Weightless Starter Kit

Product Brief

Weightless Starter Kit by Ubiik Inc.

Models: Weightless Starter Kit 868MHz/915MHz

A complete Weightless network in a box. The starter kit includes everything required to test a Weightless low power, wide area network and begin developing your end application.

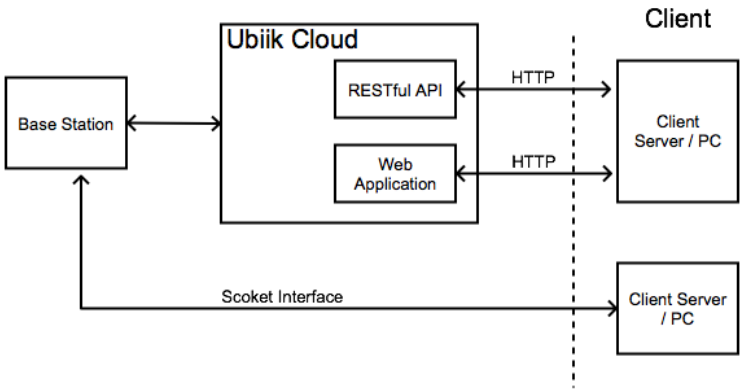
Kit Contents	#	Details
Base Station	1	
Base Station Antenna	1	(868MHz or 915MHz)
Base Station AC Adaptor	1	
ED Module Evaluation Board	2	
End Device Antenna	2	(868MHz or 915MHz)
Micro USB to USB	2	
60-day free of charge access to Ubiik Cloud		

Image 1 - Weightless Starter Kit

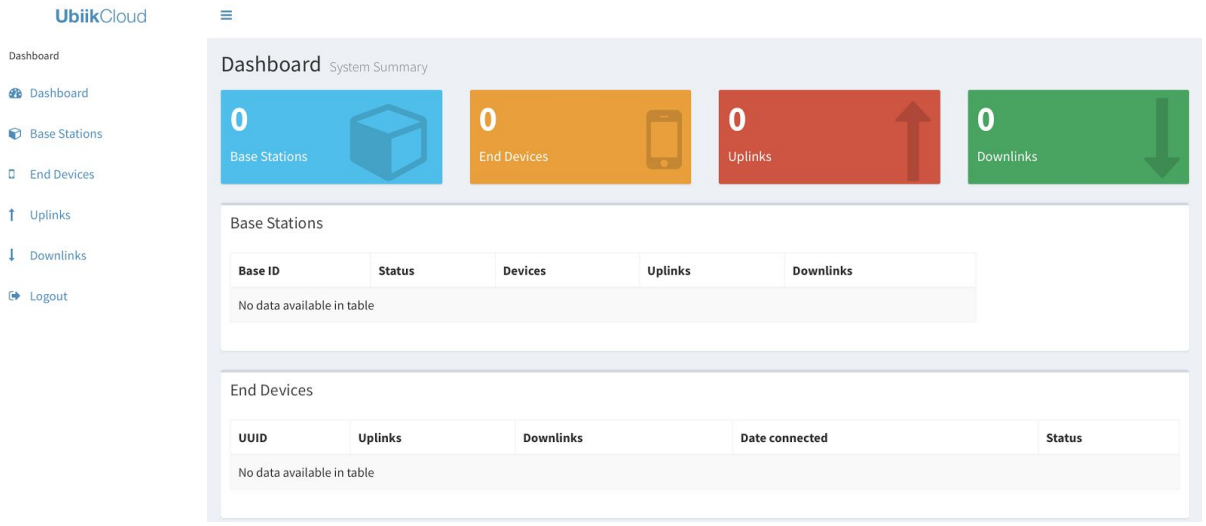
Image 2 - Weightless Starter Kit Hardware Contents

The Weightless Kit includes full step-by-step manual to power-on your base station, connect end-devices to the network, and begin running tests. Ubiik also provides downloadable testing tools.

