

CUSTOMER APPROVAL SHEET

Company Name	4SEILS Co., Ltd.
Product	VIVA Tag Series
Model	DP0750
CUSTOMER APPROVAL	

- ☐ **APPROVAL FOR SPECIFICATIONS ONLY (Spec. Ver. 1.4)**
- ☐ **CUSTOMER REMARK:**

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VIVA Tag Datasheet

VIVA Tag (Smart Electronic Information Label System)

REV 1.4

2026-06-18

Summary

This datasheet presents the general performance and specifications of VIVA Tag for ESL (Smart Electronic Information Label) System.

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Document History

REV	Date	Revision History	Page
1.0	11-Dec-23	Initial release	
1.1	24-Jun-24	Serial Number Revision, Address change	
1.2	02-Oct-24	DP1160 model added	
1.3	24-Nov-25	DP0350, DP0370, DP0579 model added	
1.4	18-Jun-26	Added FCC Compliance Statement	

1 General Description

VIVA Tag product is part of 4SEILS VIVA (Electronic Shelf Label) System, also consisting of VIVA Tag VIVA-AP (Gateway). The VIVA System electronically displays price, product, and promotion information on VIVA Tags, which has been traditionally printed or written on paper in places such as retail markets.

VIVA Tag wirelessly receives data from Gateway and updates the display with the new information provided.

VIVA Tag is based on 2.4Ghz General purpose RF for low power wireless communication applications. It consists of RF transceiver, RF circuitry and ARM Cortex M3, based network protocol, and MAC protocol and other peripheral devices.

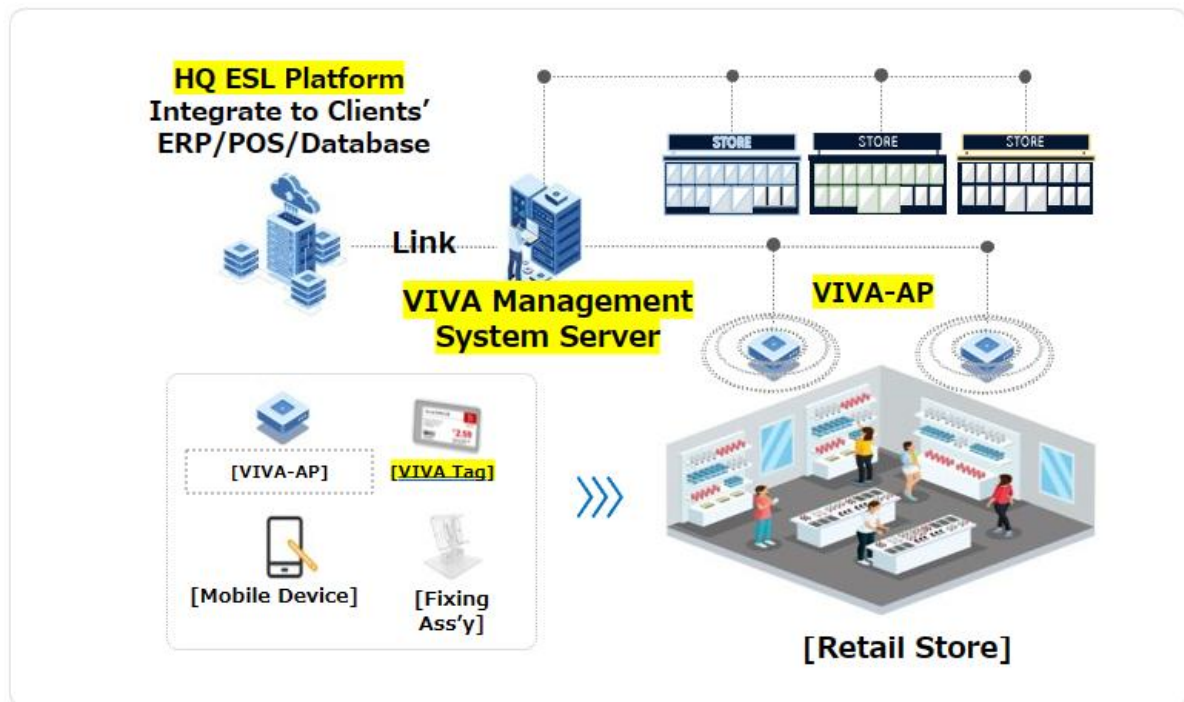


Figure 1. VIVA System

1.1 Features

- Display: E-Paper Display (EPD) Active Type : 1.50", 2.13", 2.66", 3.50", 3.70", 4.20", 5.79", 7.50", 11.60"
- Display Color: Mono type (Black, White), Red Color type (Black, White, Red), 4 Color type (Black, White, Red, Yellow)
- Communication: Uses proprietary RF technology operating on the 2.4GHz band
The 2.4GHz RF operates in the unlicensed ISM band
- Low Power Consumption
- Working Condition: Indoor where wireless communication is available.
- NFC (13.56MHz): Felica ® NFC Forum Type 3

1.2 Typical Application

- Retail industry with electronic displays, platforms, solutions, and services.
- Intelligently communicating, managing, and optimizing price and product information.

