

# **BFC-10R1**

**10.1" RISC Bezel Free Panel PC with FreeScale IMX51**

## **Quick Reference Guide**

**2<sup>nd</sup> Ed –24 October 2018**

### **Copyright Notice**

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## FCC Statement



THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

- (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

## A Message to the Customer

### ***Avalue Customer Services***

Each and every Avalue's product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Avalue device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Avalue has come to be known.

Your satisfaction is our primary concern. Here is a guide to Avalue's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

### ***Technical Support***

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone. So please consult the user's manual first.

To receive the latest version of the user's manual; please visit our Web site at:

<http://www.avalue.com.tw/>

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# 1. Getting Started

## 1.1 Safety Precautions

### Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

### Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

## 1.2 Packing List

- 1 x 10.1" RISC Bezel Free Panel PC System.
- Other major components include the following:
  - 1 x Power Adapter(12V/5A)



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If any of the above items is damaged or missing, contact your retailer.

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## 1.3 System Specifications

Panel			
Model	BFC-10R1-M51	BFC-10R1-M51W	BFC-10R1-M51P
LCD size	10.1”		
Display type	WSVGA TFT		
Resolution	1024 x 600		
Color	262K		
Pixel pitch	0.1905mm(H) x 0.189mm(V)		
Luminance	180cd/m²		
Contrast ratio	300		
Viewing angle	15(U), 35(D), 45(L), 45(R)		
Response time	30 ms		
Backlight	LED		
Touch Type	Projective capacitive touch		
Touch Light Transmission	93%		
Integrated Module	n/a	w/ WiFi Module	w/ POWERED LAN Module
System			
Board	RSC-IMX51		
CPU	Freescale i.MX515 ARM Cortex-A8 800MHz		
PMIC	Freescale MC13892AJVL		
Flash	Onboard 4GB eMMC		
Memory	Onboard 512MB DDR2 SDRAM		
SSD	SD or SDHC		
Rear Panel I/O			
Serial Port	1 x RS-232, 1 x RS-232/ 422/ 485		
USB	2 x USB 2.0		
Mini USB	1 x Mini-USB		
Ethernet	1 x RJ-45		
Mechanical & Environmental			
Color	Front & Rear panel Black		
Power Requirement	+12 VDC Input		
Operating Temperature	0°C to 40°C (32°F to 140°F)		
Relative Humidity	0%~90% relative humidity, non-condensing		
Storage Temperature	-20°C to 60°C		
Mounting	Wall/Stand/VESA 100 mm X 100 mm		
Dimensions	251.9mm x 154.5mm x 42.7mm		

**BFC-10R1**

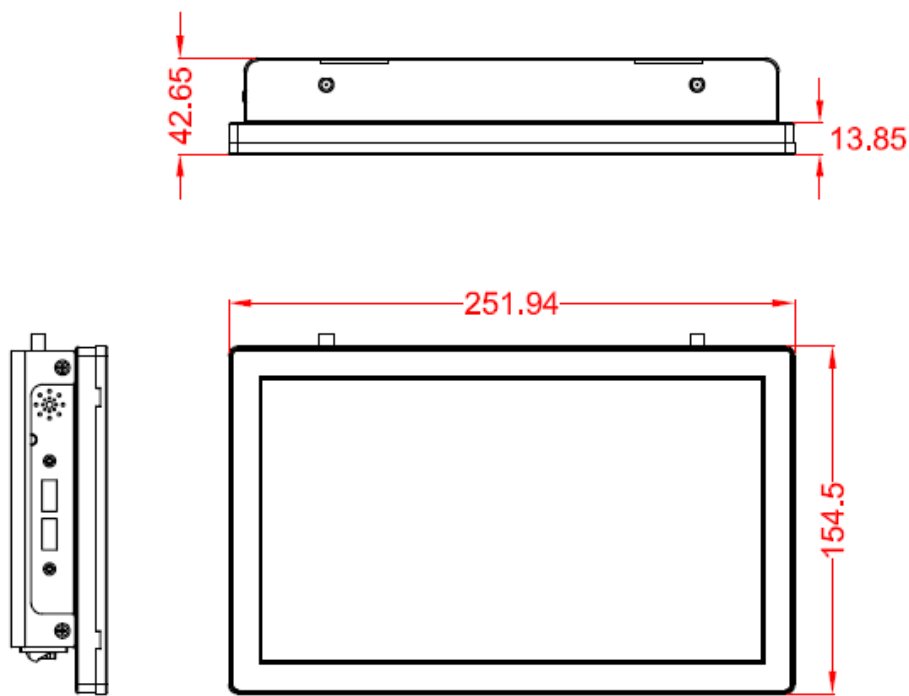
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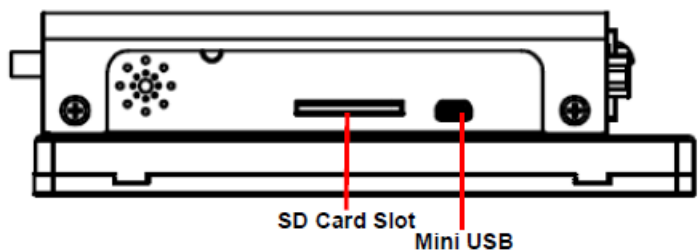
**Note:** Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front & Top View