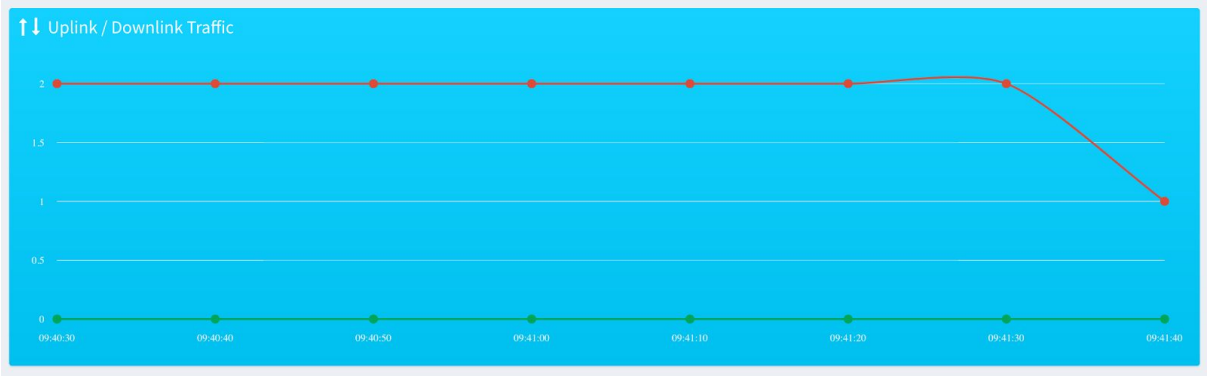
Ubiik Cloud



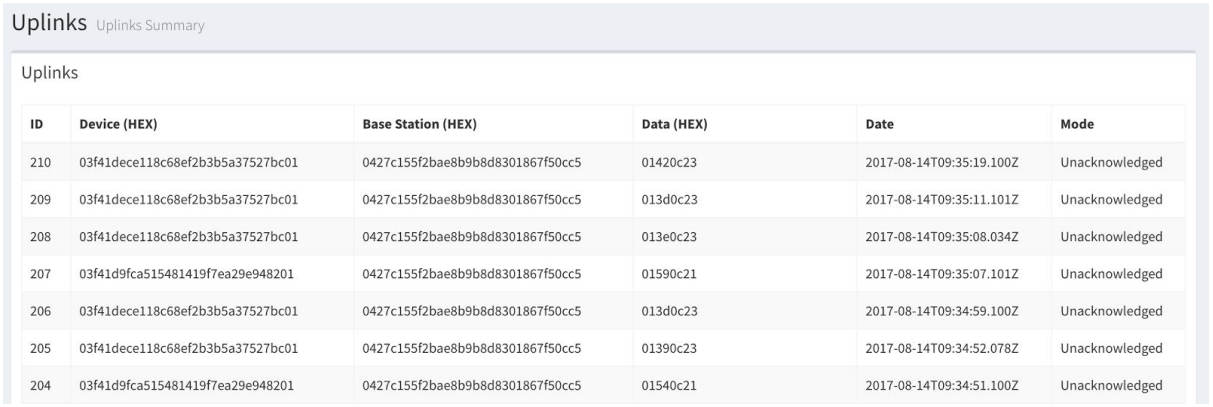
Each Weightless Starter Kit includes a FREE 60-day license for Ubiik cloud usage. From the dashboard you can view your Base Station and End Device(s) in the cloud.



See Uplink and Downlink traffic, which is sampled every 10 seconds.



