SPECIFICATION

Customer : _____

Customer's Model No. : _____

Model No. : **MIR4W 2D Barcode Reader Module** _____

Product P/N. : _____

Spec. Version & Revision Date: V03   2020/10/07

Received/Approved by

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Revision History

Version	Date	Context
V00	2018.08.24	Released
V01	2019.06.13	Update Performance
V02	2019.09.11	Update Scan Map
V03	2020.10.07	Add 30-pin PIN OUT definition

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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 MIR4W module is a high performance, omni-directional area imager bar code scanner. It uses digital imaging technology to provide intuitive and fast reading of 1D and 2D bar codes as well as supporting more advanced features like image capture deactivation. It is designed for various built-in and OEM solutions, such as self-service kiosks, POS (Point-of-Sales) terminals, ATM, price checkers, healthcare and Mobile device solutions etc.

It supports up to 300mm reading depth of 1D and 2D barcode with scan rate up to 60 images per second.. Various decoder boards are supported as option to comply with your application.
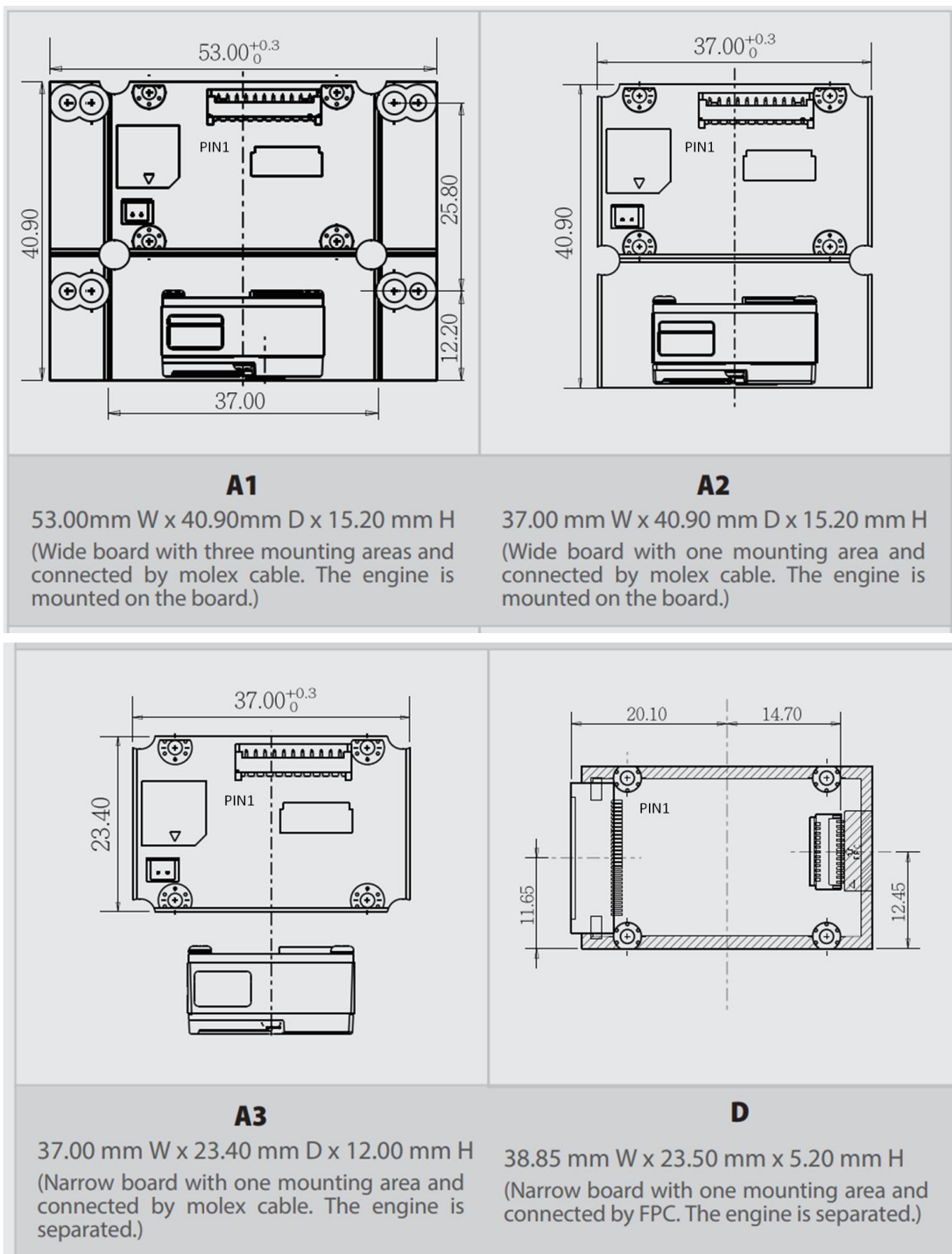
MIR4W Module is a high performance area imager scanner, provides customers with the most cost- effective solution in the market and perfectly suitable and definitely the best choice for any OEM and built-in application.
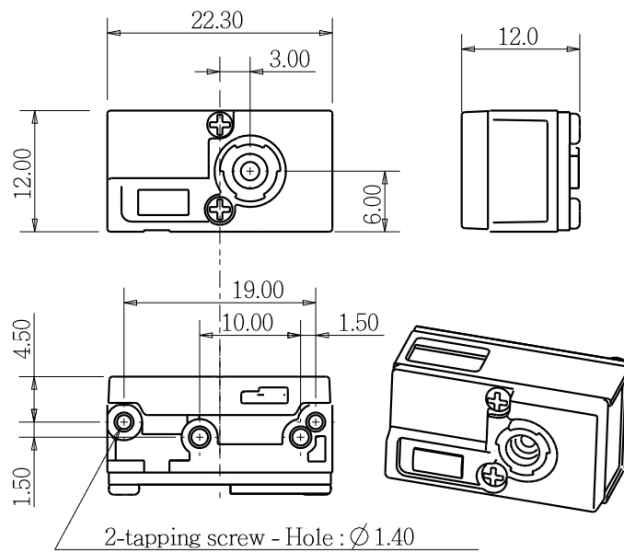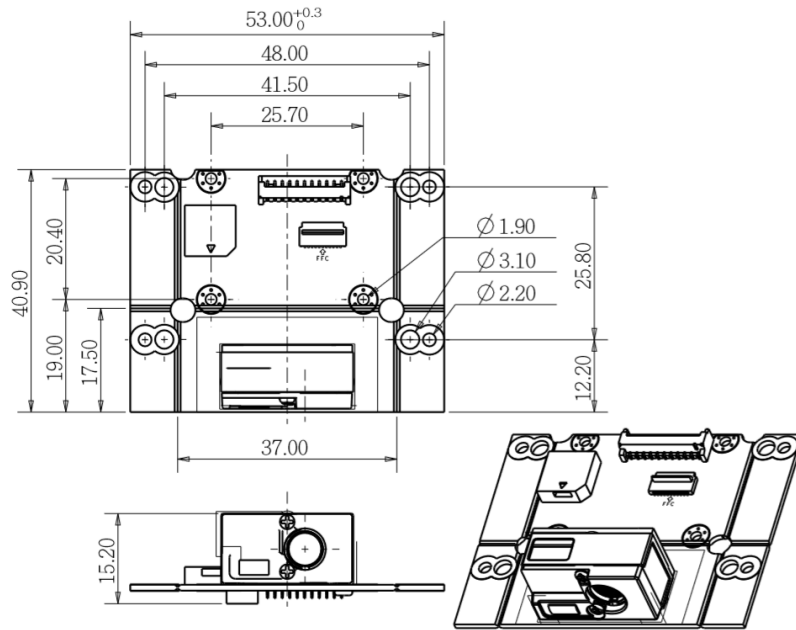
B. Physical Characteristics

Weight	
Body weight	Approx. 0.098 oz（2.8 g）
Material	Polycarbonate
Connector	11 pin Pitch 1.25
Dimension	53.0mm H x 40.9mm W x 14.9mm D

Mechanical drawing

Unit: mm

A1

53.00mm W x 40.90mm D x 15.20 mm H

(Wide board with three mounting areas and connected by molex cable. The engine is mounted on the board.)

