



MSPM'S

**Deogiri Institute of Engineering and Management Studies,
Aurangabad.**

Department of Computer Science and Engineering

Survey Based On

**Samsung Metro B350E
&**

VIVO Y91

Report Based On

Subject: Computer Architecture and Organization

Submitted By

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CERTIFICATE

This is to certify that Miss. MULEY VAISHNAVI DATTATRAYA (Roll No=26153) and Miss. JADHAV SAYALI SUBHASH (Roll No=26154) had successfully completed her Survey Based Project on Vivo Y91 and Samsung Metro B350E .

Prof. P.H. Durole

PROJECT GUIDE

Prof. S.BKalyankar

H.O.D

Dr. U.D. Shiurkar

PRINCIPAL

Samsung Metro B350E



1:-Introduction

Samsung Metro B350E mobile was launched in August 2015. The phone comes with a 2.40-inch display with a resolution of 240x320 pixels.

Samsung Metro B350E is powered by an one-core processor.

The Samsung Metro B350E is powered by a 1,200mAh removable battery.

As far as the cameras are concerned, the Samsung Metro B350E on the rear packs 2-megapixel camera.

Samsung Metro B350E packs 32MB of inbuilt storage that can be expanded via microSD card (up to 16GB). The Samsung Metro B350E is a dual-SIM (GSM and GSM) mobile.

Connectivity options on the Samsung Metro B350E include Bluetooth v2.10 and FM radio.

The Samsung Metro B350E measures 117.50 x 51.30 x 11.90mm (height x width x thickness) .

As of 30th September 2019, Samsung Metro B350E price in India starts at Rs. 2,780.

General

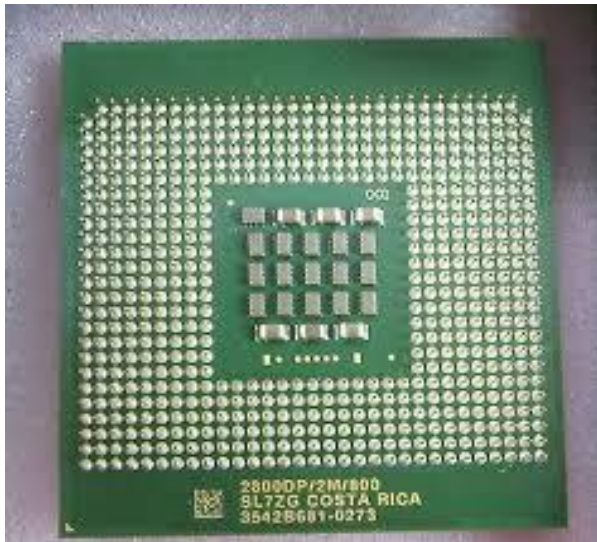
Brand	Samsung
Model	Metro B350E
Release date	August 2015
Form factor	Bar
Dimensions (mm)	117.50 x 51.30 x 11.90
Battery capacity (mAh)	1200
Removable battery	Yes

Display

The Samsung Metro B350E Mobile flaunts a QVGA display of 2.4 inch with 167 ppi pixel density and supports a screen resolution of 240 X 320 p display. The physical keypad allows you to type or make calls at a quick pace.

Screen size (inches)	2.40
Touchscreen	No
Resolution	240x320 pixels

2:-About Device:



Processor:-One Core

single-core processor

It has no Operating System and an efficient processor like its high performing counterparts.

A **single-core** processor is a microprocessor with a single core on a chip, running a single thread at any one time. The term became common after the emergence of multi-core processors (which have several independent processors on a single chip) to distinguish non-multi-core designs. For example, Intel released a Core 2 Solo and Core 2 Duo, and one would refer to the former as the 'single-core' variant. Most microprocessors prior to the multi-core era are single-core. The class of many-core processors follows on from multi-core, in a progression showing increasing parallelism over time.

Processors remained single-core until it was impossible to achieve performance gains from the increased clock speed and transistor count allowed by Moore's law (there were diminishing returns to increasing the depth of a pipeline, increasing CPU cache sizes, or adding execution units)

Camera



It stacks a 2 MP camera that allows you to click pictures with good clarity. It does not have flash function.

Rear camera	2-megapixel
Rear flash	No
Front camera	No

Connectivity

It comes with Bluetooth, EDGE or GPRS connectivity to enable you browse through your favourite sites and share data with your friends and loved ones.

