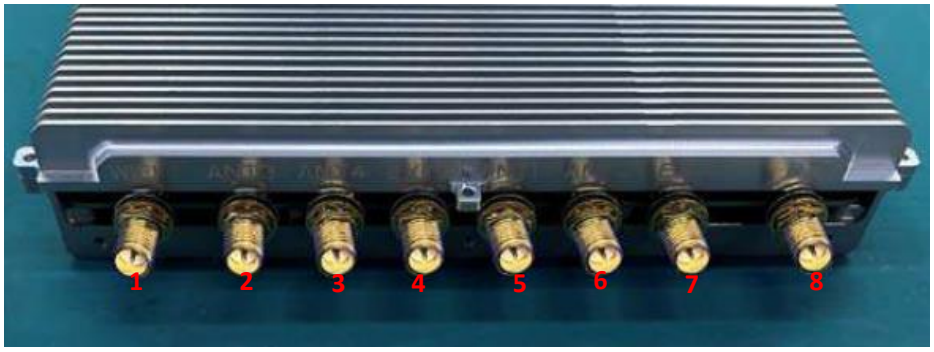


Below is the EVO Nest



Antenna info.





1. 2.4G&5GWIFI ANT
2. 900M/2.4G/5G PCB TX&RX ANT2
3. 900M/2.4G/5G PCB RX ANT2
4. 900M/2.4G/5G External ANT2
5. 900M/2.4G/5G PCB RX ANT1
6. 900M/2.4G/5G PCB TX&RX ANT1
7. 900M/2.4G/5G External ANT1
8. GNSS ANT

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 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 in accordance with 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 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this 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.

Radiation Exposure Statement

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

FCC Part 15 Subpart C 15.247 & 15.407 & 15.207 & 15.209

2.3 Specific operational use conditions

The module is a Nest with WiFi 2.4GHz, WiFi 5GHz, SRD 5.2G/5.8GHz function.

The EUT has one PCB antenna, the antenna cannot be replaced by other authorized antennas, and the gain of each replacement antenna is no more than 1dBi.

This device is to be used only for mobile and fixed applications. This module can only be used with the antenna design in strict compliance with the OEM instructions provided. The module antenna(s) must be installed to meet the RF exposure compliance separation distance of 20 cm and any additional testing and authorization process as required.

2.4 Limited module procedures

Not applicable. The module is a Single module and complies with the requirement of FCC Part 15.212.

2.5 Trace antenna designs

Not applicable. The module has its own antenna, and doesn't need a host's printed board microstrip trace antenna etc.

2.6 RF exposure considerations

The module must be installed in the host equipment such that at least 20cm is maintained between the antenna and users' body; and if RF exposure statement or module layout is changed, then the host product manufacturer required to take responsibility of the module through a change in FCC ID or new application. The FCC ID of the module cannot be used on the final product. In these circumstances, the host manufacturer will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.7 Antennas

The module has its own antennas are as follows:

No.	Antenna	Antenna Type	Frequency Range	Antenna Gain
1	WiFi ANT	FPC Antenna	2412MHz-2462MHz	6.7dBi (Max.)
			5180MHz-5240MHz	4.0dBi (Max.)
			5745MHz-5825MHz	4.0dBi (Max.)
2	900M/2.4G/5G PCB TX&RX ANT2	PCB Antenna	904MHz-926MHz	3.1dBi (Max.)
			2403.5MHz-2471.5MHz	3.3dBi (Max.)
			5154MHz-5246MHz	3.0dBi (Max.)
			5728MHz-5847MHz	3.0dBi (Max.)
3	900M/2.4G/5G PCB RX ANT2	PCB Antenna	904MHz-926MHz	3.1dBi (Max.)
			2403.5MHz-2471.5MHz	3.3dBi (Max.)
			5154MHz-5246MHz	3.0dBi (Max.)
			5728MHz-5847MHz	3.0dBi (Max.)
4	900M/2.4G/5G External ANT2	External Antenna	904MHz-926MHz	5.0dBi (Max.)
			2403.5MHz-2471.5MHz	5.0dBi (Max.)
			5154MHz-5246MHz	5.0dBi (Max.)
			5728MHz-5847MHz	5.0dBi (Max.)
5	900M/2.4G/5G PCB RX ANT1	PCB Antenna	904MHz-926MHz	3.1dBi (Max.)
			2403.5MHz-2471.5MHz	3.3dBi (Max.)
			5154MHz-5246MHz	3.0dBi (Max.)
			5728MHz-5847MHz	3.0dBi (Max.)
6	900M/2.4G/5G PCB TX&RX ANT1	PCB Antenna	904MHz-926MHz	3.1dBi (Max.)
			2403.5MHz-2471.5MHz	3.3dBi (Max.)
			5154MHz-5246MHz	3.0dBi (Max.)
			5728MHz-5847MHz	3.0dBi (Max.)
7	900M/2.4G/5G External ANT1	External Antenna	904MHz-926MHz	5.0dBi (Max.)
			2403.5MHz-2471.5MHz	5.0dBi (Max.)
			5154MHz-5246MHz	5.0dBi (Max.)
			5728MHz-5847MHz	5.0dBi (Max.)

This device is intended only for host manufacturers under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna;

The module shall be only used with the original antenna(s) that has been originally tested and certified with this module. The antenna must be either permanently attached or employ 'unique' antenna coupler.

2.8 Label and compliance information

Host product manufacturers need to provide a physical or e-label stating "Contains FCC ID: 2AGNTNEST" with their finished product.

2.9 Information on test modes and additional testing requirements

Host manufacturer must perform test of radiated & conducted emission and spurious emission, etc. according to the actual test modes for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.
Only when all the test results of test modes comply with FCC requirements, then the end product can be sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for FCC Part 15 Subpart C 15.247 &15.407 & 15.207 & 15.209 and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.