Configuring the AquaPing sensor using a D1 mini and serial terminal program

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A UART serial terminal program like putty or minicom can be used to monitor sensor operation and send it a variety of commands. The following eight commands are converted to suitable byte strings by the D1 mini (ESP8266) that are passed to the sensor via I2C. The structure of all commands except reset (single character r) is a single lower-case alphabetic, followed by a 1–3 digit numeric, and the Enter key. As an example, the polling period is set to 10 seconds by entering the command: o5

Multiple commands can be sent provided there is a single space between them. Commands can be sent in any order as long as the proper syntax is used. Example: The data collection set is resized to 128 and LEDs are turned off by entering: e128 l0

The commands shown in Table I create persistent settings that remain in the sensor's non-volatile memory after power cycling:

Parameter	Lower case character	Numeric arguments	Corresponding values
LEDs	l	0 or 1	On or Off
Background	b	10–255	10–255
Polling period	o	1–9	1, 2, 3, 5, 10, 15, 20, 25, 30 sec
Event array size	e	10--255	10–255
Trigger count	t	10–255	10--255

Table I. Persistent sensor parameters

The commands shown in Table II control the sensor from the terminal. The sensor is always in an active state after power cycling.

Control	Lower case character	Arguments	Action
Power state	p	0 or 1	Sleep or Active
Alarm	a	0 or 1	Enable or Disable
Reset	r		Set all parameters to defaults

Table II. Non-persistent sensor controls

All of the above commands will erase any accumulated data and counting will begin fresh. The sensor will reject a setting with Trigger count > Event array size. D1 mini defaults: 9600 baud/sec; 10 sec polling. Modify the firmware as needed. Interface to host computer with USB-micro cable.