1.3 Appearance



Figure 2-1. Appearance

2 Specification

2.1 Product Specification

Item	Description
Size & Weight	1.50 Inch : 38.0 x 47.8 x 11.7 mm (22.0g)
	2.13 Inch : 69.4 x 35.3 x 11.7 mm (30.0g)
	2.13 Inch (F) : 69.4 x 35.3 x 11.7 mm (25.0g)
	2.66 Inch : 82.0 x 41.7 x 11.7 mm (38.0g)
	2.66 Inch (F) : 82.0 x 41.7 x 11.7 mm (33.0g)
	3.50 Inch : 102.2 x 50.9 x 11.7 mm (TBD)
	3.70 Inch : 103.5 x 58.9 x 11.7 mm (TBD)
	4.20 Inch : 97.8 x 91.8 x 12.6 mm (80.0g)
	5.79 Inch : 165.1 x 64.8 x 12.5 mm (TBD)
	7.50 Inch : 178.4 x 125.6 x 10.9 mm (200.0g)
	11.60 Inch : 263.60 x 192.70 x 13.10 mm (455.0g)
Battery	CR2450 Li-MnO ₂ Battery (3V, 1~2pcs)
	- 1.50" : CR2450 x 1pcs
	- 2.13", 2.66", 2.90", 3.50" : CR2450 x 2pcs
	Li-MnO ₂ Thin Cell CF502440, CP305050
	- 2.13"F, 2.66"F, 3.70", 4.20" : CF502440 x 1pcs
	- 5.79" : CF461983 x 1pcs
	- 7.50" : CP305050 x 1pcs
	- 11.60" : CF505050 x 1pcs
Display	** Note: Battery capacity depends on temperature (especially in low temp environment) and number of update count.
	EPD Panel Display (Graphic type)
	BW : Black / White, BWR : Black / White / Red,
	BWRY : Black / White / Red / Yellow
	1.50 Inch : 200 x 200 Pixel (188dpi) / 27.0 x 27.0 mm
	2.13 Inch : 296 x 144 Pixel (155dpi) / 48.6 x 23.64 mm
	2.66 Inch : 360 x 184 Pixel (152dpi) / 60.12 x 30.73 mm
	3.50 Inch : 384 x 184 Pixel (122dpi) / 79.68 x 38.18 mm
	3.70 Inch : 416 x 240 Pixel (130dpi) / 81.54 x 47.04 mm
	4.20 Inch : 400 x 300 Pixel (120dpi) / 84.8 x 63.6 mm
	5.79 Inch : 792 x 272 Pixel (144dpi) / 139.0 x 47.74 mm
	7.50 Inch : 800 x 480 Pixel (124dpi) / 163.2 x 97.92 mm
	11.60 Inch : 960 x 640 Pixel (113dpi) / 244.5 x 163.0 mm

Housing Color	Black & White (Optional: Grey)
Information display	Product name, Price (Quantity), Unit, Symbol, Status etc.
Communication	2.4GHz Unlicensed ISM band (2401~2482MHz, 82ch)
Modulation / Data rate	GFSK / 1Mbps
Communication Distance	Radius 25m (Line of Sight)
Operation Temperature	Normal Temperature Tag 0 ~ 40 °C (@20~60% RH) Freezer Temperature Tag -25 ~ 10 °C (Freezer Tag)
Storage Temperature	-20°C ~ 40°C

2.2 Radio (RF) Specification

Item	Parameter	SPEC			Unit	Condition
		Min	Typ	Max		
TX	Transmit Power	-4	1.5	3	dBm	
	Error Vector Magnitude	-	10	28	%	When measured for 100 chips
	Frequency Error	-96	-	+96	%	
	Tx Current	-	-	10	mA	Total Current at max Tx Power
RX	Receiver Sensitivity	-90	-	-	dBm	PER <1%

** Test Channel : 2480MHz

2.3 NFC Specification

Item	Parameter	SPEC			Unit	Condition
		Min	Typ	Max		
NFC	Read Distance	-	20	-	mm	TAG Status

※ NFC functionality operates only in passive mode and requires a separate NFC reader.

