

SPECIFICATION

Customer : _____

Customer's Model No. : _____

Model No. : **FI710 IP65**

Area Imager Fixed-mount bar code scanner

Date : _____

Spec. Version & Revision Date: **E01-Preliminary** 2015.08.17

| Received/Approved by |
|----------------------|
| |



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Revision History

| Version | Date | Context |
|---------|------------|---------------------|
| E00 | 2015.04.08 | Preliminary release |
| E01 | 2015.08.17 | IP54 update to IP65 |

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A. General Description

The FI710 is equipped with ultra-compact high performance 2D area imager bar code scanning engine, ideal for OEM applications in devices including POS, medical devices, kiosks, lottery terminals and access control devices, a stand option can be ordered to facilitate desktop hand-free reading options.

The FI710 supports with up to 500mm reading depth of 1D and 2D bar codes, scan rate is up to 120 scans per second in linear emulation and 60 images per second in 2D area mode. It combines decode speed with unmatched motion tolerance to deliver an easy to use scanner with aggressive performance and offers uncompromised performance on current linear barcodes' applications, it can emulate the operation as a linear imagers with scan rates up to 120 scans per second when decodes linear barcodes, which is more than three times faster than traditional 2D imagers.

Everything has been done to simplify the integration of the FI710, compact size, multiple mounting possibilities and multiple interfaces selection, such as standard RS232 & USB-HID and USB Virtual COM port.

The FI710 is built to match the most demanding scanning requirements, providing consistent scanning performance in total darkness to full sunshine and over a large temperature range.

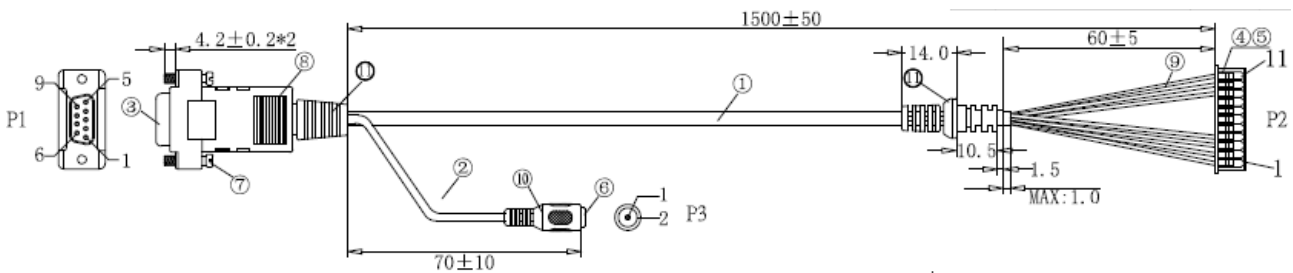
B. Physical Characteristics

| | |
|-------------------|-----------------------------------|
| Weight | |
| Body weight | Approx. 108 g |
| Cable weight(USB) | Approx. 40 g |
| Material | |
| | ABS/PC+Metal |
| Cable Length | 5FT. (150cm) |
| Dimension | |
| | 59.2 mm W x 64.6 mm D x 30.0 mm H |

1) Cable drawing

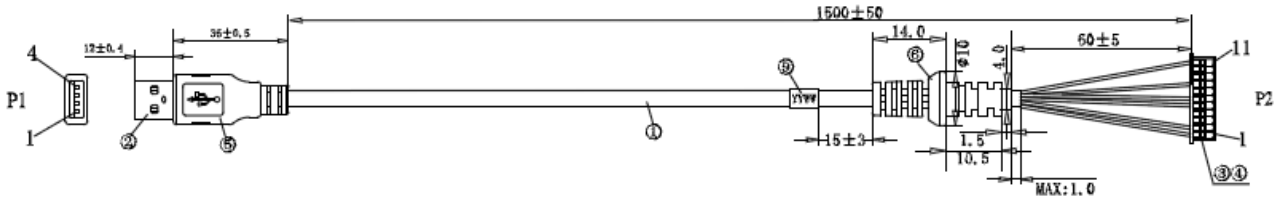
Unit : mm

(1) RS232



| Pin Item | | | | | Description |
|--------------|--------------|----|-------|----|-------------|
| P1 | Color | P2 | Color | P3 | |
| 9 | Red | 2 | Red | 1 | VCC, +5V |
| 3 | Yellow | 4 | | | RXD |
| 2 | Orange | 3 | | | TXD |
| 5 | Brown | 1 | Brown | 2 | GND |
| 8 | Green | 9 | | | RTS |
| 7 | Blue | 10 | | | CTS |
| steel casing | wire-winding | 11 | | | SHIELDING |