Uplink History

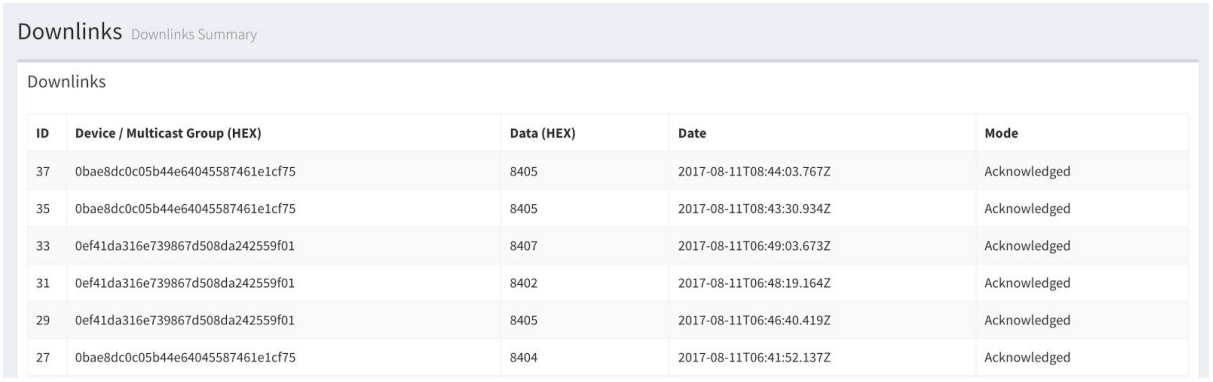


Uplinks Uplinks Summary

Uplinks

ID	Device (HEX)	Base Station (HEX)	Data (HEX)	Date	Mode
210	03f41dece118c68ef2b3b5a37527bc01	0427c155f2bae8b9b8d8301867f50cc5	01420c23	2017-08-14T09:35:19.100Z	Unacknowledged
209	03f41dece118c68ef2b3b5a37527bc01	0427c155f2bae8b9b8d8301867f50cc5	013d0c23	2017-08-14T09:35:11.101Z	Unacknowledged
208	03f41dece118c68ef2b3b5a37527bc01	0427c155f2bae8b9b8d8301867f50cc5	013e0c23	2017-08-14T09:35:08.034Z	Unacknowledged
207	03f41d9fca515481419f7ea29e948201	0427c155f2bae8b9b8d8301867f50cc5	01590c21	2017-08-14T09:35:07.101Z	Unacknowledged
206	03f41dece118c68ef2b3b5a37527bc01	0427c155f2bae8b9b8d8301867f50cc5	013d0c23	2017-08-14T09:34:59.100Z	Unacknowledged
205	03f41dece118c68ef2b3b5a37527bc01	0427c155f2bae8b9b8d8301867f50cc5	01390c23	2017-08-14T09:34:52.078Z	Unacknowledged
204	03f41d9fca515481419f7ea29e948201	0427c155f2bae8b9b8d8301867f50cc5	01540c21	2017-08-14T09:34:51.100Z	Unacknowledged