2.4 Mechanical Drawing

2.4.1 Case Dimension

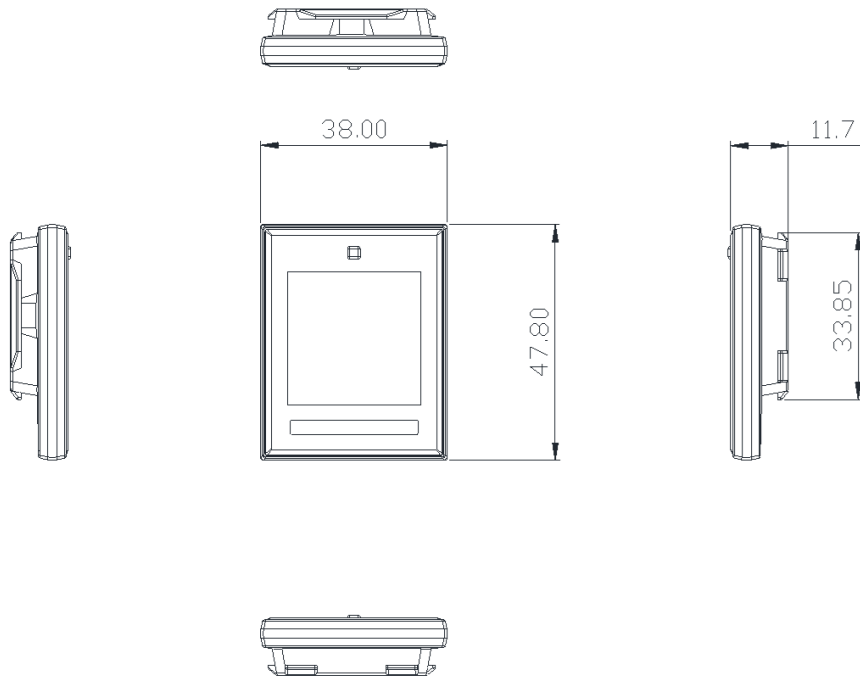


Figure3. 1.50" Mechanical Dimension

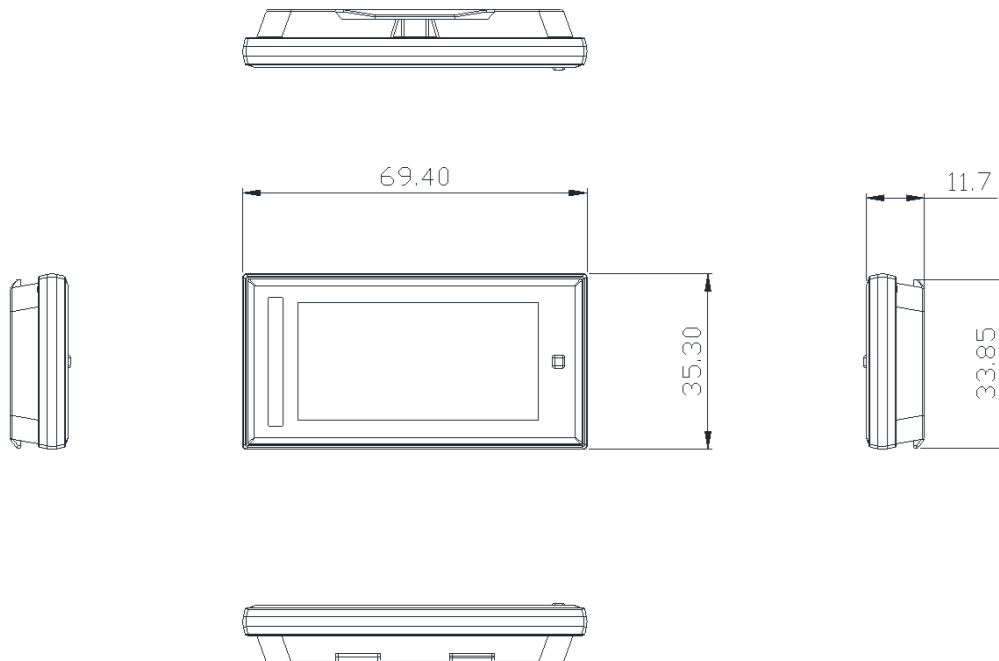


Figure4. 2.13" Mechanical Dimension

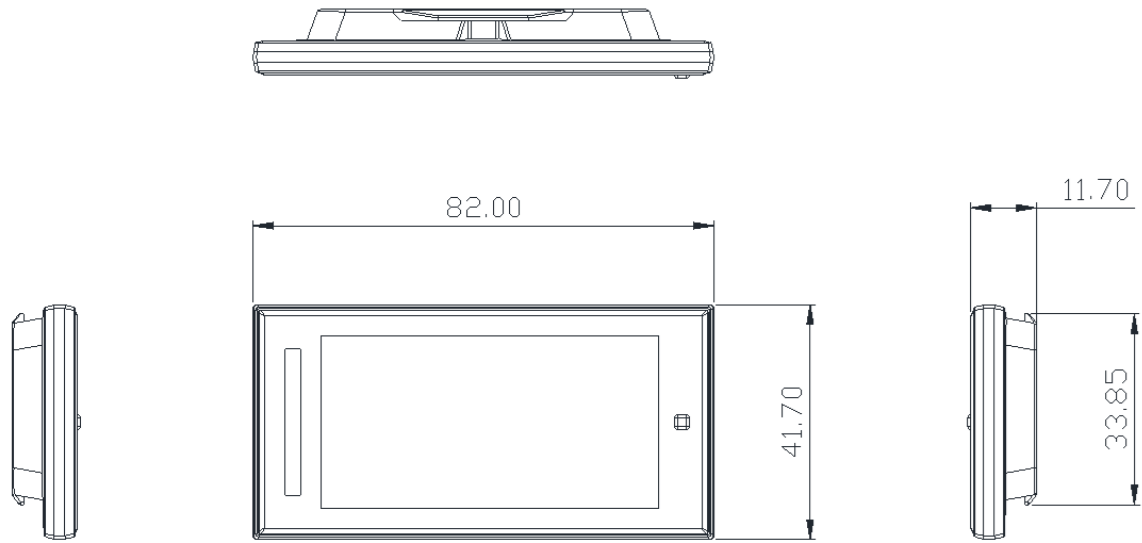


Figure5. 2.66" Mechanical Dimension

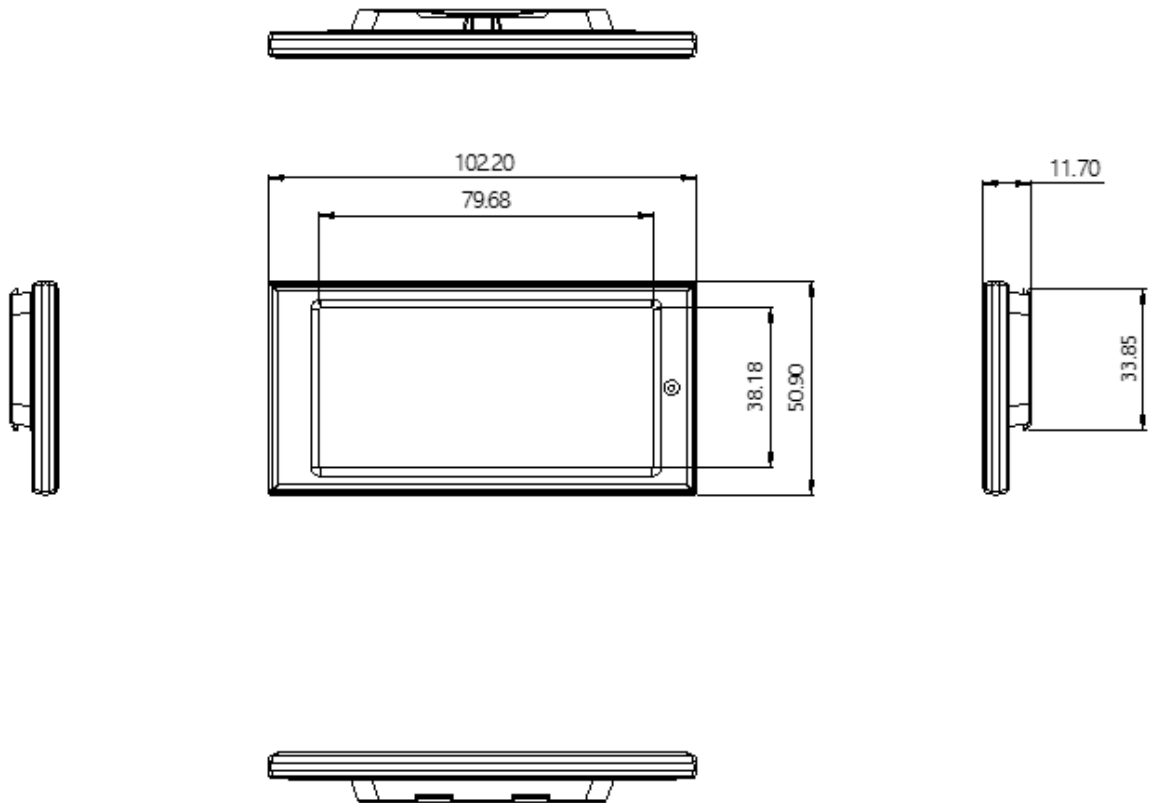


Figure6. 3.50" Mechanical Dimension

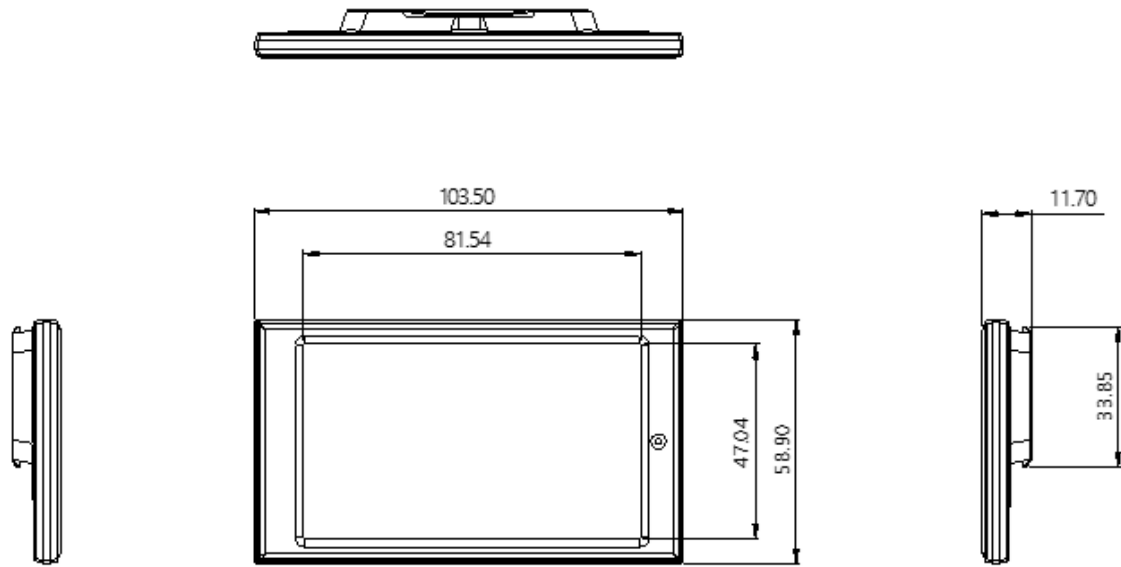