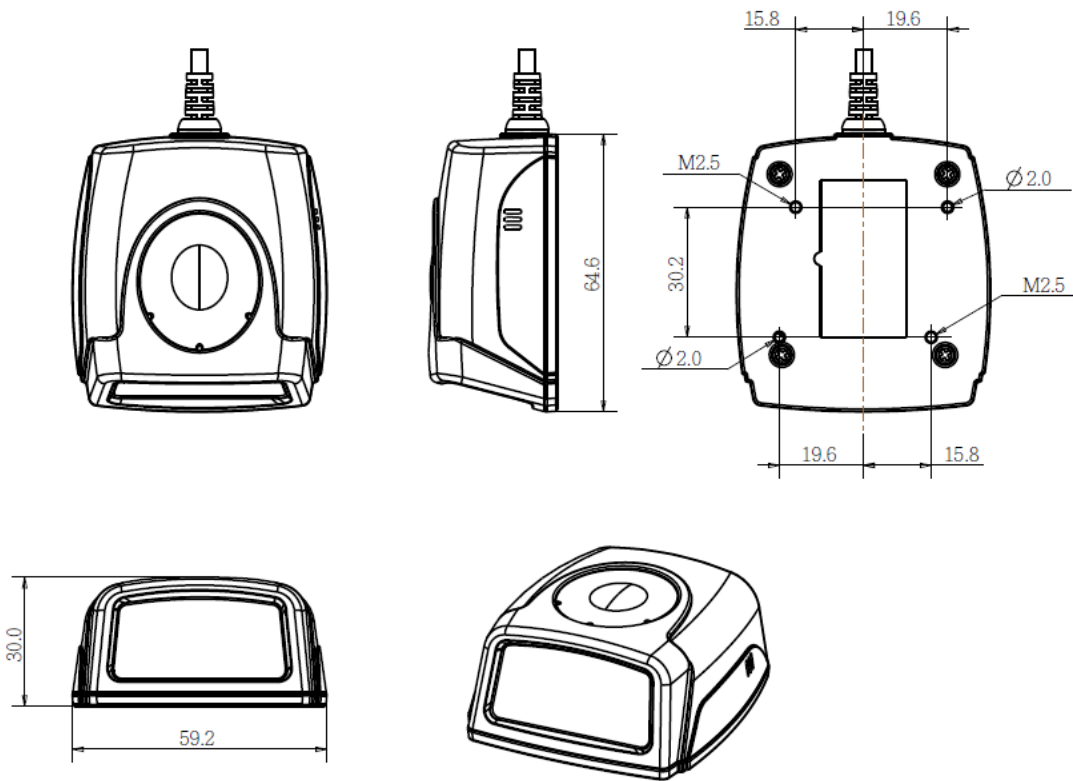
(2) USB(Virtual COM port)



| Pin Item | | | Description |
|--------------|--------------|-----|-------------|
| P1 | Color | P2 | |
| 1 | Red | 2,8 | VCC |
| 2 | Blue | 6 | D- |
| 3 | Green | 5 | D+ |
| 4 | Brown | 1 | GND |
| steel casing | wire-winding | 11 | SHIELDING |

