# MVTECH IOT-3 ANALOG Signal Monitor User Manual



Contents



**MVTECH IOT-3 ANALOG Signal Monitor**


IOT_3_ANALOG User Manual

## Product Information

The IOT_3_ANALOG is a monitoring device that processes the analog signal of equipment and transmits the data to a server using built-in Wi-Fi. It supports differential signal 16 channels and also supports communication with servers through Ethernet in areas where Wi-Fi is not available. The device has a main board with CPU, RAM, Flash, Wi-Fi module, Gigabit LAN, 10/100 LAN, and PMIC, an analog board with FPGA, ADC, and LPF, and an OLED display. The exterior of the device features a power switch, 2 LAN ports, a port for an external antenna, LED, 8 D-sub connectors, and a USB client connector for maintenance. The device measures 159 x 93 x 65 (mm) and has been tested to comply with Class B digital device limits for a residential installation as per Part 15 of the FCC Rules.

## Product Usage Instructions

1. Connect the IOT_3_ANALOG device to the equipment you want to monitor using the DAQ connector pin map provided in the user manual.
2. Power on the IOT_3_ANALOG device using the power switch on the front panel.
3. Connect to the server through built-in Wi-Fi or Ethernet based on availability.
4. Monitor the analog signal of the equipment through the OLED display and transmit the data to the server.
5. To ensure compliance with RF exposure regulations, install and operate the device in accordance with provided instructions and ensure that the antenna used for the transmitter is installed at least 20 cm away from all persons and is not co-located or operating with any other antenna or transmitter.

**Revision History**

| Version | Date | Change History | author | Confirmed By |
|---|---|---|---|---|
| 0.1 | 20220831 | draft | | |
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## Introduction

- The IOT_3_ANALOG monitors the analog signal of equipment. The IOT_3_ANALOG processes the Analog signal of the monitored equipment and transmits the desired data to the server.
- The IOT_3_ANALOG transmits to the server using the built-in WIFI. In areas where Wi-Fi is not available, communication with servers is supported through Ethernet.
- The IOT_3_ANALOG supports differential signal 16 channels.

## IOT_3_ANALOG Specifications

- The IOT_3_ANALOG consists of 3 boards. (Main Board, ANA. Board, OLED Board)
- The IOT_3_ANALOG operating temperature : Max. 70 °
- The IOT_3_ANALOG is a fixed equipment.
- After installation, it is not accessible during normal use.