Figure7. 3.70" Mechanical Dimension

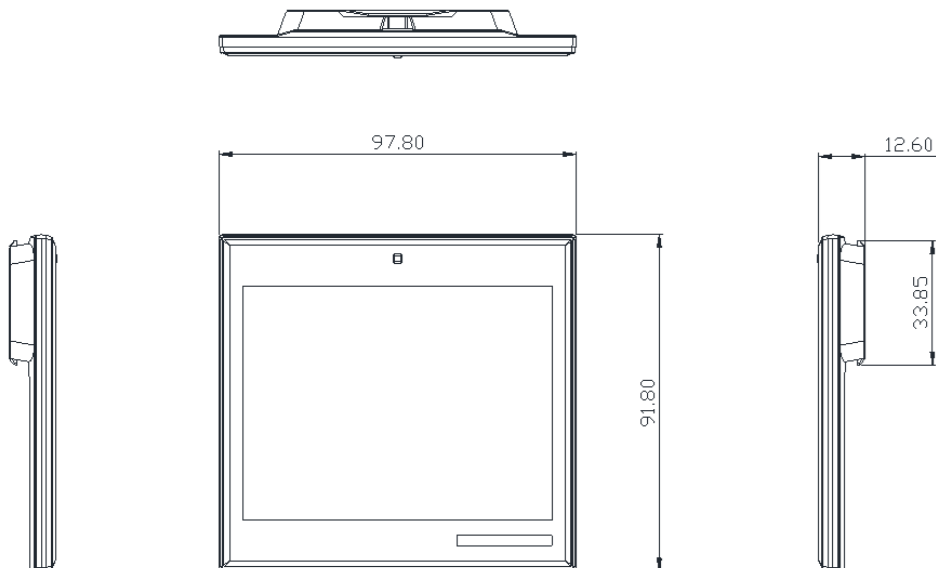


Figure8. 4.20" Mechanical Dimension

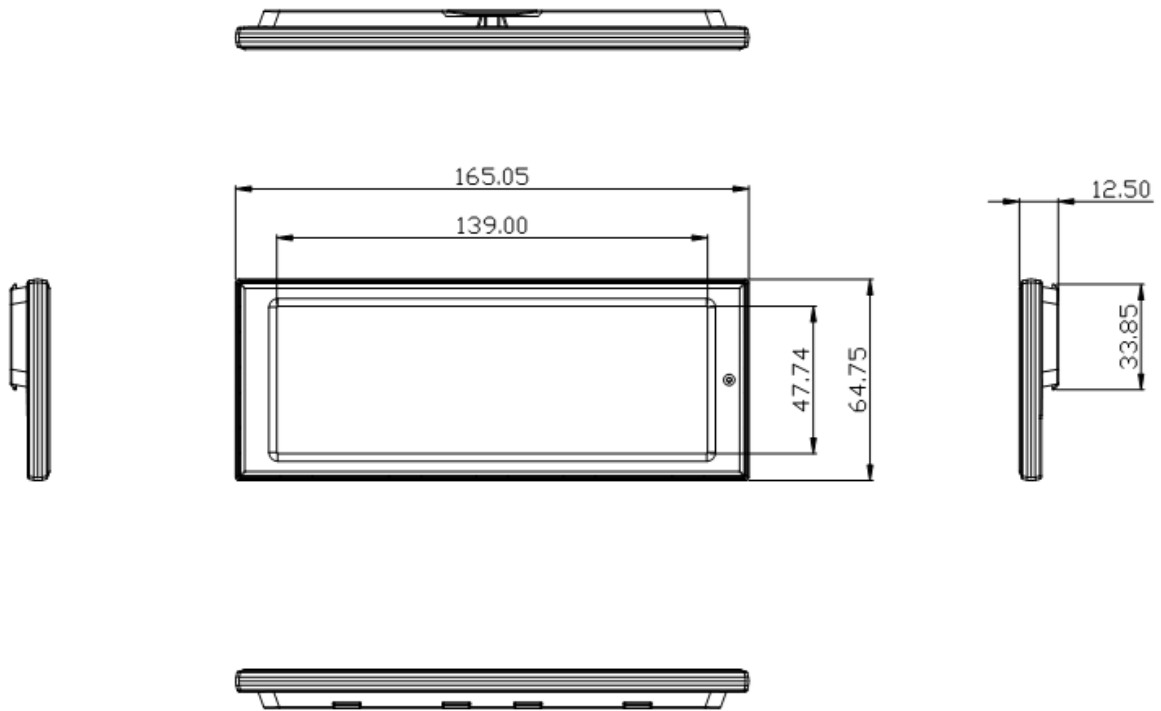


Figure9. 5.79" Mechanical Dimension

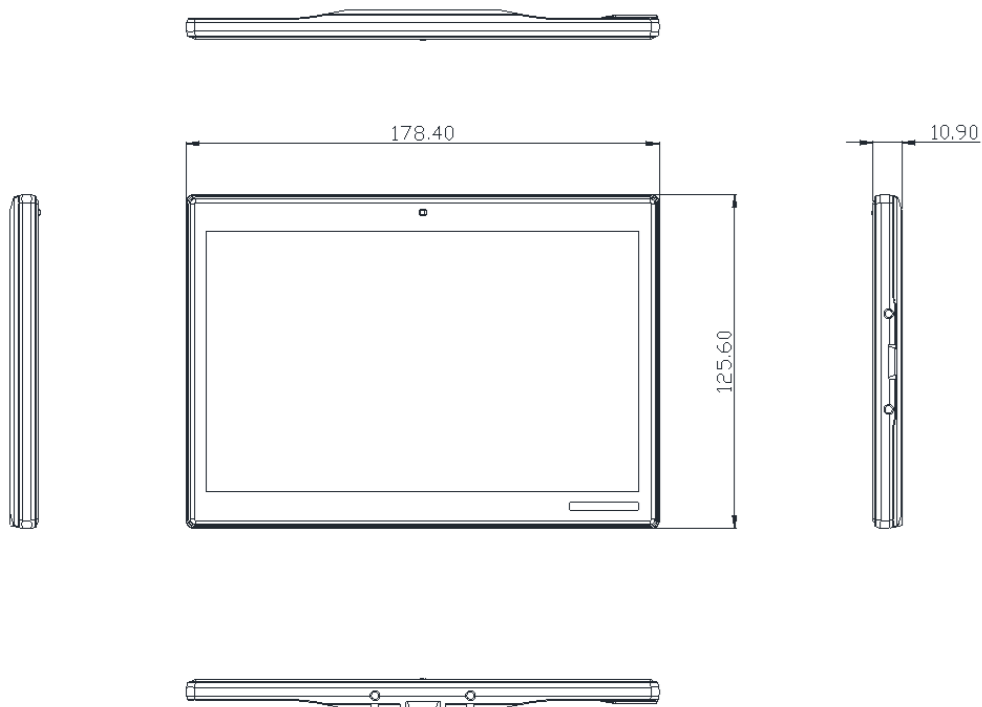


Figure10. 7.50" Mechanical Dimension

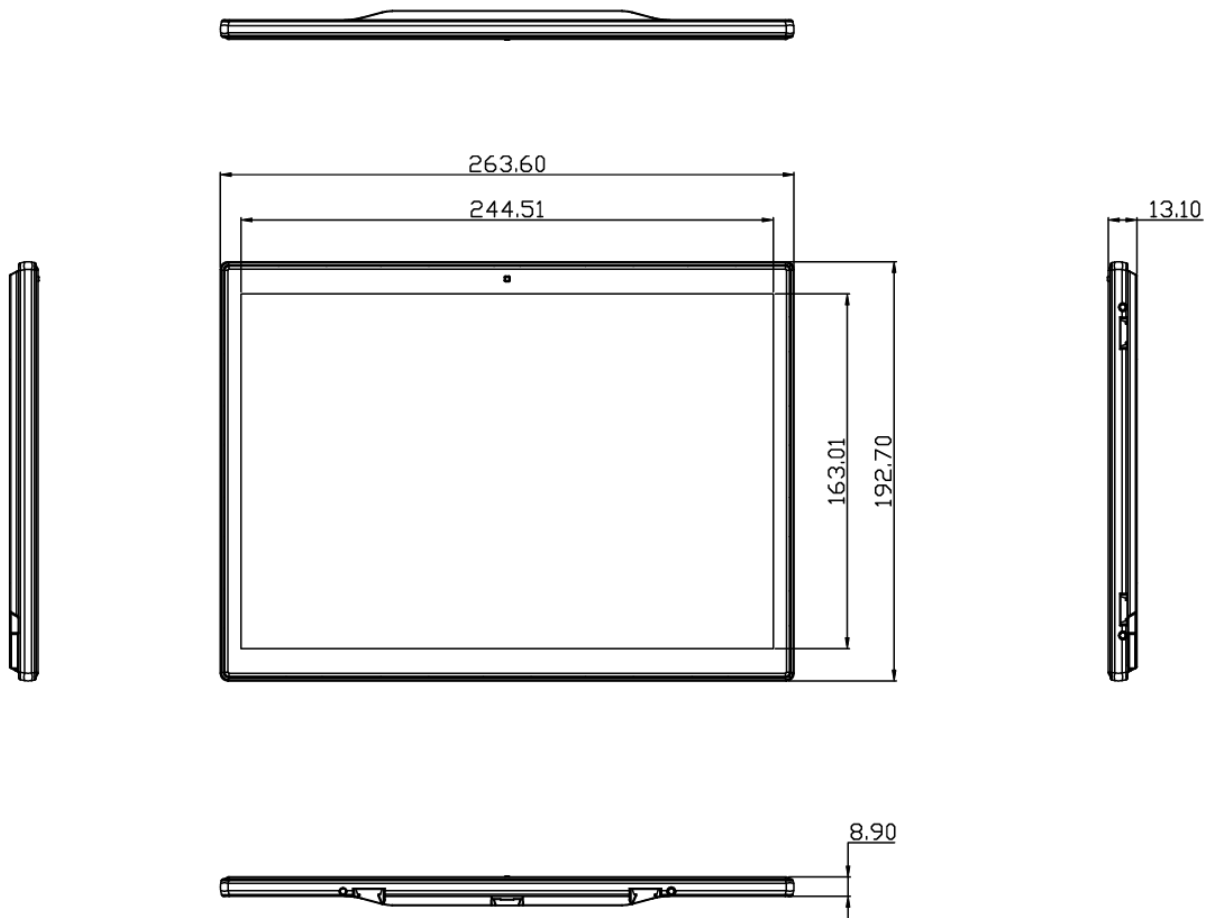


Figure11. 11.60" Mechanical Dimension

2.5 Label Marking

2.5.1 Serial Number Information