2) Mechanical drawing

Unit : mm

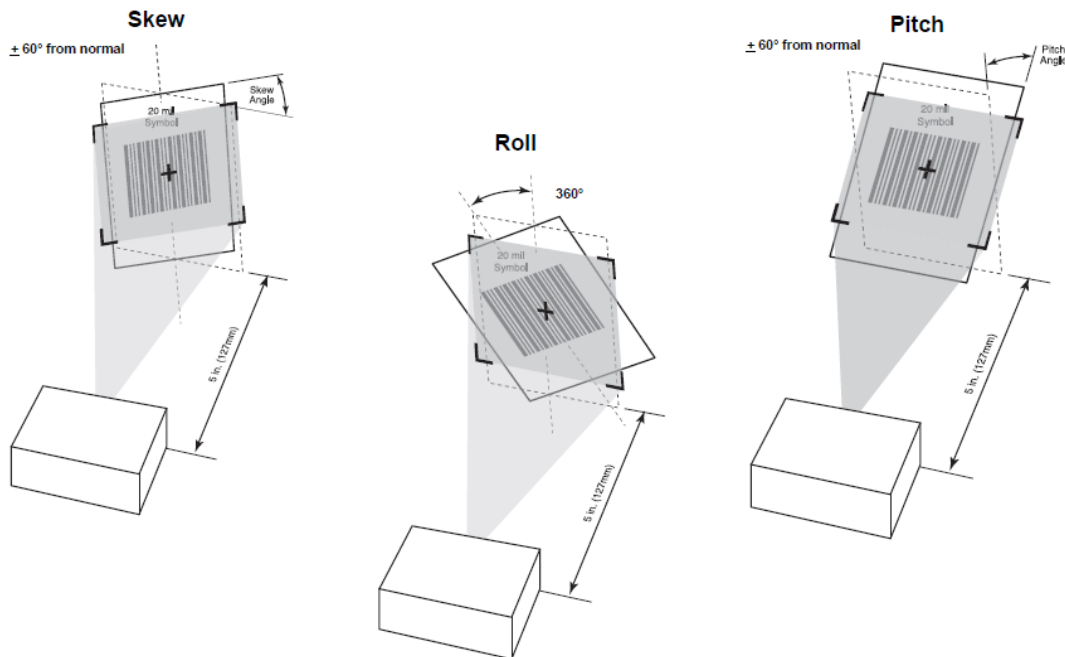


C. Electrical Characteristics

| Interface | RS232 | USB-HID (or Virtual COM port) |
|------------------|------------|----------------------------------|
| | DC Adaptor | USB Power |
| Supply Voltage | DC +5V±5% | |
| Current Draw | ±10% | |
| Stand by (Typ.) | 50mA | 50mA |
| Operation (Typ.) | 280mA | 280mA |

D. Performance

| | |
|--------------|--|
| Light source | Visible red light 625nm LED |
| Resolution | 752 (H) x 480 (V) pixels Horizontal - 40°, Vertical - 25° |
| Pitch | ±60° (from front to back) |
| Skew | ±60° (from plane parallel to symbol (side- to-side)) |
| Roll | 360° |
| Interface | RS-232, USB (Virtual COM) |
| Indicators | Good read beep (Green Light) |



E. Reading Range

The following table summarizes the reading distance for the specified codes with both the wide area field and the high density field enabled and active for decoding.

| Focus Range | Near | Far |
|-------------------|-----------------------|------------------|
| 5.0 mil Code 39 | 1.9 in./4.7 cm | 7.7 in./19.4 cm |
| 20 mil Code 39 | Field of view limited | 24.0 in./60.9 cm |
| 6.67 mil PDF417 | 2.7 in./6.8 cm | 7.0in./17.9 cm |
| 15 mil PDF417 | Field of view limited | 13.2 in./33.5 cm |
| 10 mil Datamatrix | Field of view limited | 8.3 in./21.0 cm |
| 13 mil 100% UPC | 2.8 in./7.2 cm | 16.8 in./42.4 cm |

| Code Type | Density | Bar Code Description | Range | Typical | | Guaranteed | |
|-----------|----------|----------------------|-------|---------|------|------------|------|
| | | | | Inch | cm | Inch | cm |
| Code 39 | 3 mil | STI3025 | Near | 2.5 | 6.5 | 2.9 | 7.4 |
| | | | Far | 4.9 | 12.5 | 4.3 | 10.9 |
| | 4 mil | STI4026 | Near | 1.9 | 4.9 | 2.3 | 5.7 |
| | | | Far | 7.2 | 18.3 | 6.9 | 17.5 |
| | 5 mil | ABCDEFGH | Near | 1.5 | 3.8 | 1.9 | 4.7 |
| | | | Far | 8.2 | 20.8 | 7.7 | 19.4 |
| | 7.5 mil | ABCDEF | Near | Note 1 | | | |
| | | | Far | 11.3 | 28.6 | 10.9 | 27.6 |
| | 10 mil | ABCDE | Near | Note 1 | | | |
| | | | Far | 14.3 | 36.3 | 13.2 | 33.6 |
| | 20 mil | 123 | Near | Note 1 | | | |
| | | | Far | 25.8 | 65.6 | 24.0 | 60.9 |
| 60% UPC | 7.8 mil | 12345678905 | Near | 1.1 | 2.9 | 1.5 | 3.8 |
| | | | Far | 10.5 | 26.6 | 9.5 | 24.2 |
| 80% UPC | 10.4 mil | 12345678905 | Near | 1.5 | 3.8 | 2.2 | 5.7 |
| | | | Far | 13.3 | 33.8 | 12.3 | 31.1 |
| 100% UPC | 13 mil | 12345678905 | Near | 1.9 | 4.9 | 2.8 | 7.2 |
| | | | Far | 17.5 | 44.4 | 16.8 | 42.6 |

