# SPECIFICATION

Customer :

Item:

Model No. : **MCR14S**

Date :2018.02.26

Champtek P/N. :

Spec. Version & Revision Date:       V01       2018.02.26

File Name:

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

## Revision History

| Version | Date | Context |
|---------|------|---------|
| V00 | 2016.03.25 | Golden release |
| V01 | 2018.02.26 | Performance update |

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**Due to Champtek's / Scantech ID's continuing product improvement programs, specifications and features are subject to change without notice.**

# A. General Description

The MCR Series brings the benefits of bar code scanning to a variety of OEM devices.
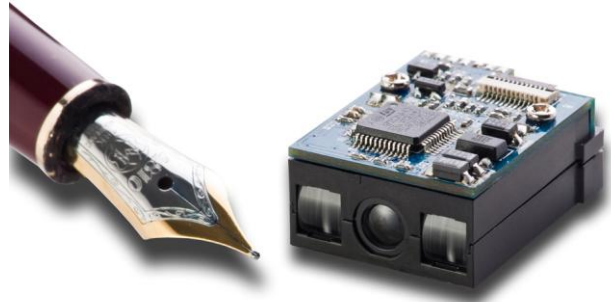
The MCR Series Scan Module is a perfect choice for your OEM design. The MCR Series brings the benefits of bar code scanning to all types of OEM devices. Now kiosks, medical instruments, diagnostic equipment, lottery terminals, vending machines and countless other appliances can all be equipped with the leading-edge scanning technology and reliability.

The MCR Series has been designed to provide the highest scanning performance in the smallest package possible. For added versatility, allowing for fast, cost-effective interchangeability when upgrading or modifying your OEM device for specialized applications.

MCR14S is a CMOS bar code decoding capabilities. MCR14S decode board is powered by a fast processor and to decode a wide array of 1D bar codes. The decode board is compatible with Utility, a PC-based software for easy Configuration.

The MCR14S is designed with the industrial standard size, mounting options and output to facilitate integration into existing applications. The Scanner module's miniature size makes MCR14S ideal for integration into data terminals and other small devices. MCR14S is supplied as an assembled module with a mounting bracket or as separate components for custom mounting.