Serial Code Value

Digit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Code	①	②					③	④	⑤	⑥	⑦	⑧								⑨

① Classification of product lines by display

DP : Display EPD product lines among display products

DL : Display LCD product lines among display products

② Display Size

size	1.30"	1.50"	2.13"	2.66"	2.90"	3.70"	4.20"	5.65"	5.83"	7.50"	11.6"	13.3"
Code	0130	0150	0213	0266	0290	0370	0420	0565	0583	0750	1160	1330

③ Product appearance structure

A : General type

F : For freezing

W : Warehouse (Logistics)

④ Display color

BW	BWR	BWY	BWRY	5color	6color	7color	8color	Multi
B	R	Y	T	P	H	S	E	M

⑤ Window(Front Case) color

B : Black

W : White

G : Grey

⑥ Manufacturing year

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	A	B	C	D	E	F	G	H	J	K
Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Code	M	N	P	Q	R	S	T	U	V	W

⑦ Manufacturing month

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	A	B	C

⑧ Serial Number (Decimal)

⑨ Checksum

2.5.2 Product and MAC Label

Product Label



MAC Label



Product information is indicated on the sticker label of the VIVA Tag.
The information consists of Model (Model Name), S/N (Serial Number), MAC (MAC Address), Manufacturer (4SEILS Co., Ltd).

