

greenerthumb ICD

- Timestamps are 8-byte unix timestamps.
- Checksums are cyclic sums of all of a message's bytes excluding the checksum.
- Multi-byte fields are big-endian.
- All messages are newline-terminated across the network for simplicity.

Air Status Message (pub/sub)

| Byte | Name | Type |
|------|-------------|-------|
| 1 | ID (0x00) | Byte |
| 2 | Timestamp | Long |
| 10 | Temperature | Float |
| 14 | Checksum | Byte |

- Temperature is in degrees fahrenheit.

Soil Status Message (pub/sub)

| Byte | Name | Type |
|------|-----------|-------|
| 1 | ID (0x01) | Byte |
| 2 | Timestamp | Long |
| 10 | Moisture | Float |
| 14 | Checksum | Byte |

- Moisture is the ratio of water to soil.

Disclosure Message (Broadcast on port 35053 by default)

| Byte | Name | Type |
|----------------|-------------------------|---------------|
| 1 | ID (0x02) | Byte |
| 2 | Timestamp | Long |
| 10 | Device Name Length (l) | Byte |
| 11 | Device Name | Byte Sequence |
| 11 + l | Publish Host Length (m) | Byte |
| 11 + l + 1 | Publish Host | Byte Sequence |
| 11 + l + 1 + m | Command Host Length (n) | Byte |

| Byte | Name | Type |
|--------------------------|--------------|---------------|
| $11 + l + 1 + m + 1$ | Command Host | Byte Sequence |
| $11 + l + 1 + m + 1 + n$ | Checksum | Byte |

- Device name is the name of the device.
- Publish host is the host the device publishes to.
- Command host is the host the device receives commands from.

JSON

JSON is used for internal messaging. Every message has a corresponding JSON format with the structure:

```
{
  "name": <message_name>,
  "timestamp": <timestamp>,
  <name>: <value>, ...
}
```

IDs are swapped with names for friendlier use in applications. Checksums are excluded since the messages don't need to be sent over a network. Names and values correspond to the non-ID, non-time, and non-checksum fields in the messages.