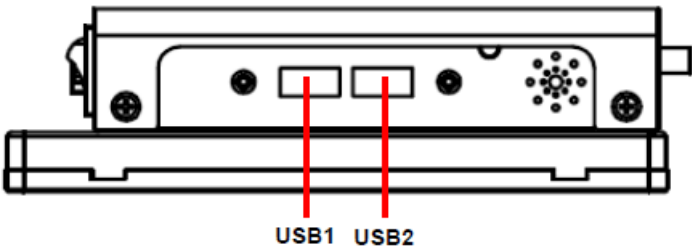


1.4.2 Right Side View



Connectors		
Label	Function	Note
SD Card Slot	SD/SDHC card socket	Right side
Mini USB	USB client connector	Right side

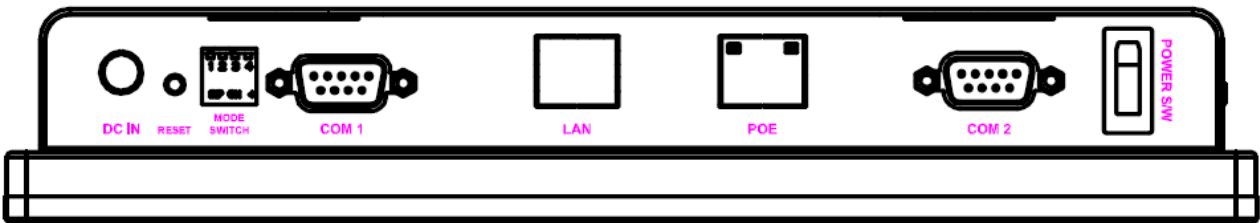
1.4.3 Left Side View



Connectors

Label	Function	Note
USB1~2	USB 2.0 connector 1~2	Left side

1.4.4 Rear View



Connectors

Label	Function	Note
COM1~2	Serial port connector1~2	DB-9 male connector
DC-IN	+12V DC power-in connector	
LAN	RJ-45 Fast Ethernet connector	
MODE SWITCH	Boot Mode selector	
Powered LAN	RJ-45 Powered LAN connector	For BFC-10R1-M51P
Power S/W	System power switch	
RESET	Reset button	



## 2. Hardware Configuration

### Jumper and Connector Setting, Driver and BIOS Installing

For advanced information, please refer to:

- 1- RSC-IMX51 Installation Guide or User's Manual
- 2- EPM-PSE and AUX-MPCIE (Optional) Installation Guide.



**Note:** If you need more information, please visit our website:

<http://www.avalue.com.tw>

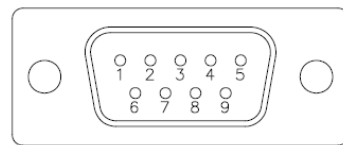
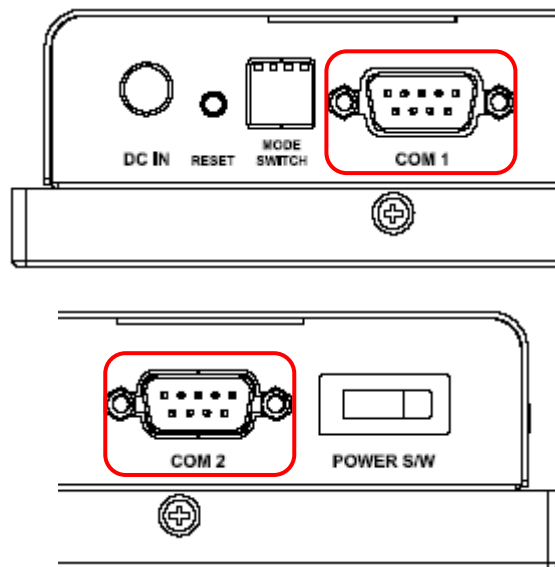
## 2.1 Jumper & connector list