Model Name :

(DP0150 : 1.50", DP0213 : 2.13", DP0266 : 2.66", DP0420 : 4.20", DP0750 : 7.50", ...etc)

This manual applies to multiple product models. Please refer to the product label for the applicable Model Number and FCC ID. Model/FCC ID combinations:

Model	FCC ID
DP0266	2BWXS-DP0266
DP0420	2BWXS-DP0420
DP0750	2BWXS-DP0750

S/N : Serial Number Information (See Section 2.5.1)

MAC : Barcode & Barcode number (decimal 16 digits)

- 10 digits (1st ~ 10th) : xxxxxxxxxx (Label I.D.)
- 2 digits (11th ~ 12th) : Display Size

Code	Display Size	Resolution X	Resolution Y
1	1.3"	144	200
2	1.5"	200	200
3	1.54"	152	152
4	2.2"	296	144
5	2.66"	296	152
6	2.9"	296	128
7	3.1"	296	168
8	3.7"	416	240

-2 digits (13th ~ 14th) : Display color

Code	Display Color
01	BW
02	BW(Freeze)
03	BWR
04	BWY
05	BWRY

9	4.2"	400	300
10	5.65"	648	480
11	7.5"	800	480
12	11.6"	960	640

- 2digits (15th ~ 16th) : xx (checksum)

3 Packaging

TBD

4 Cautions for Treatment

Provisions should be in place to protect against any damage to the product caused by improper handling. The purchaser assumes responsibility for any damage to the product resulting from improper handling.

It is highly recommended that the product be installed within 3 months from the date of arrival at the logistics hub. The recommended storage conditions are -20 to 40 degrees Celsius and an environment with 35-60% relative humidity.

4.1 Usage Environment

Take extra precautions when using this RF device in the vicinity of other electronic devices and appliances. Most electronic devices and appliances use electromagnetic waves. The electromagnetic waves emitted by this RF device can affect other electronic devices and appliances.

If you are using the device in an area with an explosion hazard, follow all safety regulations, instructions, and signals.

4.2 Storage and Use

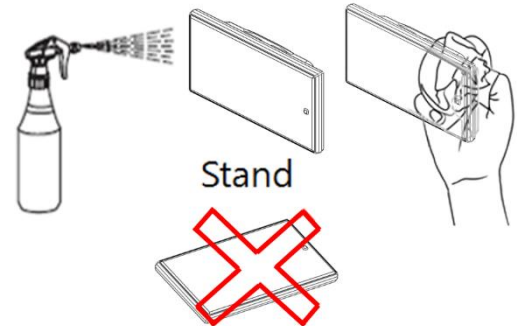
- Do not disassemble, modify, or attempt to repair the product. Unauthorized disassembly or modification may result in product damage and void the warranty. If the product requires service, battery replacement, or repair, please contact the manufacturer or an authorized service provider.
- Moisture and liquids can damage internal parts and circuit boards if allowed to enter into the device itself.
- Do not place or store the product on a sloped surface. The product may slide and fall off the surface and damaged.
- Use the product in temperatures ranging from 0°C to +40°C. Parts and circuits may be damaged if operating or stored in extreme temperature.
- The display panel needs extra care when handling.
 - Do not apply any impacts on the e-Paper display as it is fragile.
 - Continuous exposure to excessive moisture (over 60% RH) or UV shortens display lifetime.
 - Ghosting image may appear in temperature conditions of less than 15 Celsius degree.
- Avoid areas with strong magnetism or subject to magnetism. Contact between the device and a magnetic object can lead to malfunctions.
- Do not place the product near heat-producing kitchen appliances like a stove or a microwave or in the vicinity of highly pressurized containers.
- External impact to the product, such as from being dropped, can damage the product.
- Twisting and bending the product can damage the exterior casing and the internal components.
- This product uses 2.4GHz frequency band for wireless communication network. Radio communications can be limited or affected by other applications that share the same frequency band, such as WiFi, Bluetooth, Zigbee, etc.
- Frequent communications, updates and screen renewals may reduce battery life time. Low temperature environments may reduce battery life.

4.3 Cleaning

For Spray Cleaning

Steps

- 1) Stand labels. Do not lay the labels flat down.
- 2) Lightly spray all surfaces and wait a few seconds.
- 3) Gentle wipe clean using a cloth or tissue.
- 4) Let the labels dry.



Notes

When spraying VIVA Tags, make sure no liquid flows inside the VIVA Tag.

Liquid contact to the inside of the VIVA Tag can damage circuitry and battery.

Use mild, non-alcoholic detergents or glass cleaner.

Recommended non-abrasive cloths : Microfiber, Cotton T-Shirt, Cotton handkerchief, Cotton tea towel.

For Wet Tissue Cleaning :

Steps

- 1) Stand or lay down the VIVA Tags.
- 2) Wipe using wet tissues.
- 3) Let the labels dry.



We do not guarantee any water damaged labels



5 FCC Information to User

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE.

SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

IMPORTANT NOTE : FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.