# URBAN NOISE MONITORING STATION

## DATASHEET

## Document Release Information

| Persons in Charge | | Document Information | |
|---|---|---|---|
| Technical Approval | Petar Ivanov | Version | 2.1 |
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# 1. Description

The Urban Noise Monitoring Station is a hardware noise monitoring solution that helps cities and communities sense accurate noise level data. The Station operates autonomously without requiring external power source or any type of manual data gathering.

Key features of the Urban Noise Monitoring Station:

- Calibrated omnidirectional industrial two-microphone formation ensuring 360 degrees of sound capture for consistent and accurate noise sensing;
- Built-in electronic compass to determine the direction of the noise source;
- Microphones are protected with a moisture-resistant replaceable windshield;
- All housed in a rugged plastic body with IP54 rating, for outdoor mounting;
- Powered by a rechargeable and replaceable industrial battery ensuring long device life and charged by a solar panel (provided as part of the set). Can run 14 days solely on battery power (without solar panel);
- Utilizes energy-efficient transmission technologies, such as LoRaWAN and NB-IoT.
- Built-in separate internal antenna (not printed on the board) to provide long-distance connectivity and lower power consumption;
- Built-in waterproof connector for attaching a solar panel or a power adapter;
- Fast and easy to install, maintain, and support;
- Streetlight post mounting kit included (for post diameter 10cm - 25 cm).
- Provides effortless multi-platform integration using standard protocols.
- Reporting interval is remotely configurable.

# 2. Technical Specification

| Parameter | Description |
|---|---|
| Hardware Version | 2.0 |
| Detection Range | 30 dB ~ 120 dB |
| | 20 Hz ~ 20 kHz |
| Resolution | 0.1 dB |
| Accuracy | 0.5 dB |
| Power Supply | Rechargeable industrial battery pack |
| | Solar Panel |
| Industrial Battery Pack | 2900 mAh / 10.5 Wh |
| | Rechargeable |
| | Replaceable |
| | 10 years lifetime |
| Solar Panel | 20W |
| | Connects to the Station via a waterproof connector |
| Connectivity Options | LoRaWAN |
| | NB-IoT |
| GPS Module | Embedded |
| Protection Level | IP54, for outdoor mounting |
| Operating Temperature | - 30°C ~ + 60°C |
| Operating Humidity | 0 ~ 100% RH |
| Dimensions | 145 x 125 x 56 mm |

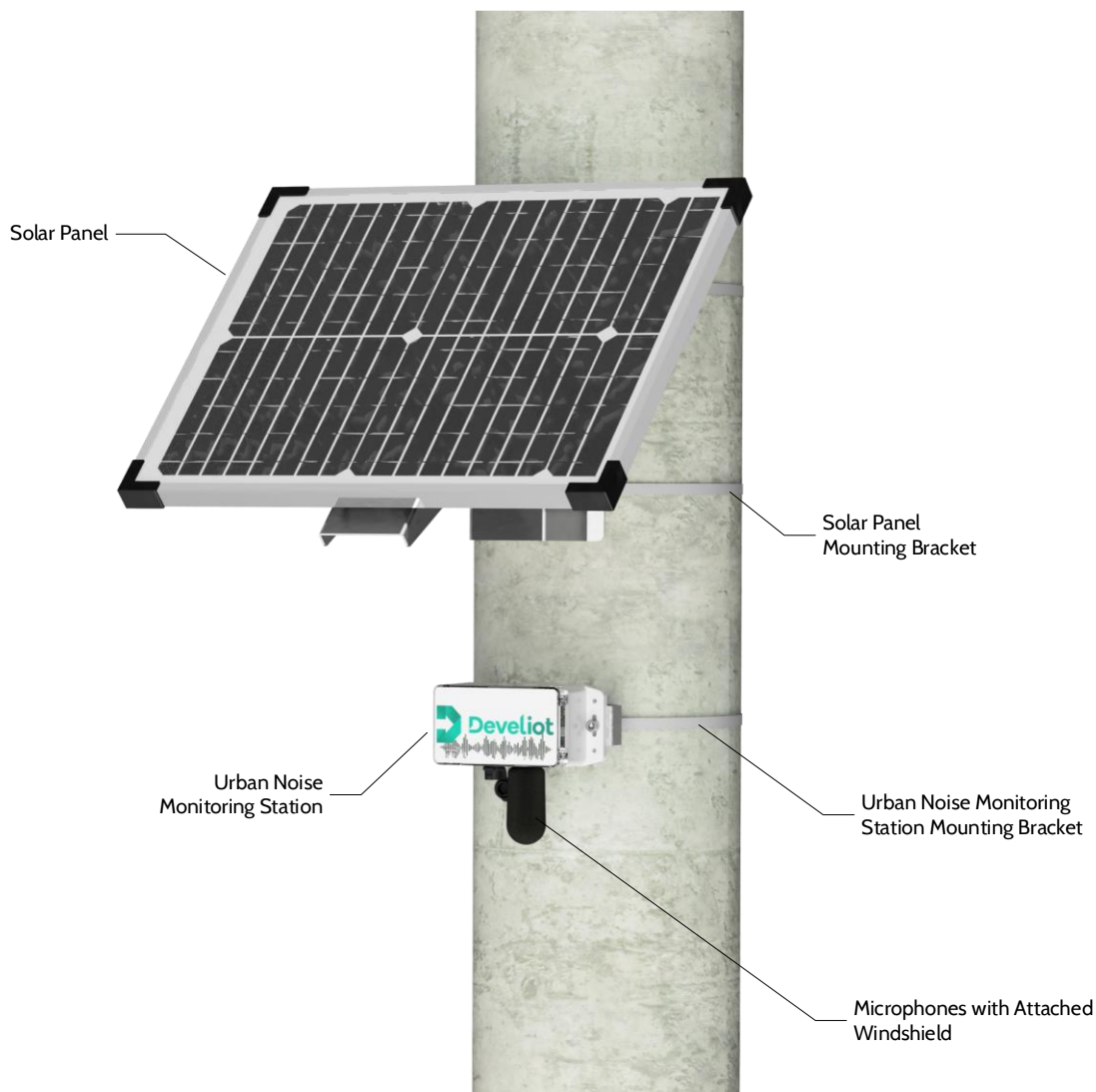*Table 1: Urban Noise Monitoring Station Specification*

# 3. Station Overview



Solar Panel

Solar Panel Mounting Bracket

Urban Noise Monitoring Station

Urban Noise Monitoring Station Mounting Bracket

Microphones with Attached Windshield

*Figure 1: Urban Noise Monitoring Station Overview*

# 4. Options

| Product Number | Description |
|---|---|
| DNM2010AA | LoRaWAN AU923, Solar Panel, Rechargeable Battery |
| DNM2010AB | LoRaWAN EU868, Solar Panel, Rechargeable Battery |
| DNM2010AC | LoRaWAN US915, Solar Panel, Rechargeable Battery |
| DNM2010AD | LoRaWAN IN865, Solar Panel, Rechargeable Battery |
| DNM2010AE | LoRaWAN AS923, Solar Panel, Rechargeable Battery |
| DNM2010DA | NB-IoT, Solar Panel, Rechargeable Battery |

*Table 2: Urban Noise Monitoring Station Options*