# Comparative Study of Conventional Desktop Computer and Compute Stick

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**Abstract:** *The technological change in electronics has brought a great change to our computers. The computer which was bulky has been reduced to small size such a way we can carry in our pockets. The present generation of humans cannot live without computer or mobile. The comparative study is done between the conventional desktop computer and Intel Compute Stick. Intel Compute Stick is portable, small in size compared to desktop computer. It can transform any HDMI TV or monitor into computer. This study discusses about the components, specifications of Conventional Desktop Computer and Intel Compute Stick. This technology proves how bright future of computing.*

**Keywords:** comparison, compute stick, conventional, size

## 1. Introduction

We are living in an era where we cannot live without computers. The computers are available in different types and specifications. People buy computer based on their application. A comparison is done between normal personal computer and Intel Compute Stick.

A Personal Computer is a micro computer which is used for general computing such as browsing, entertainment, and conferencing. The personal computer comes in wide variety of specifications. The latest model computers comes with Intel i7 and i9 processors. Personal computers also known as Desktop computer which is normally placed on table due to its size. As the years passes the size of computer has reduced significantly. The first Computer was too bulky due to the circuit and components in it. The invention of Integrated circuits has helped in reducing the size of computers.

Intel Compute Stick is a stick PC which was brought into market by the famous manufacturer Intel. It can perform all the operations and activities that can be done by desktop or laptop. A normal HDMI monitor or TV can be converted into a computer. It can be used for general computing. It has ports such as HDMI port, USB. It has inbuilt Bluetooth in it. The major highlight of this product was its size- it was nearly the size of a pen drive.

## 2. Objective

To compare the components and specification of conventional desktop and Intel Compute stick.

## 3. Components and Specification

The conventional Desktop computer comes in different variation. Main Components in system unit of a conventional desktop computer are: Motherboard, RAM, Processor, SMPS, Hard disk or SSD.

The Intel Compute Stick was initially brought into market with a basic specification. Many users were not happy with it as the processor of Intel Compute Stick was Atom Processor. Further the manufacturer came with different variants. Intel Compute Stick STK2m3W64CC is one of the best compute stick available in the market. It has a good specification.

### 3.1 Components

When we do a detailed study we can understand about the each component of the Intel Compute Stick. Here we will compare the conventional Desktop and Intel Compute Stick (STK2m3W64CC).



**Figure 1:** Inside view of Intel Compute Stick

The following components are present in Intel Compute Stick:

### 3.1.1. Processor
The Intel Compute Stick has a special type of chip which is known as SoC. SoC refers to soldered-down System-on-a-Chip. It consists of an Intel Core m5 processor. These processors are mainly designed for tablets and 2 in 1 devices. It has Integrated Intel HD Graphics 515, Integrated memory controller, Integrated PCH.

In a conventional desktop we can choose any type of processor we require. Commonly used processors are Inteli3, i5, i7, i9.

### 3.1.2 System Memory
Intel Compute Stick has soldered down memory. It has the memory features such as LPDDR3- 1866 MHz and dual channel memory. It has a memory of 4GB.Whereas in conventional desktop the system memory is inserted into motherboard. The user can choose the system memory. If the motherboard supports then the user can upgrade the system memory.

### 3.1.3 System Storage
The Intel Compute stick has soldered-down storage. It uses an Embedded MultiMediaCard component. It has a 64GB storage. Whereas in conventional desktop the system storage is either Hard disk drive or SSD (in latest model computers). The user can choose the capacity as per their requirement.

### 3.1.4 Processor Graphics Subsystem
Intel Compute Stick has an integrated Graphics. It has a wide features. In conventional desktop we can either use integrated Graphics or by using additional graphics card.

### 3.1.5 Interfaces
Compute Stick has HDMI Interface to connect to monitor or TV. It supports high definition videos and also digital audio. It also has a USB 3.0 port to connect peripherals such as keyboard, mouse, printer, etc.

The conventional desktop computers have USB 3.0, USB 2.0, audio jack.

### 3.1.6 Wireless Network Module
Intel Compute Stick has a wireless AC-8260 module. It helps for getting high speed connectivity using wireless technology. It has two antennas, Bluetooth module and also supports WiDi – Intel wireless Display. Whereas in conventional desktop there is not built Bluetooth (varies from system to system).

### 3.1.7 Power Adapter Connector
Intel Compute Stick is powered through a 5V DC which is connected on the side. But conventional desktop is powered through a 12V DC

### 3.1.8 Security Loop
There is a security loop in chassis for Intel Compute stick which allows securing the Compute stick. Whereas a conventional desktop doesn't have a security loop.

### 3.1.9 Cooling fan
Intel Compute stick has a cooling fan in order to prevent it from overheating. The device doesn't heat up due to the efficient cooling fan. Whereas in conventional desktop the system has a large fan near the processor.

## 3.2 Specification

**Table 1:** Specifications

| Component / Feature | Conventional Desktop | Intel Compute Stick (STK2m3W64CC) |
|---|---|---|
| Processor | Intel i3/i5/i7/i9 (user can choose) | Intel Core m3-6Y30 Processor |
| Memory | 4GB /8GB / (user can choose) | LPDDR3 |
| Storage | 1TB/500G/ (user can choose) | Internal 64 GB |
| Graphics | Integrated / Extended | Intel HD Graphics 515 (Integrated) |
| DC Input Voltage supported | 12V | 5 VDC |
| Graphics Output | HDMI/ VGA | HDMI |
| Input/ Output Ports | USB 3.0, USB 2.0 | USB 3.0 |
| Supported OS | Windows 10/ Linux (user can choose) | Windows 10 64-bit |
| Wireless / Integrated Bluetooth | Usually there is not built Bluetooth (varies from system to system) | Intel Wireless-AC 8260 + Bluetooth 4.2 |
| Expansion Slots | PCIExpress | Removable Memory Card Slot MicroSDXC |

## 3.3 Aesthetics

The size of the stick is small when compared to a conventional computer. The Intel Compute Stick weighs only 60.2g. When the Compute Stick in package- it weighs around 425.4g. Almost all the Conventional desktop weighs more than 1kg.
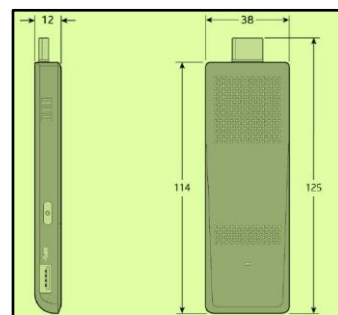


**Figure 2:** Aesthetics of Intel Compute Stick

## 4. Applications of Intel Compute Stick

Intel Compute stick can be used for general Computing, Project Presentation, media Centre applications, video Streaming. It can be used anywhere as the size of Compute stick is equal to that of Flash drive. It can be used in Kiosks, using Windows Kiosk Mode.

## 5. Conclusion

We have done a comparative study of conventional desktop and Intel Compute stick in terms specifications and aesthetics. Compute Stick can simply handle the basics of regular computing, it should never be used for working with heavy programs such as movie editing. The Intel Compute Stick shows how bright the future of computing. The size of the compute stick is very less compared to other types of

computer. It has a good performance and also we can transform any HDMI TV or monitor to a computer. It is implemented in many kiosks, projects and also for Presentation. Thus we conclude that Compute Stick can be used for low performance task such as playing medias and also applications where the size of computer is the constrain.

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