A2

37.00 mm W x 40.90 mm D x 15.20 mm H

(Wide board with one mounting area and connected by molex cable. The engine is mounted on the board.)

A3

37.00 mm W x 23.40 mm D x 12.00 mm H

(Narrow board with one mounting area and connected by molex cable. The engine is separated.)

D

38.85 mm W x 23.50 mm x 5.20 mm H

(Narrow board with one mounting area and connected by FPC. The engine is separated.)

2-tapping screw - Hole : $\varnothing$ 1.40

C. Electrical Characteristics

Interface	USB/RS232
Supply Voltage	DC +5V ±5%
Stand by (Typ.)	40mA
Operation (Typ.)	380mA

D. Performance

Light Source	White light LED
Sensor	1280 (H) x 800 (V) pixels
Field of view	Horizontal – 55°, Vertical – 35°
Scan Rate	60 fps
Reading Distance	300mm@20mil/0.5mm, PCS90%
Print Contrast Ratio	PCS30%@5mil/0.127mm
Resolution	3mil/0.076mm@PCS90% Code39, 8mil/0.2mm@PCS90% QRCode
Reading Angle	*Test Conditions : Code 39, 10mil/0.25mm,PCS90%*
Pitch Angle	5°~60° (±5°)
Skew Tolerance	5°~60° (±5°)
Ambient Light	100,000 Lux Max.

E. Depth of field

Bar code	Depth of field
3mil Code39	60 ~ 100 mm
4mil Code39	55 ~ 110 mm
10mil Code39	50 ~ 220 mm
20mil Code39	50 ~ 300 mm
20mil QR Code	50 ~ 200 mm
20mil PDF417	50 ~ 120 mm

Note: the test is under ambient light 700 ~ 800 Lux.