Downlink History

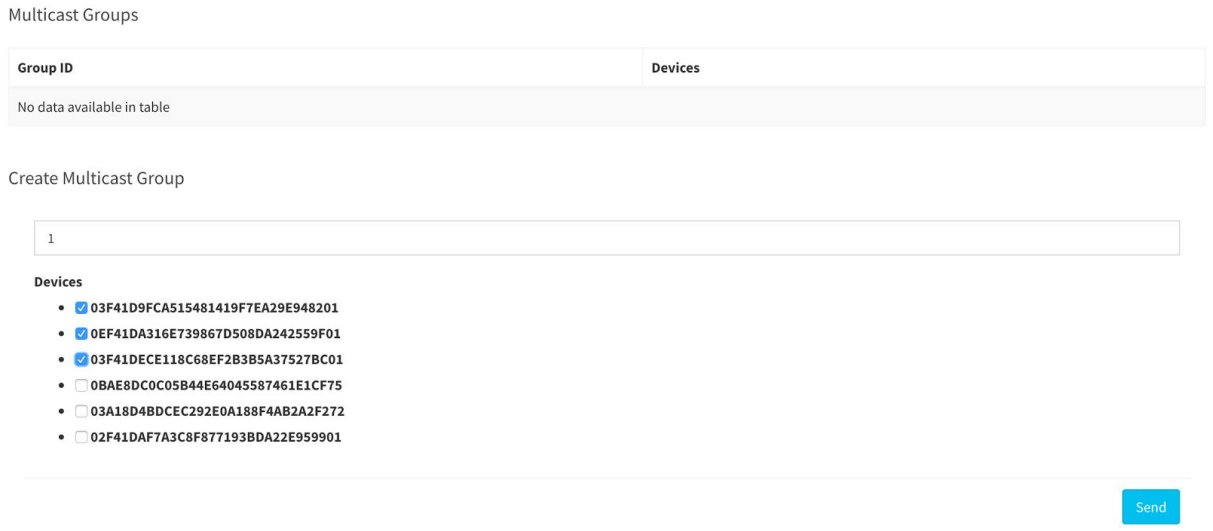


Downlinks Downlinks Summary

Downlinks

ID	Device / Multicast Group (HEX)	Data (HEX)	Date	Mode
37	0bae8dc0c05b44e64045587461e1cf75	8405	2017-08-11T08:44:03.767Z	Acknowledged
35	0bae8dc0c05b44e64045587461e1cf75	8405	2017-08-11T08:43:30.934Z	Acknowledged
33	0ef41da316e739867d508da242559f01	8407	2017-08-11T06:49:03.673Z	Acknowledged
31	0ef41da316e739867d508da242559f01	8402	2017-08-11T06:48:19.164Z	Acknowledged
29	0ef41da316e739867d508da242559f01	8405	2017-08-11T06:46:40.419Z	Acknowledged
27	0bae8dc0c05b44e64045587461e1cf75	8404	2017-08-11T06:41:52.137Z	Acknowledged

Create Multicast Groups



Multicast Groups

Group ID	Devices
No data available in table	

Create Multicast Group

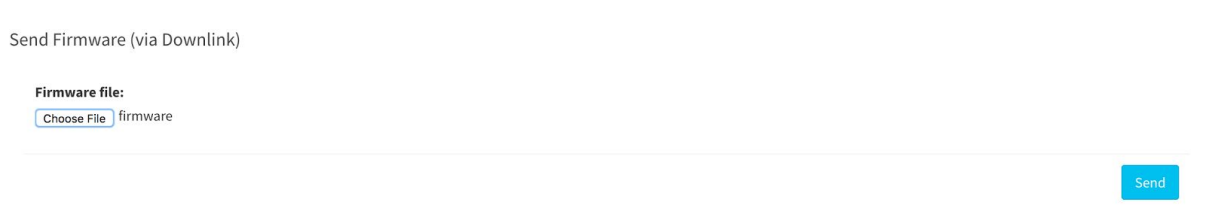
1

Devices

- ☑ 03F41D9FCA515481419F7EA29E948201
- ☑ 0EF41DA316E739867D508DA242559F01
- ☑ 03F41DECE118C68EF2B3B5A37527BC01
- ☐ 0BAE8DC0C05B44E64045587461E1CF75
- ☐ 03A18D4BDCEC292E0A188F4AB2A2F272
- ☐ 02F41DAF7A3C8F877193BDA22E959901

Send

Send Firmware



Send Firmware (via Downlink)

Firmware file:

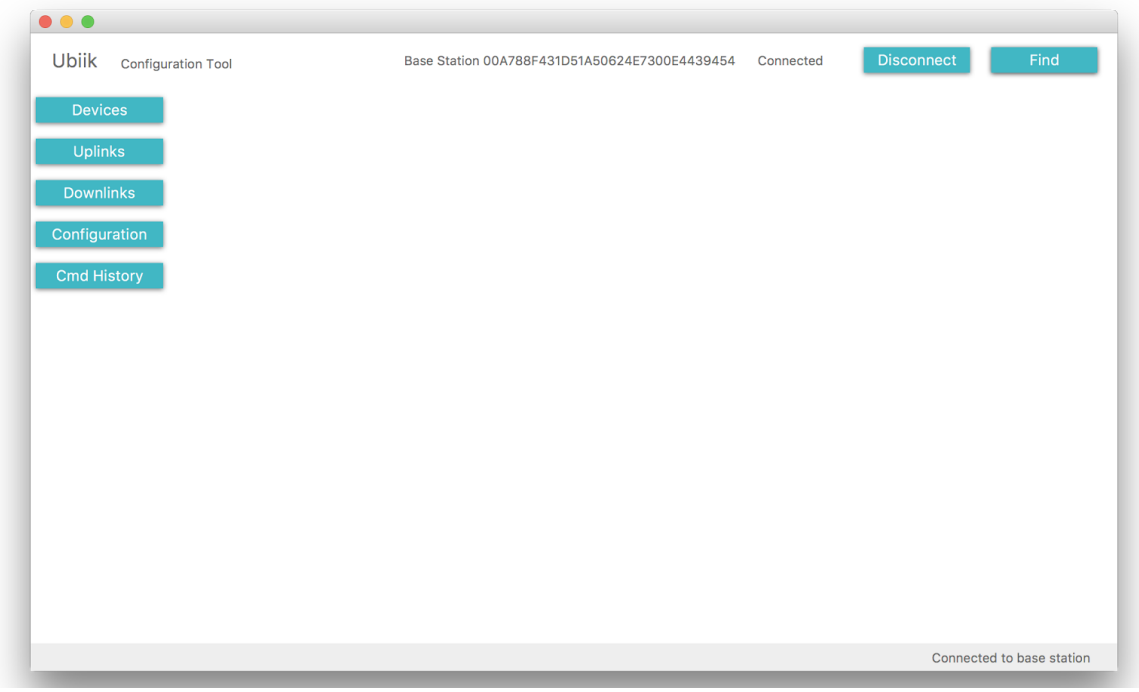
Choose File firmware

Send

and many more Cloud features...

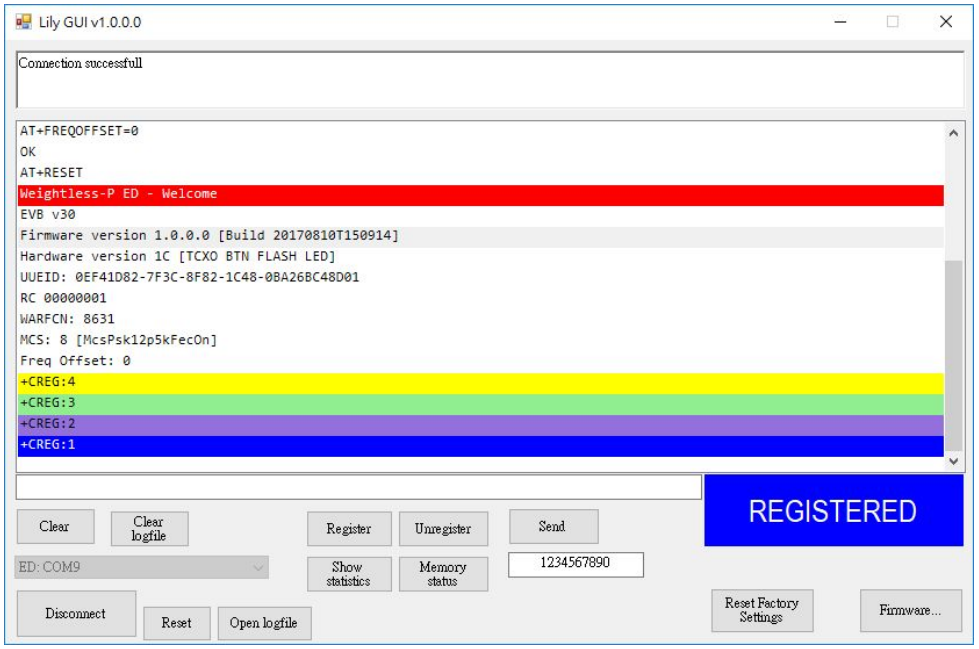
Config Tool

If users wish to test without using internet connectivity, the Starter Kit can be used in offline mode with the Config Tool. The Config Tool is the program to connect your base station, view uplinks/downlinks, and send commands (basically implements all of the features of the Ubiik Cloud in an offline program.



