

# C200 Data Integration

## Transport and Logistics March 2023



C200 provides a platform for capturing recording and sending operational data in Transport and Logistics environments. Its implemented in three typical use cases:

- Revenue Protection to ensure carriers and operators are capturing accurate dimensions and using them in billing processes.
- Master data management in goods receiving, warehousing and WMS.
- Shipping for accurate capture of dimensions and weight in outbound shipping process.

C200 can be configured to integrate in a wide variety of operating environments. This overview summarises the key points from a data integration perspective.

### COMMUNICATIONS

Initial release of C200 allows users to connect using one of the following:

- Bluetooth Direct Mode (HID)
- Bluetooth Application Mode (SPP)
- Bluetooth Low Energy (BLE)
- USB-HID connection over 2.4G wireless (requires dongle)
- USB-COM serial connection over 2.4G wireless (requires dongle)

Subsequent C200 release will offer Wifi connectivity.

#### **C200 ships with two other pairing utilities to simplify the pairing process:**

NFC Pairing is initiated when a user brings the NFC Reader of their mobile device into close proximity with the C200 scan head. Follow the Android prompts to complete pairing.

Scan to Pair initiates pairing when C200 scans a pairing barcode displayed on the mobile device screen. This option may need to be co-ordinated with 3rd party software vendors.

The Bluetooth friendly name is set to C200-1234567, where "1234567" is the 7 digit device serial number. Developers and integrators can use the friendly name to capture the device serial number.

### DATA OPTIONS AND OUTPUT PACKETS

C200 decodes and outputs two distinct types of data:

- General items including ConNotes, Probills, AWBs, SKUs, Customer, Order or Location data.
- Dimensional items such as Length, Width and Height.

### GENERAL ITEMS

These are scanned and sent in a simple packet as follows:

#### **<P1> DATA <S1>**

**<P1>** is an optional prefix used to indicate data is general rather than dimensional. We use the ASCII character **^ (0x5E)** to denote the data type General, and this can be used in application design to assist with completion of screen based inputs.

**DATA** is the general payload, and this can be managed as part of the device scan engine configuration. (For example the engine can be configured to accept Code128 symbology codes with length between 16 and 20 characters only).

**S1** is a programmable suffix used with General data. Its usually CR or TAB, but can be programmed to accept other ASCII characters or CTRL characters if required.

### DIMENSIONAL ITEMS

There are several options and packet types available for sending Dimensional data items:

#### **1DIM (1 Dimension at a time)**

This is equivalent to the general item packet type:

#### **<P2>LENGTH<S2>**

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**<P2>** is an optional prefix used to indicate data is dimensional rather than general. We use the ASCII character ~ (0x7E) to denote the data type Dimensional, and this can be used in application design to assist with completion of screen based inputs.

**LENGTH** is the dimension payload, and this can be configured in the C200 configuration. Units and precision can be set using one of the following options:

Units	Precision	Measurement	C200 Output
inches (in)	Tenths	10.3 in	10.3
	Halves		10.5
	Nearest 1		10
	Next 1		11
millimetres (mm)	Nearest	424 mm	424
centimetres (cm)	Tenths	42.4 cm	42.4
	Halves		42.5
	Nearest 1		42
	Next 1		43
metres (m)	Nearest cm	1.265 m	1.26

**S2** is a programmable suffix used with Dimensional data. It's usually **CR** or **TAB**, but can be programmed to accept other ASCII characters or CTRL characters if required.

**Note:** **S1** (General Suffix) and **S2** (Dimensional Suffix) can be different.

### 3DIM (3 Dimensions at a time)

This option allows the grouping of length, width and height in a single packet:

**<P2>LENGTH<s>WIDTH<s>HEIGHT<S2>**

Definitions of prefix, payloads and suffix are carried forward from 1DIM packet.

**<s>** is a configurable spacer to delineate between the 3 dimensional payloads.

Standard configuration guide allows usage of 'x' or 'X' as a separator.

Alternative characters such as ',' or ';' can be provided and configured on request.

### 3DIM+ (3 Dimensions plus control info)

This option allows the grouping of length, width and height along with control information in a single packet:

**<P2>LENGTH<s>WIDTH<s>HEIGHT<CRC><s>UNITS<s>SERIAL#<S2>**

Definitions of prefix, payloads, suffix and separator are carried forward from 1DIM and 3DIM packet.

**<CRC>** is a checksum of string from prefix to height.

**UNITS** shows and attaches to the packet the units in use.

**SERIAL#** attaches the device serial number to the packet.

### ADDITIONAL FORMAT OPTIONS

C200 can support an additional prefix and suffix for both General Items and Dimensional Items if required.