



## ARCA-V2 Series Wireless Connectivity Hub

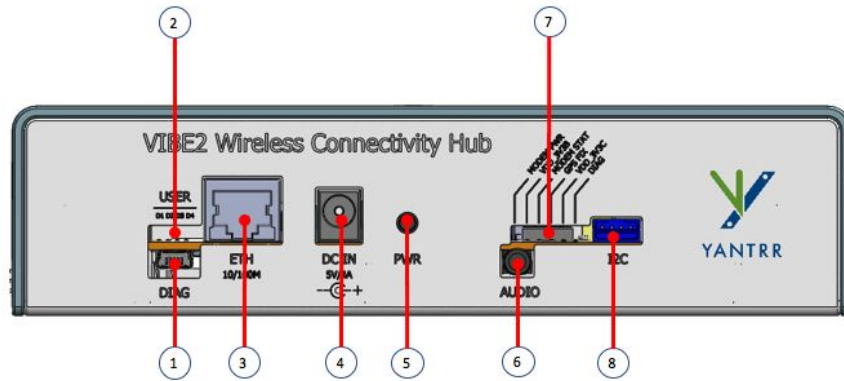
### Quick Start Guide

Date: Jul 26, 2017

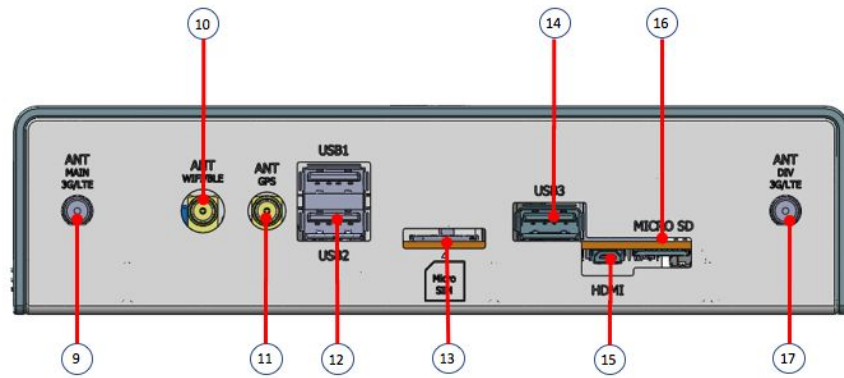


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New Delhi, 110091  
INDIA

## Physical Layout:



ARCA Front Panel Layout



ARCA Rear Panel Layout

Ref	Front Panel Description	Reference	Ref	Rear Panel Description	Reference
1	Diagnostic port (USB device)		9	Main 3G/LTE antenna SMA female connector	

2	User LEDs D1-D4		10	WiFi/BLE antenna SMA female connector	
3	Ethernet port		11	GPS antenna SMA female connector	
4	DC Power-n jack		12	2x USB 2.0 HS host ports (USB1, USB2)	
5	Power button		13	Micro SIM card socket	
6	Audio jack		14	1x USB 2.0 HS host port (USB3)	
7	Systems status LEDs		15	Micro HDMI connector	
8	I2C port		16	Micro SD card socket	
			17	Diversity 3G/LTE antenna SMA female connector	

## Specifications

ARCA-V2 CPU System	
Processor	TI Sitara™ ARM® Cortex®-A8 AM3352 (600MHz), On-Chip 64KB Shared SRAM, 32KB Data Cache, 32KB L1 Cache, On-Chip 256 KB L2 Cache
SDRAM Memory	512MB DDR3
Flash Storage	On-board 4GB, 8 bit Embedded MMC External microSD expansion slot
Real Time Clock	+/- 2ppm accuracy, Automatic calendar compensated up to year 2100, battery backed, +/- 3 °C accurate temperature sensor output
Debug Support	USB Device diagnostic port connects to CPU console and modem
Power	5V, 4A DC (20W maximum)
LED Indicators	1-Board power, 1-Modem Power, 1-Modem Data, 1-GPS, 1-GPS Fix, 1-Diag, 4- User programmable LEDs
HS USB2.0 USB	3x USB2.0 HS host ports, Type A socket, 500mA per port
Serial Port	Console UART access through diagnostic USB device port
Ethernet	10/100Mbps, RJ45

User Input Buttons	Power
I/O Interfaces	I2C, USB
Video Interface (Optional)	Micro HDMI
Compatibility	Compatible with other Industrial capes such as CANBus, RS232, RS485 and most of the LCD capes
Compliance	FCC Part 15 Subpart B Class B, ICES-003 Issue 6 Class B (models offered in North America)
Dimensions	162mm X 44mm X 92mm (WxHxD)
Operating Conditions	Commercial: 0-70 deg C
Operating System	Main Linux kernel 4.4, Debian distribution

