SUMMARY

The Base Station WVT-BS2X0B is a software defined radio transceiver based high Resolution Multi-Accumulator Fractional-N synthesis. It is available in receiver or receiver/transmitter configuration covering 100 MHz to 1000 MHz. Frequency plan can be extended beyond existing frequency range upon agreement, and some additional and unique options, “ruggedness options” or “robustness options” are either available or in preparation. The base station has separate Tx/Rx output.

It is primarily designed to operate with radio modems using the WAVIoT protocol, which gives a transmission range of up to 20 miles in an urban environment, and 50 miles in open country, while allowing power-autonomous operation in excess of 20 years using a single AA lithium battery. As the Base Station WVT-BS2X0B is SDR it can also easily be configured to receive any other narrow band protocol.

<table>
<thead>
<tr>
<th>BS</th>
<th>X</th>
<th>X</th>
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<th>B/U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Station</td>
<td>Generation</td>
<td>Channels</td>
<td>Version</td>
<td>Bi-directional / Uplink Only</td>
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</tbody>
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Hardware Features

- SDR transceiver 2.5 MHz baseband, full duplex
- ARM Cortex-A15 2.3 GHz with Ubuntu 14.04 LTS
- Signal processing is done by GPU Tegra K1/X1
- 16-bit ADC sampling rate up to 20MHz
- LO resolution (1Hz), phase noise & lock times
- Low phase noise < -110 dBc/Hz @ 1 kHz
- Ubuntu 14.04 LTS
- Up to three sectorial dual polarization antennas 12 dBi, HPBW 120°, VPBW 15°, VSWR 1.1
- Network connection is done via Mikrotik RouterOS
- Power consumption up to 20 W
- Configurable for operation with different ultra-narrow band protocols
- Ruggedized for harsh conditions - IP67
- Fanless, passive cooling
- Power over Ethernet

WAVIoT Protocol Features

- WAVIoT™ proprietary radio protocol
- Sensitivity -154 dBm
- Channel bandwidth 100 Hz
- FCC/ECC compliant
- 20 miles range in urban environment

Applications

- Automated Meter Reading
- Wireless Alarm and Security Systems
- Smart agriculture
- Home and Building Automation
- Industrial Monitoring
- Pipeline and well-head monitoring
BASE STATION BLOCK DIAGRAM

MECHANICAL AND ENVIRONMENTAL

- Product dimensions 285 x 215 x 100 mm
- Product weight 5 kg
- Casing material: aluminum
- Operating temperature: -30°C to +50°C
- Storage temperature: -40°C to +85°C
NETWORK CONNECTION

To simplify gateway installation network settings are done through Mikrotik RouterBOARD RB951Ui-2HnD. Thus network software is separated from radio processing unit. Standard Mikrotik tools can execute monitoring of the processing unit. System administrator can remotely set up:

- VPN services
- Customized settings for GSM modems
- Connect gateway from private area networks
- IP, DCHP, PPPoE, L2TP
- Dynamic DNS
- Wi-Fi access