EVB GUI (aka Lily GUI)

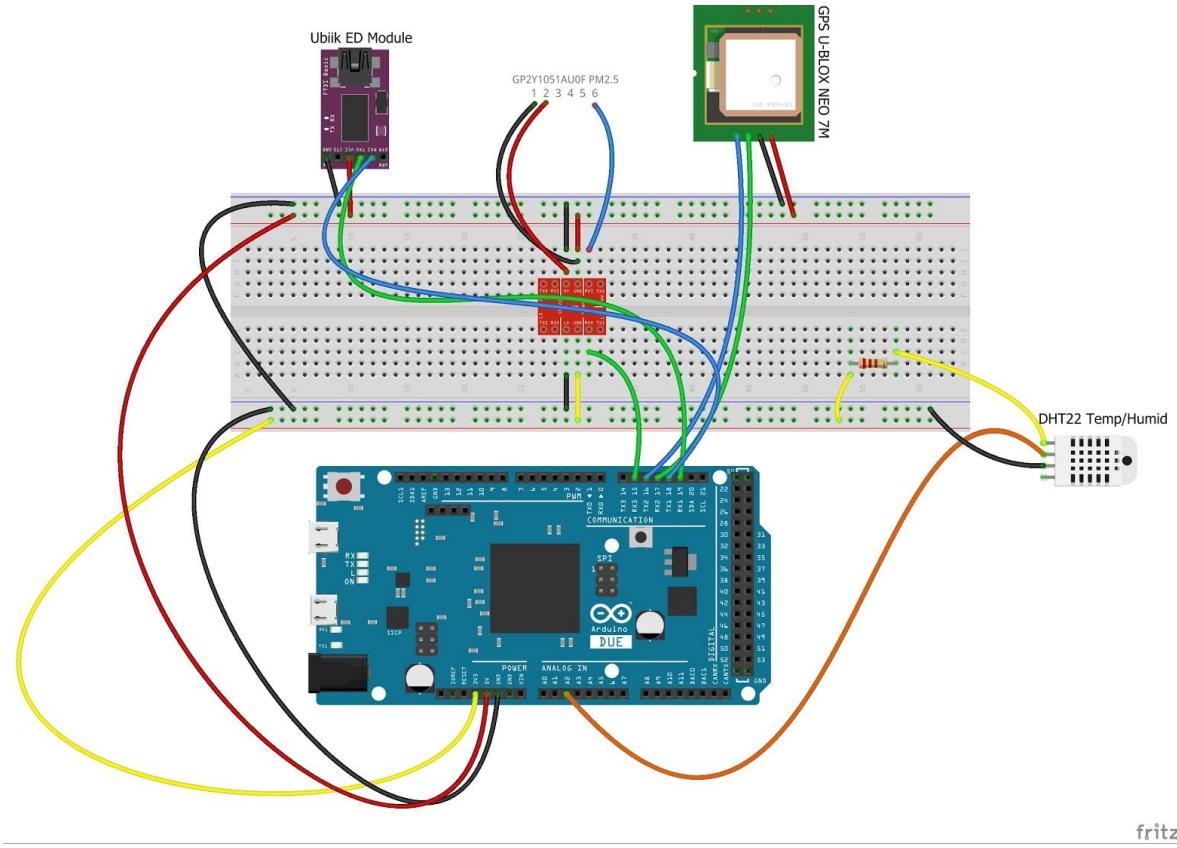
Weightless End Device is accessible via UART and controlled by sending and receiving AT commands. Ubiik provides customers with an **End Device Module EVB GUI (Lily GUI)** that can be used as the command interface.