**Pb-Free (RoHS Compliant).**
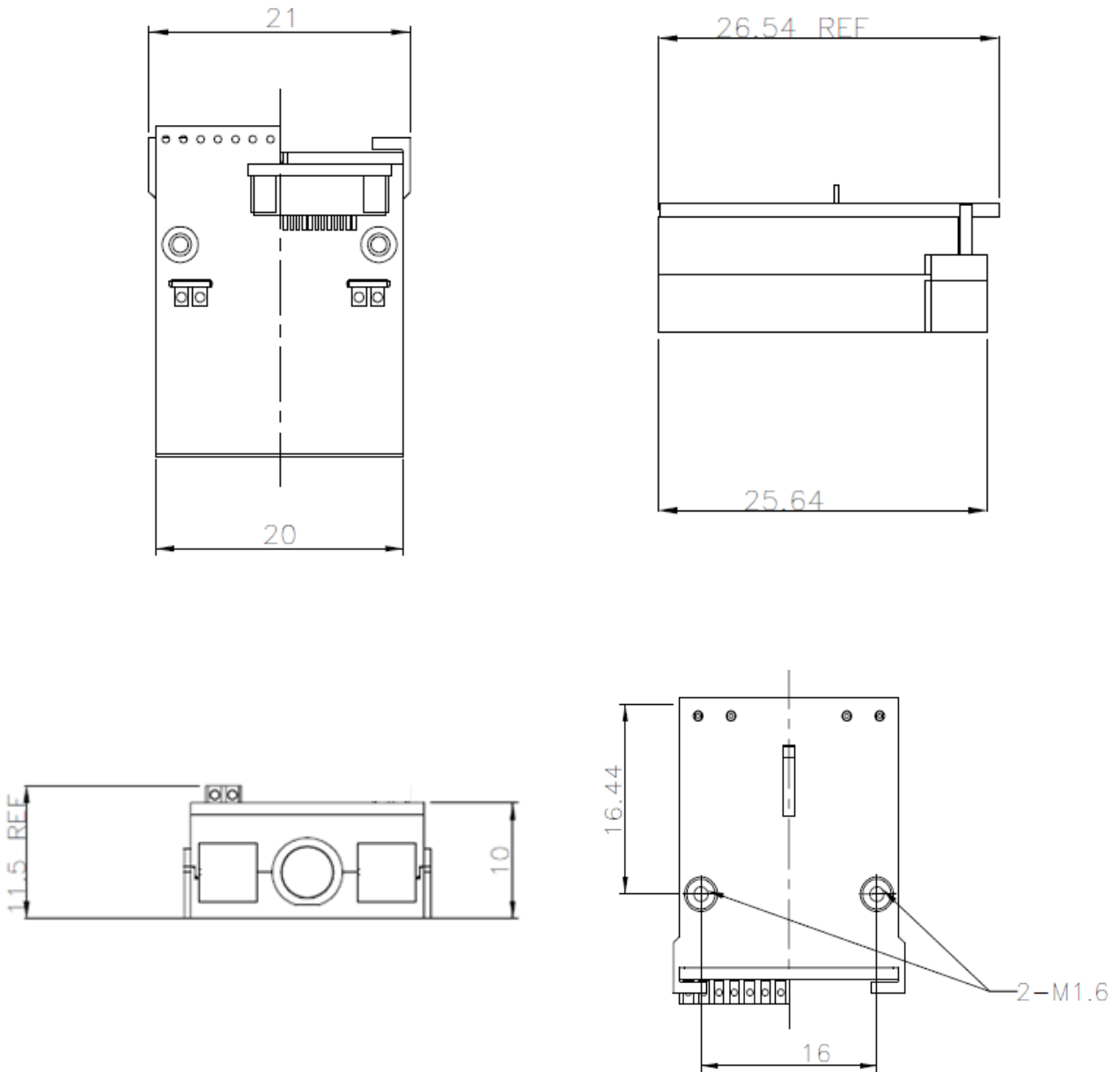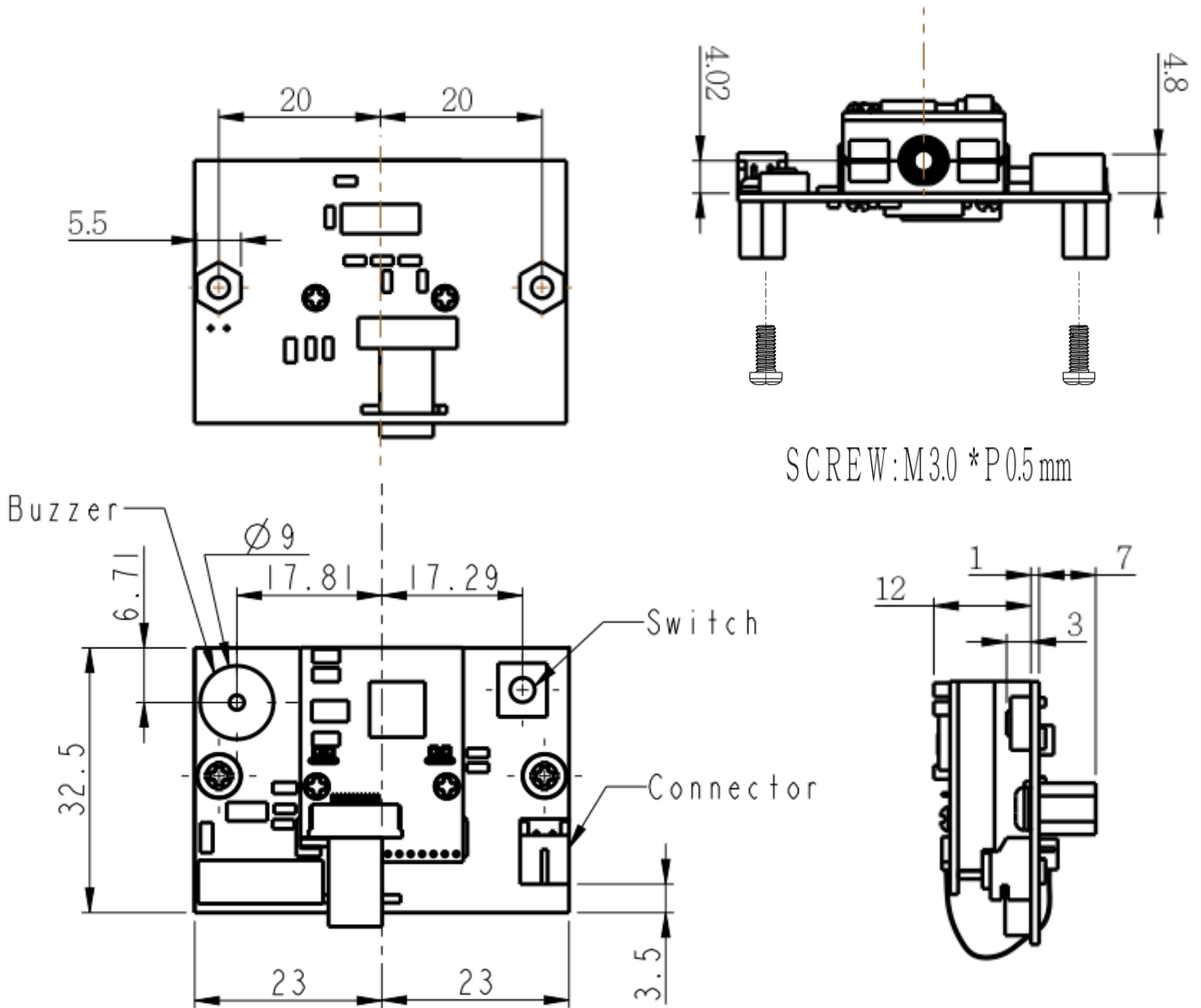
# B. Physical Characteristics

