Gen 1 BLE:
Data Messaging Format

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Overview

The Kegtron Gen1 product family consists of two different types of devices: single tap (KT-100) and dual tap (KT-200) keg monitors. The Gen 1 products use Bluetooth Low Energy (BLE aka Bluetooth 4.x) to wirelessly share data. This data is shared in the form of Advertisement and Scan Response messages.

Advertisement and scan response data is periodically broadcast as read-only messpackets from each device. To ensure scan response data packets are received, the BLE central device (e.g. smartphone, Raspberry Pi, etc.) **must enable active scanning**.

Single keg monitors act like conventional BLE devices and no special considerations are required when decoding the scan response data.

Dual keg monitors, as the name implies, have two independent ports with independent sets of data for each port. A special flag within the scan response packet is used to associate the sensor data with a specific port. It is therefore necessary for the BLE central device to be aware of this flag to ensure data is associated with the appropriate port.

Advertisement Data

Advertisement packets are fixed in length (22 byte) and format which is made up of three concatenated structures. Advertisement packets contain static device identifier information but no telemetry data.

Position	Size	Static?	Description
0	1	Y	Total length (excluding length byte) = 0x02
1	1	Y	Type = 0x01 (flags)
2	1	Y	Flags = 0x06 (LE general discoverable mode, no BR/EDR)
3	1	Y	Total length (excluding length byte) = 0x02
4	1	Y	Type = 0x0A (TX Power)
5	1	Y	Output power in dBm = 0x08
6	1	Y	Total length (excluding length byte) = 0x0F
7	1	Y	Type = 0x09 (Complete local name)
8:21	8	Y	"Kegtron xxxxxx" (where xxxxxxx = MAC address suffix)

Scan Response Data

Kegtron scan response packets are fixed in size (31 byte) and format. The Kegtron BLE scan response format is as follows:

Position	Size	Static?	Description
0	1	Y	Total length (excluding length byte). Always = 0x1E (30dec)
1	1	Y	Type. Always = 0xFF (Mfg specific data)
2:3	2	Y	Company Identifier Code (CIC). Always = 0xFFFF
4:5	2	N	Keg size in mL. Unsigned integer.*
6:7	2	N	Volume start in mL. Unsigned integer.*
8:9	2	N	Volume dispensed in mL. Unsigned integer.*
10	2	N	Port / State byte ● Bits 7:6 - Port count (static) ○ 00 = Single port device ○ 01 = Dual port device ○ 1x = Reserved ● Bits 5:4 - Port index* ○ 00 = Port 1 ○ 01 = Port 2 ○ 1x = Reserved ○ This value is static for single-port devices and dynamic for dual port devices. ● Bits 3:2 - 00 = Reserved ● Bits 1:0 - Port state (dynamic)* ○ 00 = Unconfigured (new device) ○ 01 = Configured ○ 1x = Reserved
11:30	20	N	Port name. UTF8 string.*

* These fields are port-specific and contents will change to reflect the respective data for the current the port index

Multiport devices switch the contents of the scan response messages every 500ms so that one message contains Port 1 data and the next contains Port 2 data and so on. The fields marked with an asterix (*) above are port-specific. Their contents will change to reflect the state of the port index.

Example - Single port device scan response message:

1effffff49ef138802e20153696e676c6520506f72740000000000000000000

- Keg size = 0x49EF = 18927mL = 5.00 gal
- Volume start = 0x1388 = 5000mL = 1.32gal
- Volume dispensed = 0x2E2 = 738mL = 0.19gal
- Port count = 1
- Port index = 1
- Device state = configured
- Port name = "Single Port"

Example - Dual port device, port 1 scan response message:

1effffffc350c35032c841506f727420310000000000000000000000000000000

- Keg size = 0xC350 = 50000mL = 13.21gal
- Volume start = 0xC350 = 50000mL = 13.21gal
- Volume dispensed = 0x32C8 = 13000mL = 3.43gal
- Port count = 2
- Port index = 1
- Device state = configured
- Port name = "Port 1"

Example - Dual port device, port 2 scan response message:

1effffff49ef138802e251326e6420506f72740000000000000000000000000000

- Keg size = 0x49EF = 18927mL = 5.00 gal
- Volume start = 0x1388 = 5000mL = 1.32gal
- Volume dispensed = 0x2E2 = 738mL = 0.19gal
- Port count = 2
- Port index = 2
- Port state = configured
- Port name = "2nd Port"