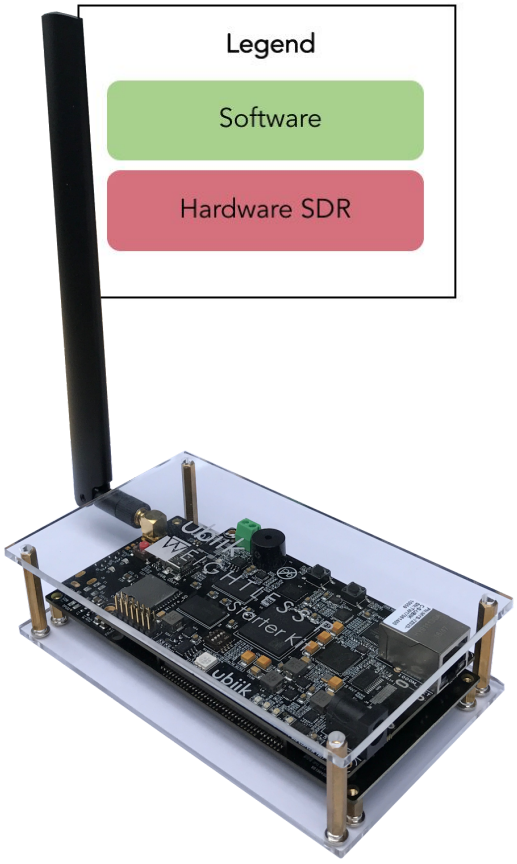
Arduino

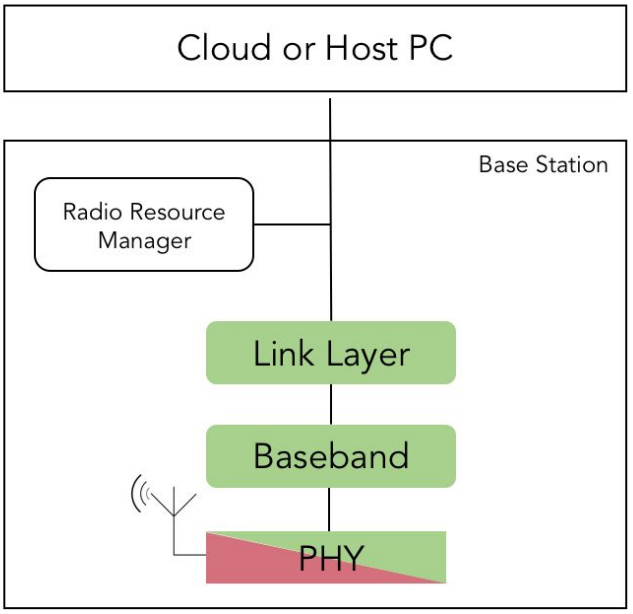
Upon request, there are manuals and Arduino sample source code to connect the End-Device EVB to an Arduino board. This allows users to connect any sensor of preference and send the sensor readings via Weightless back to the base station.
The manual specifically addresses connecting the following sensors...

1. PM2.5
2. Temperature
3. Humidity
4. GPS
5. LED



Base Station:

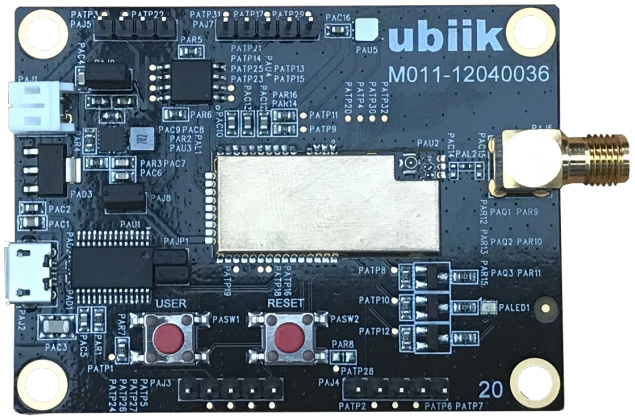




The Weightless Ignition Kit Base Station includes a full Weightless protocol stack and uses Software Defined Radio to create a low-power, long range network for large density, bi-directional wireless communication of data. The Base Station complies with the open, license-free Weightless protocol specifications.