Cellular Modem Options							
Modem Parameter	ARCA-V20 7A (NA) ARCA-V20 7C (EU)	ARCA-V20 7B	ARCA-V20 6A (NA), ARCA-V20 6C (EU)	ARCA-V206 B	ARCA-V207 D (NA) ARCA-V207 F (EU)	ARCA-V2 07E	ARCA-V208 A
Network Type	LTE CAT1	LTE CAT1 Verizon	LTE CAT3	LTE CAT3 Verizon	LTE CAT4	LTE CAT4 Verizon	Global GSM/WCDMA
Frequency Bands	B2/B4/B5/B1 2/B13 (NA) B1/B3/B7/B8 /B20 (EU)	B2/B4/B13	B17/B5/B4/B 2 (NA) B20/B3/B7 (EU)	B13/B4	B2/B4/B5/B1 7 (NA) B1/B3/B7/B8/ B2 (EU)	B2/B4/B13	800/850, 900. AWS, 1700, 1900, 2100
Data Rate (DL/UL) Mbps	10/5	10/5	100/50	100/50	150/50	150/50	21/5.76
Certifications	FCC, IC, PTCRB, CE, GCF	FCC, IC, Verizon	FCC, IC, PTCRB, CE, GCF	FCC, IC, Verizon	FCC, IC, PTCRB, GCF	FCC, IC, Verizon	FCC, IC
Embedded GPS/GNSS			•	•			•
Ant. Diversity	•	•	•	•	•	•	•

GPS/GNSS (ARCA-V206A, ARCA-V206B, ARCA-V208A)	
Receiver	16 channels L1 1575.42 MHz (GPS) 1598.0625 – 1607.0625 (GLONASS)

Acquisition Sensitivity	-161 dBm (Hot start), -145 dBm (Cold Start), -165 dBm (Indoor with A-GPS), -159 dBm (Navigation)
Time To First Fix	Hot start 1.8s, Cold start 31.5s
Accuracy	Position 0.4m
Position Update Rate	1 Hz
NMEA Output Messages	NMEA 0183 format
Miscellaneous	Supercap backup for hot start

Wireless LAN Option	
Wi-Fi	802.11 b/g/n, Wi-Fi Direct, AP/EP modes, up to 150Mbps
Bluetooth	V2.1+EDR/BT v3.0/BT v4.0, 1/2/3 Mbps

## Hardware Setup Guide

### Accessories

Caution: Please use only the accessories provided with the product. Using other models/brands may cause unsafe or unintended operation of the device.

Identify the following accessories from the package:

- a. 1x DC power adaptor 5V/4A
- b. 1x USB diagnostic cable
- c. 2x multi-band cellular antennas
- d. 1x WiFi/BLE antenna (only with some models)
- e. 1x GPS antenna (only with some models)

### Setup

1. Attach and tighten the cellular main/diversity (9,17) antennas, WiFi/BLE (10) and/or GPS (11) antennas as applicable to the model.
2. Insert a micro SIM card in slot (13) ensuring correct orientation as marked. Data services should be activated on this SIM card to be able to make data connection.
3. Micro SD card (16) needs to be inserted only if you want to boot from an OS image on SD card.



## Powering Up

1. Connect the power adaptor barrel plug into the DC-in socket (4)
2. The user LEDs (2) will light up and then LEDs will blink rapidly as the CPU system boots.

## Login

User's can login the system using either LAN port (3), diagnostic port (1) or using HDMI display (15) plus a keyboard on a USB port.

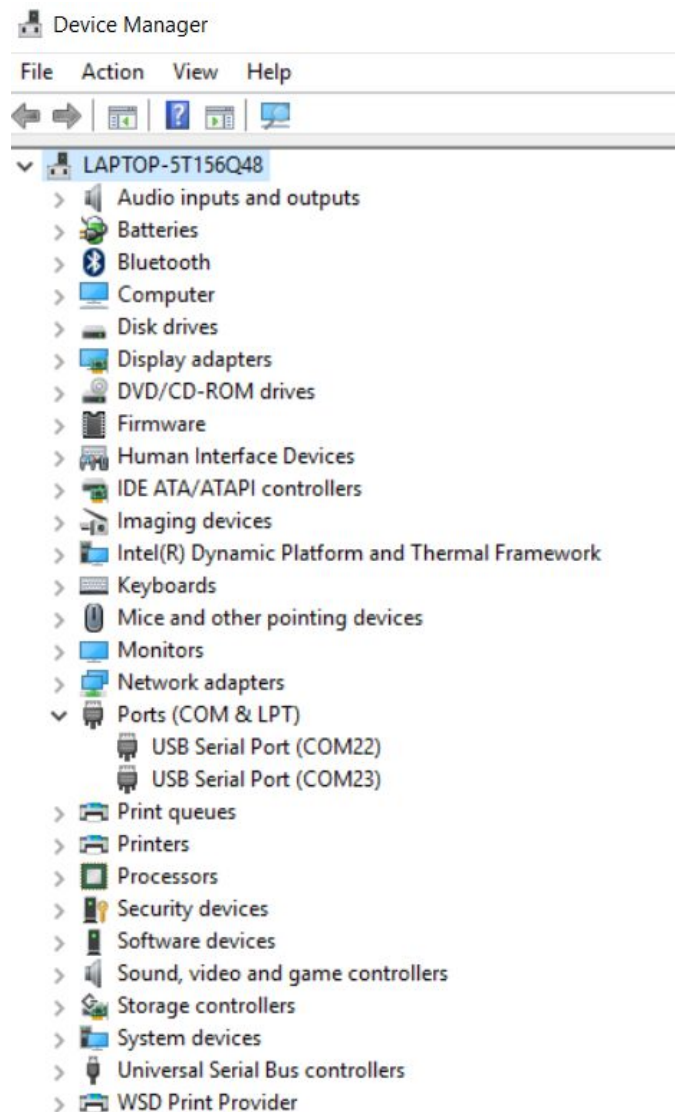
### Login using LAN Port:

1. Attach a LAN cable to LAN port
2. Connect other end of LAN cable to a Windows or Linux system
3. The ARCA system is shipped with a factory default IP address 192.168.1.150
4. ssh to this IP address, login "root", password "root"
5. Change root password on first login to assure security of the system
6. Change IP address as desired

### Login using Diagnostic Port:

1. Attach the diagnostics USB cable device plug to the diagnostic port socket (1)
2. Attach the host end of the USB cable to any Linux or Windows PC

- The host system should automatically detect serial devices on the USB port and install necessary drivers automatically.  
On Windows systems, the serial port will appear as COM22, COM23. (usually these numbered ports, but it can vary from system to system). Out of these two, the first port is used to connect to ARCA CPU.



On Linux systems, the serial ports will appear as ttyACM0 and ttyACM1. Out of these, the first one is used to connect to ARCA CPU.



```

yantrr@yantrr-ws2:~$ lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 007: ID 04f3:20cd Elan Microelectronics Corp.
Bus 001 Device 005: ID 8087:0a2a Intel Corp.
Bus 001 Device 003: ID 04f2:b50c Chicony Electronics Co., Ltd
Bus 001 Device 069: ID 04b4:0005 Cypress Semiconductor Corp.
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
yantrr@yantrr-ws2:~$
yantrr@yantrr-ws2:~$ ls /dev/ttyACM*
/dev/ttyACM0 /dev/ttyACM1
yantrr@yantrr-ws2:~$

```

- Using a terminal emulator such as “putty” or “minicom”, attach to serial port /dev/ttyACM0 using parameters “115200,8,N1”

```

yantrr@yantrr-ws2:~$ sudo minicom -D /dev/ttyACM0
[sudo] password for yantrr:

Welcome to minicom 2.7

OPTIONS: I18n
Compiled on Feb  7 2016, 13:37:27.
Port /dev/ttyACM0, 11:37:54

Press CTRL-A Z for help on special keys

Debian GNU/Linux 8 Yantrr ttyS0
Yantrr Electronic Systems Pvt. Ltd.
VIBE2 Debian Image 2017-01-16

Support/FAQ:
  http://support.zoho.com/portal/yantrr/home
  http://www.yantrr.com/wiki/Main_Page
  http://elinux.org/Beagleboard:BeagleBoneBlack_Debian

default username:password is [debian:temppwd]
Yantrr login: █

CTRL-A Z for help | 115200 8N1 | NOR | Minicom 2.7 | VT102 | Offline | ttyACM0

```

- Once at login prompt, login as “root”, password “root”.
- Change root password at first login to assure security of the system
- Change IP address as desired.

Login using HDMI display plus keyboard:

- Connect a HDMI display to the HDMI port
- Connect a keyboard to any of the USB host ports
- Login as “root”, password “root”
- Change root password at first login to assure security of the system
- Change IP address as desired



## Software Setup Guide

The ARCA system ships with Linux OS kernel 4.4, release 40-ti-r80.

All drivers and utilities needed to operate the system are included in the Debian filesystem distributed on the onboard 4GB eMMC FLASH memory.

For guidance on using specific subsystems of the ARCA device, please visit

<http://www.yantrr.com/wiki/ARCA-V2>

### Useful Links :

CPU System: <http://beagleboard.org>

### Still Have Questions or Technical Issues?

Please post your queries in the online helpdesk portal at <http://support.yantrr.com> or email us at [support@yantrr.com](mailto:support@yantrr.com) for any question you might have providing following details:

1. Product model
2. Serial Number
3. Your address, email address and phone contact information
4. Full description of the issue you are facing



### FCC Declaration of Conformity

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.