Note 1: Near distance is Field of View (FOV) limited.

| Code Type | Density | Bar Code Description | Range | Typical | | Guaranteed | | |
|-----------|------------|-------------------------|-------------------------|---------|--------|------------|------|------|
| | | | | Inch | cm | Inch | cm | |
| Code 128 | 5 mil | C128 MOT | Near | 2.1 | 5.3 | 2.4 | 6.1 | |
| | | | Far | 6.2 | 15.7 | 5.7 | 14.4 | |
| | 20 mil | 20MIL C128 | Near | Note 1 | | | | |
| | | | Far | 23.3 | 59.1 | 21.2 | 54.0 | |
| I 2 of 5 | 10 mil | 1234567897 | Near | Note 1 | | | | |
| | | | Far | 14.3 | 36.4 | 13.7 | 34.9 | |
| PDF417 | 5 mil | x.005y.0150 | Near | 3.1 | 7.8 | 3.5 | 8.9 | |
| | | | Far | 5.5 | 13.9 | 5.0 | 12.8 | |
| | 6.67 mil | x.0066y.0200 | Near | 2.2 | 5.5 | 2.7 | 6.8 | |
| | | | Far | 7.5 | 19.1 | 7.0 | 17.9 | |
| | 10 mil | x.0100y.0300 | Near | Note 1 | | | | |
| | | | Far | 10.3 | 26.1 | 9.8 | 25.0 | |
| | 15 mil | x.0150y.0450 | Near | Note 1 | | | | |
| | | | Far | 14.4 | 36.6 | 13.2 | 33.5 | |
| | Datamatrix | 5 mil | 1234567890 (6 times) | Near | 3.4 | 8.6 | 3.7 | 9.5 |
| | | | | Far | 4.3 | 10.9 | 3.5 | 8.8 |
| 7.5 mil | | 1234567890 (6 times) | Near | 2.4 | 6.1 | 2.9 | 7.4 | |
| | | | Far | 6.8 | 17.3 | 6.2 | 15.8 | |
| 10 mil | | 1234567890 (6 times) | Near | Note 1 | | | | |
| | | | Far | 8.9 | 22.7 | 8.3 | 21.0 | |
| 15 mil | | 1234567890 (6 times) | Near | Note 1 | | | | |
| | | | Far | 12.1 | 30.6 | 11.5 | 29.3 | |
| QR Code | | 10 mil | 1234567890 (6 times) | Near | Note 1 | | | |
| | | | | Far | 7.4 | 18.8 | 6.9 | 17.7 |

Note 1: Near distance is Field of View (FOV) limited.