Product Description	
Dimensions	130 x 82 x 36 mm
Processor	Dual core ARM Cortex-A9 @667MHz running Linux
Interface	Ethernet
Memory	1GB DDR3 SDRAM
Power Supply	5V/2A DC
Frequency	868/915MHz
UL Data rate	100/50/12.5/6.25kpbs single channel 10/5/1.25kbps for 8 sub-channels
DL Data Rate	100/50/12.5/6.25kpbs
Sensitivity	0.625kbps -134dBm
TX power	Available in non-PA / PA version
Modulation	GMSK/PSK
Protocol	Weightless protocol stack

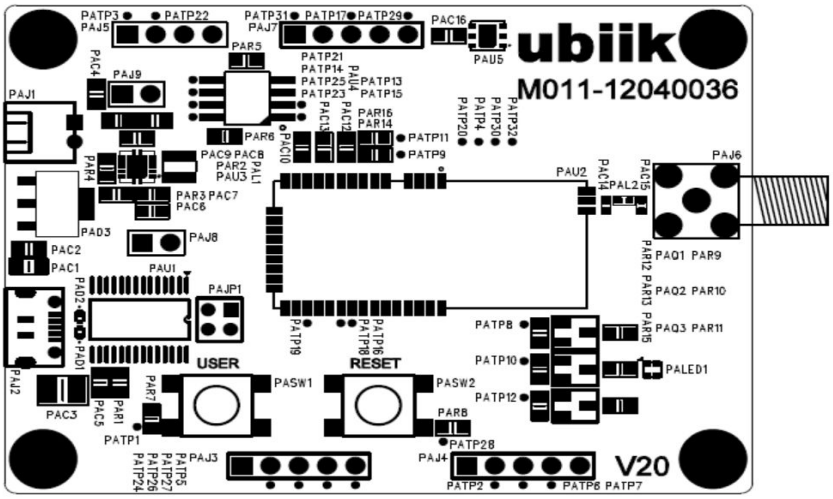
End-Device Module Eval Board



The evaluation board has Weightless End Device Module and a USB to serial bridge as well as voltage regulation circuitry. Furthermore it hosts a reset switch, a bootloader switch, 2 buttons, and 1 LED. All of are connected to the I/Os of the module as described later in this document.

Product Description	
Host Interface	UART / USB / JTAG / ADC / GPIO
Operating Voltage	Micro USB Battery 3.3V
Sensor	Temperature / Humidity
Frequency	868 MHz / 915 MHz
Tx Power	12 dBm
Sensitivity	-124 dBm @ 6.25Kbps
RF Connector	SMA Type
Dimensions	67mm x 50mm

End-Device Module Eval Board



Pin(s)	Symbol	Description
PAJ1 - 1	5V	Power Supply_5V
PAJ1 - 2	GND	Power Supply_Ground
PAJ2	Micro USB	Micro USB Connector
PAJ3 - 1	GND	Power Supply_Ground
PAJ3 - 2	VDD	Power Supply_3.3V
PAJ3 - 3	DBG_SWDIOTMS	Debug-interface Serial Wire data input / output and JTAG Test Mode Select.
PAJ3 - 4	DBG_SWCLKTCK	Debug-interface Serial Wire clock input and JTAG Test Clock.
PAJ3 - 5	RESETn	Reset input, active low
PAJ4 - 1	VDD	Power Supply_3.3V
PAJ4 - 2	PF6	General purpose Input / Output pin
PAJ4 - 3	PC6	General purpose Input / Output pin
PAJ4 - 4	PC7	General purpose Input / Output pin
PAJ4 - 5	GND	Power Supply_Ground
PAJ5 - 1	VBUS	Power Supply_5V
PAJ5 - 2	VDD	Power Supply_3.3V
PAJ5 - 3	5V	Power Supply_5V
PAJ5 - 4	GND	Power Supply_Ground
PAJ6	RF Connector	Antenna connector, SMA type
PAJ7 - 1	AIN	Analog to Digital Converter
PAJ7 - 2	N/C	No Connect
PAJ7 - 3	AREF_N	External reference input negative pin
PAJ7 - 4	GND	Power Supply_Ground
PAJ7 - 5	AREF_P	External reference input positive pin
PAJ8	JUMPER_2.54mm	Current Measure_3.3V
PAJ9	JUMPER_2.54mm	Current Measure_5V
PAJP1	JUMPER_2.0mm	UART Interface
PASW1	USER	User define, active low
PASW2	RESET	Reset input, active low

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