

AROCO R120 MQTT message specifications v1.0

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1. Topic format

Starts with “iotdata” by default, configurable on R120

device-id is MAC by default, configurable on R120

R120 → Server MQTT handler

iotdata/event/device-id

e.g. iotdata/event/5CCF8AABCDEF

Server MQTT handler → R120

iotdata/device/device-id

e.g. iotdata/device/5CCF8AABCDEF

2. JSON Message format

Common Keys

ts : Unix timestamp

ms : Millisecond (only in detect, lost, and report events)

event : Event type, can be “connect”, “keepalive”, “detect”, “lost”, “report”

“connect” event Keys

ver : Version number of R120 firmware

scan_int_m : Scan interval in minutes (reserved for power saving mode)

exp_s : Expiry time in seconds for detect mode for lost events

types : Bit mask for beacon types to report (2: ibeacon format only, 3: ibeacon format and other raw beacon)

flags : Operation flags (0: normal scanning, 1: coded phy scanning, 2: Report Mode with normal scanning, 3: Report Mode with coded phy scanning)

min_rssi : Minimum RSSI value to be considered valid entry (reserved)

“keepalive” event Keys

No extra keys, only common keys

“detect” and “report” event Keys

phy : BLE PHY type, normal or coded

rssi : RSSI

ch_index : Channel index

ref : Reference, requires sending back the ref from server MQTT handler to remove the entry from R120 send queue, e.g. { “ref”:3050 } to clear ref 3050

mac : MAC

raw : for Raw type reports, contains the received advertisement bytes in hex format

ibeacon : for iBeacon type reports

“ibeacon” data Keys

uuid : 128 bit UUID

major : Major

minor : Minor

rssi1m : Reference RSSI at 1M

manu : Manufacturer code

“lost” event Keys

phy : BLE PHY type, normal or coded

dur_s : Duration before lost in seconds

ref : Reference, requires sending back the ref from server MQTT handler to remove the entry from R120 send queue, e.g. { “ref”:3050 } to clear ref 3050

mac : MAC

raw : for Raw type reports, contains the received advertisement bytes in hex format

ibeacon : for iBeacon type reports

“ibeacon” data Keys

uuid : 128 bit UUID

major : Major

minor : Minor

rssi1m : Reference RSSI at 1M

manu : Manufacturer code

3. Examples

“connect” event

```
{"ts":1614677710,"event":"connect","ver":54,"scan_int_m":0,"exp_s":60,"types":2,"flags":0,"min_rssi":0}
```

“keepalive” event

```
{"ts":1614677770,"event":"keepalive","phy":"normal"}
```

“detect” event

```
{"ts":1621262085,"ms":123,"event":"detect","phy":"normal","rssi":-57,"ch_index":37,"ref":1909,"mac":"FCE9DDA49311","ibeacon":{"uuid":"4444303030312E2E2E2E2E2E2E2E2E2E2E2E2E2E2E2E","major":36864,"minor":0,"rssi1m":-65,"manu":76}}
```

“lost” event

```
{"ts":1621262120,"ms":456,"event":"lost","phy":"normal","dur_s":5,"ref":1910,"mac":"FCE9DDA49311","ibeacon":{"uuid":"4444303030312E2E2E2E2E2E2E2E2E2E2E2E2E2E2E2E","major":36864,"minor":0,"rssi1m":-65,"manu":76}}
```

“report” event

```
{"ts":1621262145,"ms":789,"event":"report","phy":"normal","rssi":-57,"ch_index":37,"ref":1911,"mac":"FCE9DDA49311","ibeacon":{"uuid":"4444303030312E2E2E2E2E2E2E2E2E2E2E2E2E2E2E2E","major":36864,"minor":0,"rssi1m":-65,"manu":76}}
```