Wi-Fi	No
GPS	No
Bluetooth	Yes, v 2.10
NFC	No
Infrared	No
USB OTG	No
Headphones	3.5mm
FM	Yes
Number of SIMs	2
Wi-Fi Direct	No
Mobile High-Definition Link (MHL)	No

Sensors

Compass/ Magnetometer	No
Proximity sensor	No
Accelerometer	No
Ambient light sensor	No
Gyroscope	No

Barometer	No
Temperature sensor	No

Architecture Details:-

Hardware:-

Processor	one-core
Internal storage	32MB
Expandable storage	Yes
Expandable storage type	microSD
Expandable storage up to (GB)	16

Memory Organization:-

The Samsung Metro B350E Mobile supports internal memory of 32 GB and supports expandable storage like microSD card with 16 GB.

Samsung Metro B350E packs 32MB of inbuilt storage that can be expanded via microSD card (up to 16GB). The **Samsung Metro B350E** is a dual-SIM (GSM and GSM) mobile. Connectivity options on the **Samsung Metro B350E** include Bluetooth v2.10 and FM radio.

SIM 1

GSM/CDMA	GSM
3G	No

4G/ LTE	No
Supports 4G in India (Band 40)	No

SIM 2

GSM/CDMA	GSM
3G	No
4G/ LTE	No
Supports 4G in India (Band 40)	No

BATTERY:-



Samsung Metro B350E Summary

The phone comes with a 2.40-inch display with a resolution of 240x320 pixels. **Samsung Metro B350E** is powered by an one-core processor.

The **Samsung Metro B350E** is powered by a 1,200mAh removable **battery**. ...

The **Samsung Metro B350E** measures 117.50 x 51.30 x 11.90mm (height x width x thickness

INSTRUCTION SET

Samsung Metro B350E is powered by an one-core **processor**. The **Samsung Metro B350E** is powered by a 1,200mAh removable battery.

The **instruction set** provides commands to the processor, to tell it what it needs to do. The **instruction set** consists of addressing modes, **instructions**, native data types, registers, memory architecture, interrupt, and exception handling, and external I/O.

The **instruction set**, also called **ISA (instruction set architecture)**, is part of a computer that pertains to programming, which is basically machine language. The instruction set provides commands to the processor, to tell it what it needs to do. The instruction set consists of addressing modes, instructions, native data types, registers, memory architecture, interrupt, and exception handling, and external I/O. An example of an instruction set is the x86 instruction set, which is common to find on computers today. Different computer processors can use almost the same instruction set while still having very different internal design. Both the Intel Pentium and AMD Athlon processors use nearly the same x86 instruction set. An instruction set can be built into the hardware of the processor, or it can be emulated in software, using an interpreter. The hardware design is more efficient and faster for running programs than the emulated software version.

Examples of instruction set

- **ADD** - Add two numbers together.
- **COMPARE** - Compare numbers.
- **IN** - Input information from a device, e.g., keyboard.
- **JUMP** - Jump to designated RAM address.
- **JUMP IF** - Conditional statement that jumps to a designated RAM address.

- **LOAD** - Load information from RAM to the CPU.
- **OUT** - Output information to device, e.g., monitor.
- **STORE** - Store information to RAM.

CONTROL UNIT:-

Single-core – one **processor** on a die. Since about 2012, even most smartphone CPUs marketed are no longer single-core; Microcontrollers are still single-core, while there are exceptions. Multi-core – a 'few' processors on a die, e.g. 2, 4, 8.

A control unit or CU is circuitry that directs operations within a computer's processor. It lets the computer's logic unit, memory, as well as both input and output devices know how to respond to instructions received from a program. Examples of devices that utilize control units include CPUs and GPUs.

A control unit works by receiving input information that it converts into control signals, which are then sent to the central processor. The computer's processor then tells the attached hardware what operations to carry out. The functions that a control unit performs are dependent on the type of CPU, due to the variance of architecture between different manufacturers. The following diagram illustrates how instructions from a program are processed.

Vivo Y91



Introduction

Vivo Y91 smartphone runs on Android v8.1 (Oreo) operating system. The phone is powered by Octa core, 2 GHz, Cortex A53 processor. It runs on the MediaTek Helio P22 Chipset. It has 2 GB RAM and 32 GB internal storage.