Reading area
53x34
107x67
160x100
213x134

50
100
150
200
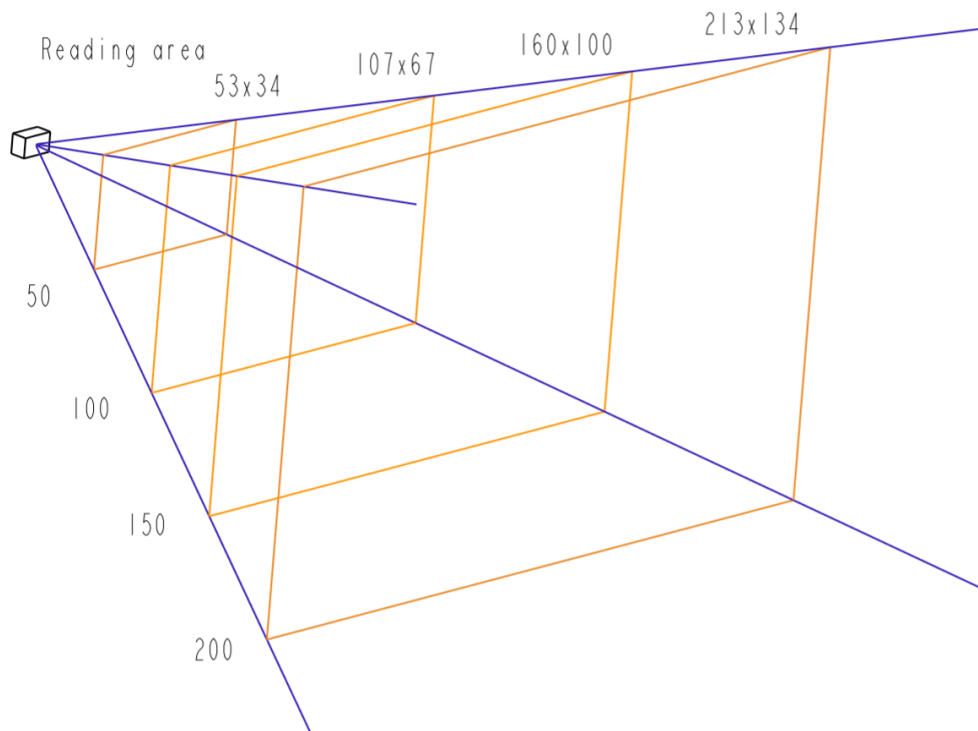
F. Environmental

Operating Temperature	0 ^{o}C to 50 ^{o}C (14 ^{o}F to 122 ^{o}F)
Storage Temperature	-20 ^{o}C to 70 ^{o}C (-4 ^{o}F to 158 ^{o}F)
Relative Humidity	5% to 95% (Non-condensing)

G. Readable Symbologies

1D Symbologies	Readable	Default Enable
UPC-A	V	V
UPC-E	V	V
EAN-8/JAN-8	V	V
EAN-13/JAN-13	V	V
Code 39	V	V
Code 128	V	V
Codabar/NW7	V	V
Interleaved 25	V	V
Industrial 25	V	
Matrix 25	V	
Code 93	V	
China Post	V	
Code 11	V	
MSI/Plessey	V	
Telepen	V	
GS1 Databar Omni-directional	V	
GS1 Databar Limited	V	
GS1 Databar Expended	V	
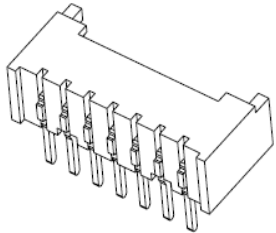
2D Symbologies	Readable	Default Enable
Aztec	V	
Data Matrix	V	V
PDF 417	V	V
Micro PDF 417	V	
QR Code	V	V
Micro QR Code	V	

H. PIN OUT DEFINITION

FOR A1~A3 Board (in B chapter)

11-PIN connector for connecting the MIR4W to a host

Pin No.	Function
1	GND
2	VCC
3	TXD
4	RXD
5	USB+
6	USB-
7	Trigger
8	ID
9	RTS
10	CTS
11	SHIELDING

FOR D Type Board (in B chapter)

30-PIN connector for connecting the MIR4W to a host

Signal Name	Description	Dir	Host Connector Pin	Control State
Reserved			1	
Reserved			2	
GND	System ground		3	
HOST_RXD	RS-232 receive	In	4	
HOST_TXD	RS-232 transmit	Out	5	
HOST_CTS	RS-232 Clear To Send control signal	In	6	
HOST_RTS	RS-232 Request To Send control signal	Out	7	
Reserved			8	
BEEPER_OUT	Pulse width modulated output used to control an external beeper	Out	9	
HOST_DEC_LED*	Active low output used to indicate a valid bar code decode	Out	10	L = Led On H = Led off
Reserved			11	
HOST_TRIGGER	Used to start a decode session	In	12	L = Start session H = Inactive
Reserved			13	
GND	System ground		14	
Reserved			15	
GND	System ground		16	
Reserved			17	
HOST_3P3	+3.3 V power supply	In	18	
Reserved			19	
Reserved			20	
Reserved			21	
GND	System ground		22	
HOST_USB_P	Positive differential data signal for the USB bus	In/ Out	23	
HOST_USB_N	Negative differential data signal for the USB bus	In/ Out	24	
GND	System ground		25	
HOST_5V	+5.0V power supply	In	26	
HOST_5V	+5.0V power supply	In	27	
Reserved			28	
Reserved			29	
Reserved			30	

I. Reliability

Life Time	
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