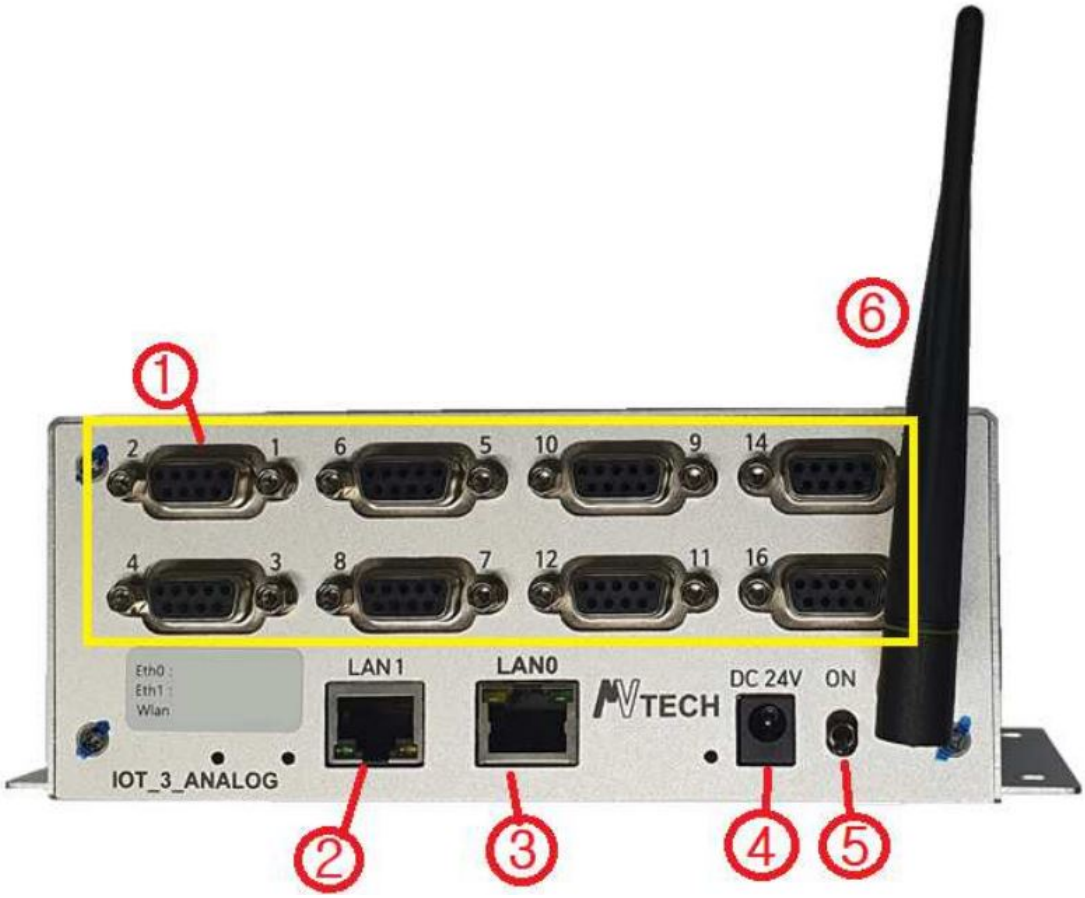
### Board Components

- **A. Main**
  - **i.** CPU / RAM / Flash / WiFi Module / GiGa LAN / 10/100 LAN / PMIC
- **B. ANALOG.**
  - **i.** FPGA / ADC / LPF
- **C. OLED**
  - **i.** OLED

### Exterior

This is a picture of IOT_3_ANALOG case. The front panel of IOT_3_ANALOG has Power (24Vdc), POWER Switch, 2 LAN Port, a Port of external antenna, LED, 8 D-sub connectors. The rear panel of IOT_3_ANALOG has usb client connector for maintanace.


(IOT_3_ANALOG Exterior)




(IOT_3_ANALOG Front Exterior)

(IOT_3_ANALOG Back Exterior)

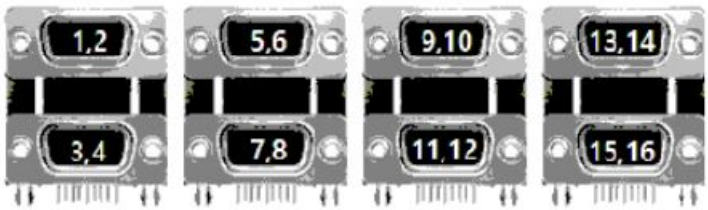

(IOT_3_ANALOG TOP Exterior)

### H/W Specification

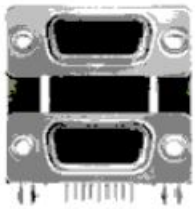
| ITEM | SPECIFICATION |
|---|---|
| CPU | S922X Quad-core A73 & Dual-core A53 |
| DDR | DDR4 4GByte, 32Bit Data bus |
| eMMC | 32GByte |
| ETHERNET | GIGABIT-LAN, 10/100 |
| ADC | Differential 16 ch. |
| WIFI | |
| Modulation | DSSS(CCK), OFDM |
| POWER SWITCH | Toggle switch x 1 |
| SUPPLY POWER | 24V (500mA) |
| Size | 159 x 93 x 65 (mm) |