| Weight | |
|---|---|
| Body weight | Approx. 7g |
| Material | ABS+ Glass Reinforced Plastic |
| Connector | FPC 12pin Pitch 0.5 |
| Dimension | 20mm W x 11.5mm H x 25mm L |

## Mechanical drawing

Unit : mm

## C. Electrical Characteristics

| Interface | RS232 TTL | USB |
|---|---|---|
| Supply Voltage | | DC +5V ±5% |
| Output Voltage (Typ.) | | +5V±5% |
| Output low Voltage (Max.) | | 0.7V |
| Current Draw | | ±10% |
| Power On (Typ.) | 170mA | 170mA |
| Stand by (Typ.) | 50mA | 50mA |
| Operation (Typ.) | 150mA | 150mA |

## D. Performance

| | |
|---|---|
| Light Source | Visible Red light 632nm LED |
| Sensor | Linear CMOS Sensor |
| Processor Type | 32-bit |
| Operating Freq. | 8 MHz (Internal) |
| Scan Rate | Smart detection, up to 100 scans per second |
| Reading Distance | Up to 250mm@20mil/0.5mm, PCS90% |
| Print Contrast Ratio | 25% |
| Resolution | 4mil/0.1mm@PCS90% |
| Indicator | Beep |

| | |
|---|---|
| Reading Angle | *Test Conditions : Code 39, 10mil/0.25mm,PCS90%* |
| Pitch Angle | 5°~60° (±5°) |
| Skew Tolerance | 5°~60° (±5°) |
| Ambient Light | 10,000 Lux Max. |

## E. Environmental

| | |
|---|---|
| Operating Temperature | 0 $^o$C to 50 $^o$C (32 $^o$F to 122 $^o$F) |
| Storage Temperature | -20 $^o$C to 70 $^o$C (-4 $^o$F to 158 $^o$F) |
| Relative Humidity | 20% to 95% (Non-condensing) |

# F. Readable Symbologies

|  | Readable | Default Enable |
| --- | --- | --- |
| All UPC/EAN/JAN | V | V |
| EAN128 Code | V |  |
| Code 39 | V | V |
| Code 39 Full ASCII | V |  |
| Code32 / Italian Pharmacy | V |  |
| Code 128 | V | V |
| CODABAR/NW7 | V | V |
| Interleave 25 | V | V |
| Industrial 25 | V |  |
| MSI/PLESSEY | V |  |
| Code 93 | V |  |
| China Postage | V |  |
| GS1 DataBar | V |  |

# G. Decoder Data Output Connector

| Type | FPC 12pin Pitch 0.5 |
|---|---|
| Pin No. | Function |
| 1 | TG |
| 2 | AIM WAKEUP(Reserved) |
| 3 | GREEN LED |
| 4 | BZ |
| 5 | POWER DOWN(Reserved) |
| 6 | RTS |
| 7 | CTS |
| 8 | TXD (D+) |
| 9 | RXD (D-) |
| 10 | GND |
| 11 | VCC |
| 12 | Reserved |
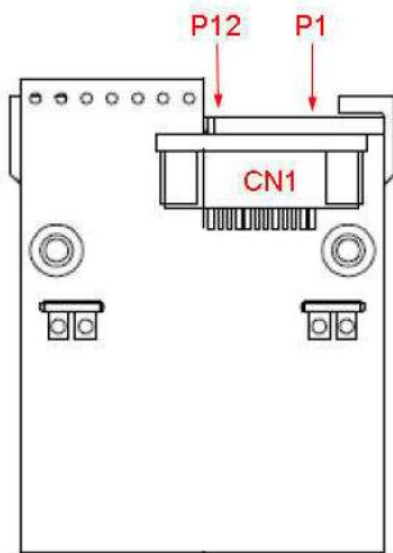
## H. Trigger Command