Vivo Y91 smartphone has a IPS LCD display. It measures 155.1 mm x 75 mm x 8.2 mm and weighs 163.5 grams. The screen has a resolution of 720 x 1520 pixels and 270 ppi pixel density. It has an aspect ratio of 19:9 and screen-to-body ratio of 82.6 %. On camera front, the buyers get a 8 MP Front Camera and on the rear, there's an 13 MP + 2 MP camera with features like Digital Zoom, Auto Flash, Face detection, Touch to focus. It is backed by a 4030 mAh battery. Connectivity

features in the smartphone include WiFi, Bluetooth, GPS, VoLTE, and more.

VIVO Y91 PRICE IN INDIA

Vivo Y91 smartphone price in India is Rs 12,556. Vivo Y91 was launched in the country on January 14, 2019 (Official). The smartphone comes in 1 other storage and RAM variants - Vivo Y91 3GB RAM. As for the colour options, the Vivo Y91 smartphone comes in Ocean Blue, Starry Black colours.

The **Vivo Y91** is packed with a 6.22-inch HD+ IPS display powered by a Qualcomm Snapdragon 439 chipset with 3GB RAM, 32/64GB ROM, 13MP + 2MP main cameras, an 8MP front-facing camera and a 4030mAh battery.

The processor is **excellent** to deliver a powerful performance. However, a better capacity of RAM would have made the **Vivo Y91** a perfect option to go for around this price range. The **Vivo Y91** bears a 6.22-inch IPS LCD display, which carries a pixel density of 270 PPI.

The **Vivo Y91** is a dual-SIM (GSM and GSM) smartphone, and supports Wi-Fi, Bluetooth v5.00, Micro-USB, 3G, and **4G**. The device has a high-capacity battery which is complemented by a smart power management system, which allows you to multitask even when you're on the go.

The **Vivo Y91** runs Funtouch OS 4.5 based on Android 8.1 and packs 32MB of inbuilt storage that can be expanded via microSD card (up to 256GB) with a dedicated slot. The **Vivo Y91** is a **dual-SIM** (GSM and GSM) smartphone that accepts Nano-SIM and Nano-SIM cards.

No, **Vivo Y91** doesn't support a **fast charging**. ... Yes, **Vivo Y91** does have a fingerprint sensor.

Bad processor, bad display just playing the marketing game. Better buy a Xiaomi or OnePlus even Samsung offers better **phone** than **Vivo** in mid range segment. ... **Vivo** smartphones are known for their camera

Key Specs & Features of Vivo Y91

- Operating System. Android v8.1 (Oreo)
- 6.22 inches (15.8 cm) bezel-less display with waterdrop notch.
- MediaTek Helio P22 Tru-Octa Core Processor. 2 GB RAM. 32 GB internal storage, expandable upto 256 GB.
- 13 + 2 MP Dual Rear Cameras.
- 4030 mAh battery.

General

Brand	Vivo
Model	Y91
Release date	January 2019
Launched in India	Yes
Form factor	Touchscreen
Dimensions (mm)	155.11 x 75.09 x 8.28
Weight (g)	163.50
Battery capacity (mAh)	4030
Colours	Starry Black, Ocean Blue

Display

Screen size (inches)	6.22
Touchscreen	Yes

Resolution	720x1520 pixels
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Camera

Rear camera	13-megapixel (f/f/2.2) + 2-megapixel (f/f/2.4)
Rear flash	LED
Front camera	8-megapixel (f/f/1.8)
Front flash	No

Connectivity

Wi-Fi	Yes
Bluetooth	Yes, v 5.00
NFC	No
Micro-USB	Yes
Headphones	3.5mm
Number of SIMs	2
Active 4G on both SIM cards	Yes

SIM 1

SIM Type	Nano-SIM
GSM/CDMA	GSM

3G	Yes
4G/ LTE	Yes
Supports 4G in India (Band 40)	Yes

SIM 2

SIM Type	Nano-SIM
GSM/CDMA	GSM
3G	Yes
4G/ LTE	Yes
Supports 4G in India (Band 40)	Yes

Sensors

Face unlock	Yes
Fingerprint sensor	Yes
Compass/ Magnetometer	Yes
Proximity sensor	Yes
Accelerometer	Yes
Ambient light sensor	Yes
Gyroscope	Yes

About Devices:-



Processor:=octa-core

Processor make = MediaTek Helio P22 (MTK6762R)

Processor Technology := 12 nanometer

Vivo Y91 is powered by an octa-core MediaTek Helio P22 (MTK6762R) processor. It comes with 2GB of RAM.