#### DAQ connector pin description

- **A.** ADC Connector Pin map




◆ DB9 Pinmap

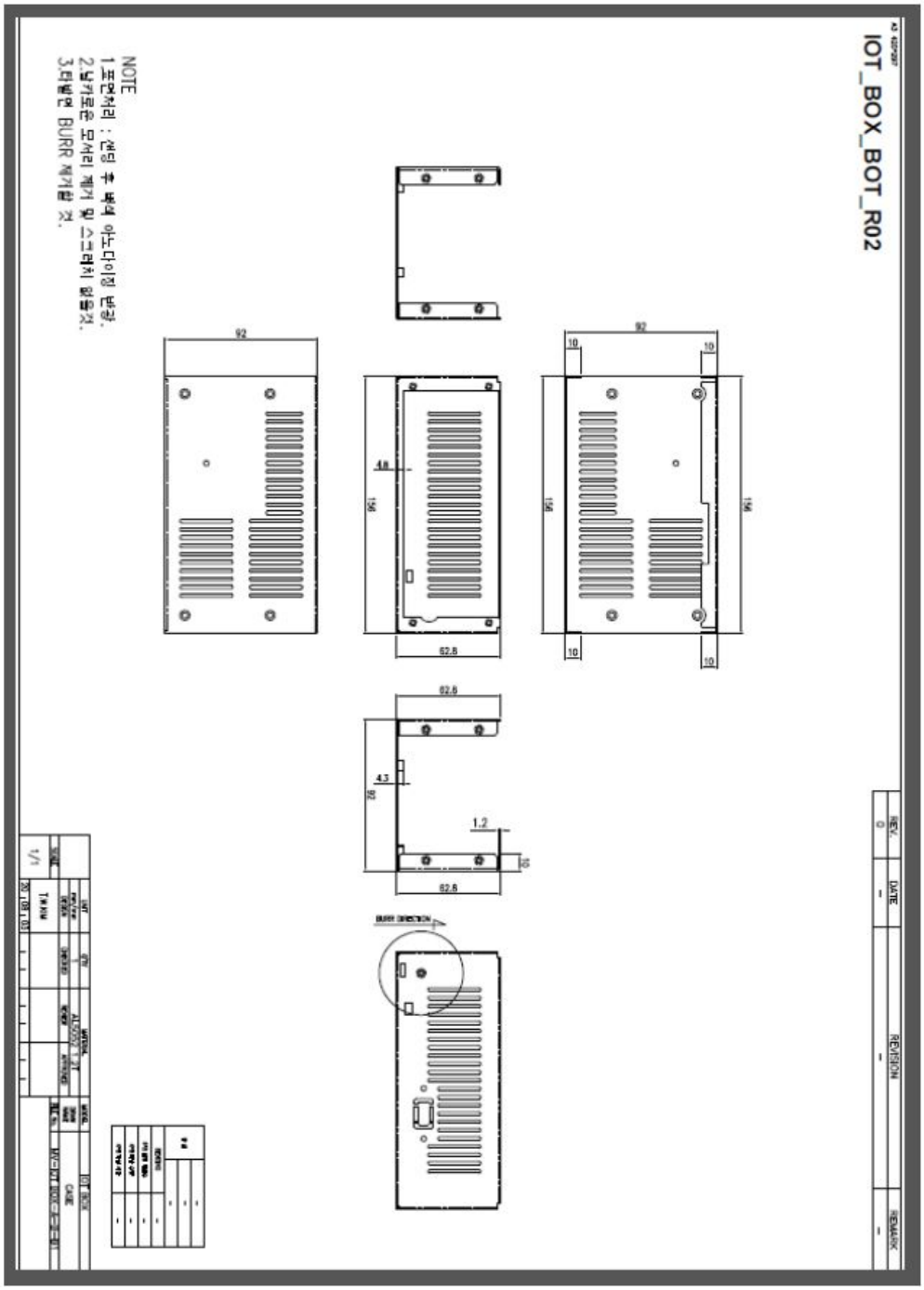



178-009-513R691

| PIN # | PIN NAME |
|---|---|
| 1 | 24V_1 |
| 2 | GND |
| 3 | Dedicated |
| 4 | 24V_2 |
| 5 | GND |
| 6 | A IN1+ |
| 7 | A IN1- |
| 8 | A IN2+ |
| 9 | A IN2- |

## Case

1. **Case drawings**




## FCC

### Federal Communication Commission Interference 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 generate, 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 technical for help.
- Only shielded interface cable should be used.

Finally, any changes or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the users authority to operate such 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
**Caution :** Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device is operation in 5.15 – 5.25 GHz frequency range, then restricted in indoor use only.

**RF exposure warning**
This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

## Documents / Resources

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|---|---|
|   | MVTECH IOT-3 ANALOG Signal Monitor [pdf] User Manual<br>2A8WW-IOT3ANALOG, 2A8WWIOT3ANALOG, IOT-3 ANALOG, IOT-3 ANALOG Signal Monitor, Signal Monitor, Monitor |