The RS-232 and USB Virtual COM command format for trigger is as following.
<STX> <TG> <ETX> <CHKSUM>
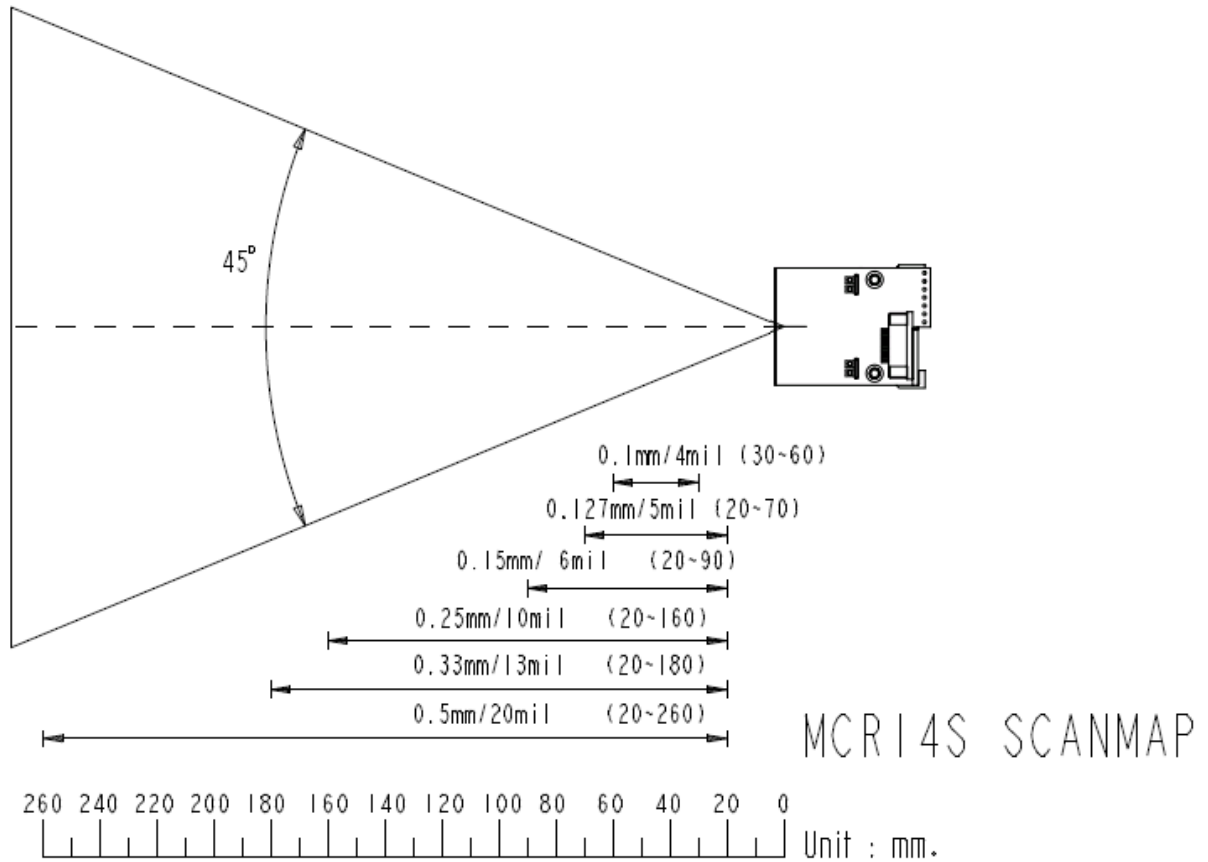   02    82      03         83     => HEX
Input 02820383 to trigger scanning.

The USB(HID) command format for trigger is as following.
CCCCC <STX> <TG> <ETX> <CHKSUM>
CCCCC  02    83    03         83    => HEX
Input CCCCC02830383 to trigger scanning.

## I. Scan Map



MCR14S SCANMAP

## J. Reliability

| Life Time | |
|---|---|
| Light Source | 40,000 hours |
| MTBF(Calculated) | 50,000 hours |
| Thermal Shock | |
| High Temp. | 60 $^o$C (140 $^o$F) |
| Low Temp. | -20 $^o$C (-4 $^o$F) |
| Cycle time | 30 minutes for high temp. , 30 minutes for low temp. |
| Cycles | 24 cycles |
| Mechanical Shock | 2000G, 0.7ms, 3 axes |