### Connectors

Label	Function	Note
COM1~2	Serial port connector1~2	DB-9 male connector
DC-IN	+12V DC power-in connector	
LAN	RJ-45 Fast Ethernet connector	
MODE SWITCH	Boot Mode selector	
Powered LAN	RJ-45 Powered LAN connector	For BFC-10R1-M51P
Power S/W	System power switch	
RESET	Reset button	
SD Card Slot	SD/SDHC card socket	Right side
Mini USB	USB client connector	Right side
USB	USB 2.0 connector 1&2	Left side

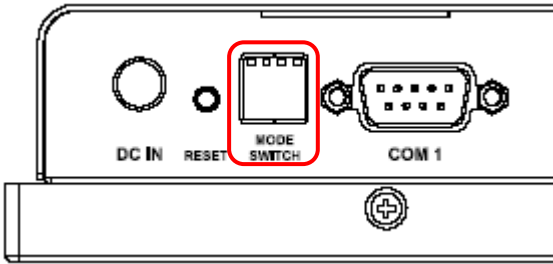
## 2.2 Jumper & connector settings

### 2.2.1 COM1 & COM2 connector

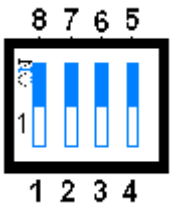


Signal	PIN	PIN	Signal
NC	1	2	RX1
TX1	3	4	NC
GND	5	6	NC
RTS	7	8	CTS
NC	9		

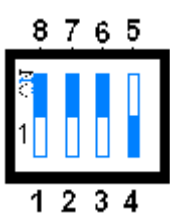
2.2.2 Boot Mode selector (SW2)



Boot from onboard SD

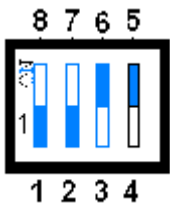


Boot from SD socket



Signal	PIN	PIN	Signal
BMOD1	1	5	+V2D775_BOOT
BMOD0	2	6	
BT_SRC[1]	3	7	+V1D8_DIG1
BT_SRC[0]	4	8	

USB OTG mode (Reflash onboard SD only)



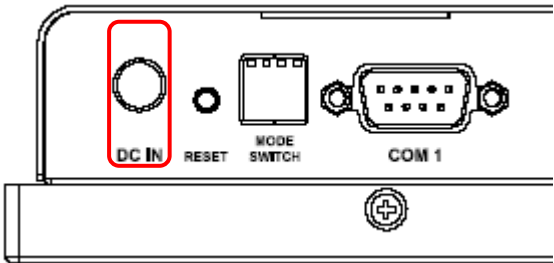
Please note:

DIP Switch setting:

0=Off, 1=On

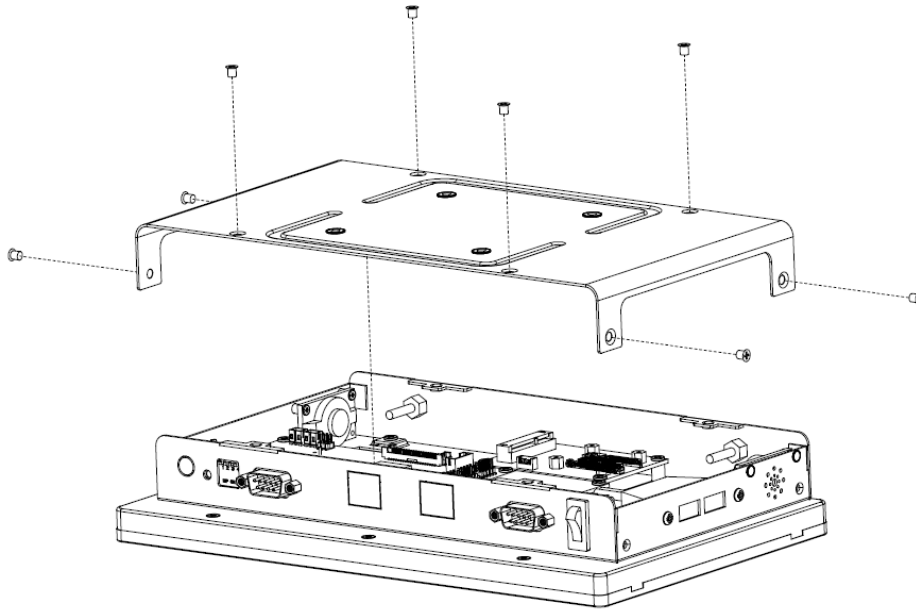
When **Position4** is switched On, the system is forced to power On as soon as power is applied. Switch to Off mode for normal operation.