| Code Type | Density | Bar Code Description | Range | Typical | | Guaranteed | | |
|-----------|------------|-------------------------|-------------------------|---------|--------|------------|------|------|
| | | | | Inch | cm | Inch | cm | |
| Code 128 | 5 mil | C128 MOT | Near | 2.1 | 5.3 | 2.4 | 6.1 | |
| | | | Far | 6.2 | 15.7 | 5.7 | 14.4 | |
| | 20 mil | 20MIL C128 | Near | Note 1 | | | | |
| | | | Far | 23.3 | 59.1 | 21.2 | 54.0 | |
| I 2 of 5 | 10 mil | 1234567897 | Near | Note 1 | | | | |
| | | | Far | 14.3 | 36.4 | 13.7 | 34.9 | |
| PDF417 | 5 mil | x.005y.0150 | Near | 3.1 | 7.8 | 3.5 | 8.9 | |
| | | | Far | 5.5 | 13.9 | 5.0 | 12.8 | |
| | 6.67 mil | x.0066y.0200 | Near | 2.2 | 5.5 | 2.7 | 6.8 | |
| | | | Far | 7.5 | 19.1 | 7.0 | 17.9 | |
| | 10 mil | x.0100y.0300 | Near | Note 1 | | | | |
| | | | Far | 10.3 | 26.1 | 9.8 | 25.0 | |
| | 15 mil | x.0150y.0450 | Near | Note 1 | | | | |
| | | | Far | 14.4 | 36.6 | 13.2 | 33.5 | |
| | Datamatrix | 5 mil | 1234567890 (6 times) | Near | 3.4 | 8.6 | 3.7 | 9.5 |
| | | | | Far | 4.3 | 10.9 | 3.5 | 8.8 |
| 7.5 mil | | 1234567890 (6 times) | Near | 2.4 | 6.1 | 2.9 | 7.4 | |
| | | | Far | 6.8 | 17.3 | 6.2 | 15.8 | |
| 10 mil | | 1234567890 (6 times) | Near | Note 1 | | | | |
| | | | Far | 8.9 | 22.7 | 8.3 | 21.0 | |
| 15 mil | | 1234567890 (6 times) | Near | Note 1 | | | | |
| | | | Far | 12.1 | 30.6 | 11.5 | 29.3 | |
| QR Code | | 10 mil | 1234567890 (6 times) | Near | Note 1 | | | |
| | | | | Far | 7.4 | 18.8 | 6.9 | 17.7 |

Note 1: Near distance is Field of View (FOV) limited.

F. Readable Symbologies

| 1D Symbologies | Readable | Default Enable |
|-----------------|----------|----------------|
| EAN/UPC | V | V |
| UCC/EAN128 | V | V |
| ISBN | V | |
| ISBT | V | |
| Code 11 | V | |
| Code 39 | V | V |
| Code 93/93i | V | |
| Code 128 | V | V |
| Interleaved | V | |
| Matrix | V | V |
| Instustrial | V | |
| Standard 2 of 5 | V | |
| Codabar | V | |
| MSI | V | |
| Plessey | V | |
| Telepen | V | |
| Postal codes | V | |
| GS1 DataBar | V | V |

| 2D Symbologies | Readable | Default Enable |
|---------------------|----------|----------------|
| Data Matrix | V | V |
| Data Matrix Inverse | V | |
| PDF 417 | V | V |
| Micro PDF 417 | V | |
| Maxicode | V | |
| QR code | V | V |
| QR code Inverse | V | |
| Aztec (& Inverse) | V | V |
| EAN.UCC composite | V | |
| MicroQR code | V | V |

G. Environmental

| | |
|-------------------|--|
| Operating Temp. | -10°C to 50°C |
| Storage Temp. | -20°C to 70°C |
| Relative Humidity | 5% to 95% (Non-condensing) |
| Ambient light | Works in any lighting conditions from 0 to 100,000 lux |

H. Reliability

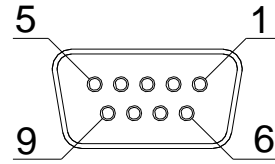
| | |
|--------------------|--|
| Life Time | |
| MTBF(Calculated) | 50,000 hours |
| Temp. Test | |
| High Temp. | 70°C; 48 H |
| Low Temp. | -20°C; 48H |
| Cable Bending Test | 25,000 times minimum (30 times/min @ 300g/90°) |
| Drop Test | 70.87 inches(180cm) drop on concrete 6 surface |

I. Pin Assignment

(a)RS232 Interface

DB 9 Female

| Pin No. | Function |
|------------|----------|
| 2 | TXD |
| 3 | RXD |
| 5 | GND |
| 7 | CTS |
| 8 | RTS |
| 9 | Vcc/+5V |
| Power Lead | Vcc/+5V |



(b)USB Interface

USB A Type Male

| Pin No. | Function |
|---------|----------|
| 1 | Vcc |
| 2 | D- |
| 3 | D+ |
| 4 | GND |