The fast octa -core CPU and powerful PowerVR GE8320 GPU is great for gaming, while the 32GB internal storage can be expanded by up to 256GB with microSD card.

Architecture Details:-

Hardware:-

Processor	octa-core
Processor make	MediaTek Helio P22 (MTK6762R)
RAM	2GB

Internal storage	32MB
Expandable storage	Yes
Expandable storage type	MicroSD
Expandable storage up to (GB)	256
Dedicated microSD slot	Yes

1 :- Chipset

2 :- Control Processing
Unit

3 :- RAM / ROM

Software

Operating system	Android 8.1
Skin	Funtouch OS 4.5

Instruction Set:-

Instruction set:- ARMv8

The instruction set architecture (ISA) is a set of commands used by the software to manage the cpu's work. Information about the set of instructions the processor can execute.

Memory Organization:-

It has 2 GB RAM and 32 GB internal storage.

Vivo Y91 smartphone has a IPS LCD display. It measures 155.1 mm x 75 mm x 8.2 mm and weighs 163.5 grams.

It has an aspect ratio of 19:9 and screen-to-body ratio of 82.6 %.

Input Mechanism:-

Predictive Text Input used to turn on and off keyboard function.

Output Mechanism:-

Charger output:-

Information about the electric current (amperes) voltage (volt) the charger outputs.

The higher power output provides faster charging. Up to 5v.

Vivo Y91 vs Samsung Metro B350E comparison

Key Specs	Vivo Y91	Samsung Metro B350E
Display	6.22-inch	2.40-inch
Processor	MediaTek Helio P22	one-core
Front Camera	8-megapixel	No
Rear Camera	13-megapixel + 2-megapixel	2-megapixel
RAM	2GB	-
Battery Capacity	4030mAh	1200mAh
OS	Android 8.1	-
Resolution	720x1520 pixels	240x320 pixels
General		
Brand	Vivo	Samsung
Model	Y91	Metro B350E
Release date	January 2019	August 2015
Launched in India	Yes	-
Form factor	Touchscreen	Bar
Dimensions (mm)	155.11 x 75.09 x 8.28	117.50 x 51.30 x 11.90
Weight (g)	163.50	-

Battery capacity (mAh)	4030	1200
Colours	Starry Black, Ocean Blue	-
Removable battery	-	Yes
Display		
Screen size (inches)	6.22	2.40
Touchscreen	Yes	No
Resolution	720x1520 pixels	240x320 pixels
Hardware		
Processor	octa-core	one-core
Processor make	MediaTek Helio P22 (MTK6762R)	-
RAM	2GB	-
Expandable storage up to (GB)	256	16
Dedicated microSD slot	Yes	-
Camera		
Rear camera	13-megapixel (f/f/2.2) + 2-megapixel (f/f/2.4)	2-megapixel
Rear flash	LED	No
Front camera	8-megapixel (f/f/1.8)	No
Front flash	No	-
Software		
Operating system	Android 8.1	-
Skin	Funtouch OS 4.5	-

Connectivity		
Wi-Fi	Yes	No
Bluetooth	Yes, v 5.00	Yes, v 2.10
Micro-USB	Yes	-
Active 4G on both SIM cards	Yes	-
GPS	-	No
Infrared	-	No
USB OTG	-	No
FM	-	Yes
Wi-Fi Direct	-	No
Mobile High-Definition Link (MHL)	-	No
Sim 1		
SIM Type	Nano-SIM	-
3G	Yes	No
4G/ LTE	Yes	No
Sim 2		
SIM Type	Nano-SIM	-
3G	Yes	No
4G/ LTE	Yes	No
Sensors		
Face unlock	Yes	-
Fingerprint sensor	Yes	-

Compass/ Magnetometer	Yes	No
Proximity sensor	Yes	No
Accelerometer	Yes	No
Ambient light sensor	Yes	No
Gyroscope	Yes	No
Barometer	-	No
Temperature sensor	-	No