2.2.3 DC power-in connector

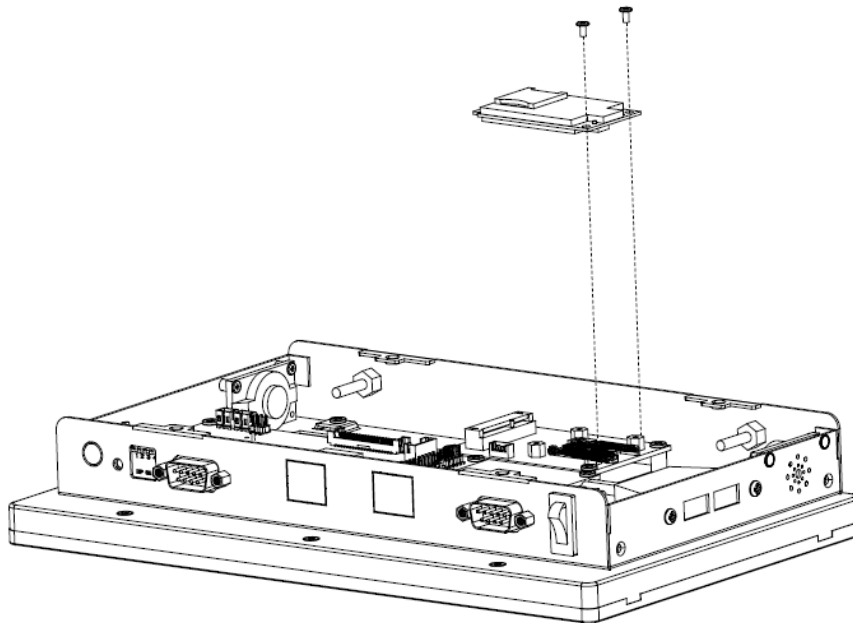


DC-IN 12V

## 2.3 Installing PCIE device (BFC-10R1)

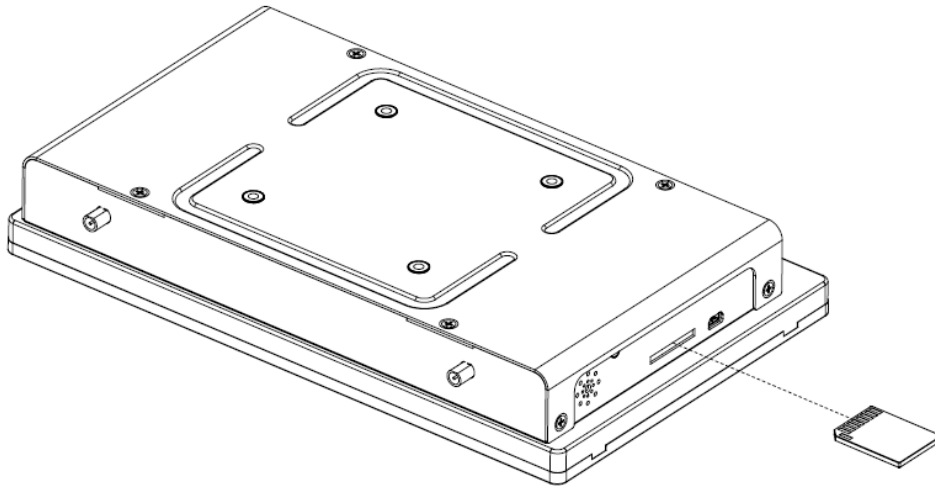


**Step1.** Remove the 8 screws to disassemble your system back cover.



**Step2.** Please install mini PCIe device, and fasten with 2 screws

## 2.4 Installing SD Card (BFC-10R1)



**Step1.** Put SD Card into the SD Card Slot.

