

# Processor Name Convention for Dummies

Very few people understand the naming convention of Intel and specially AMD processors as gibberish and unrelated. We will ride through this piece and check if the processor names are following a particular naming scheme or being given name randomly.

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## Intel Processor Name Scheme

Intel processor names are being given in order since the first generation and they did mention the convention by which processors are named within their website. lets follow the picture above we will try to check the different segments of a processor name according to the scheme supplied to us.

### 1) Company Name

The first segment of the name implies the Company, for Intel it is marked as Intel®, there is no further discussion needed about it.

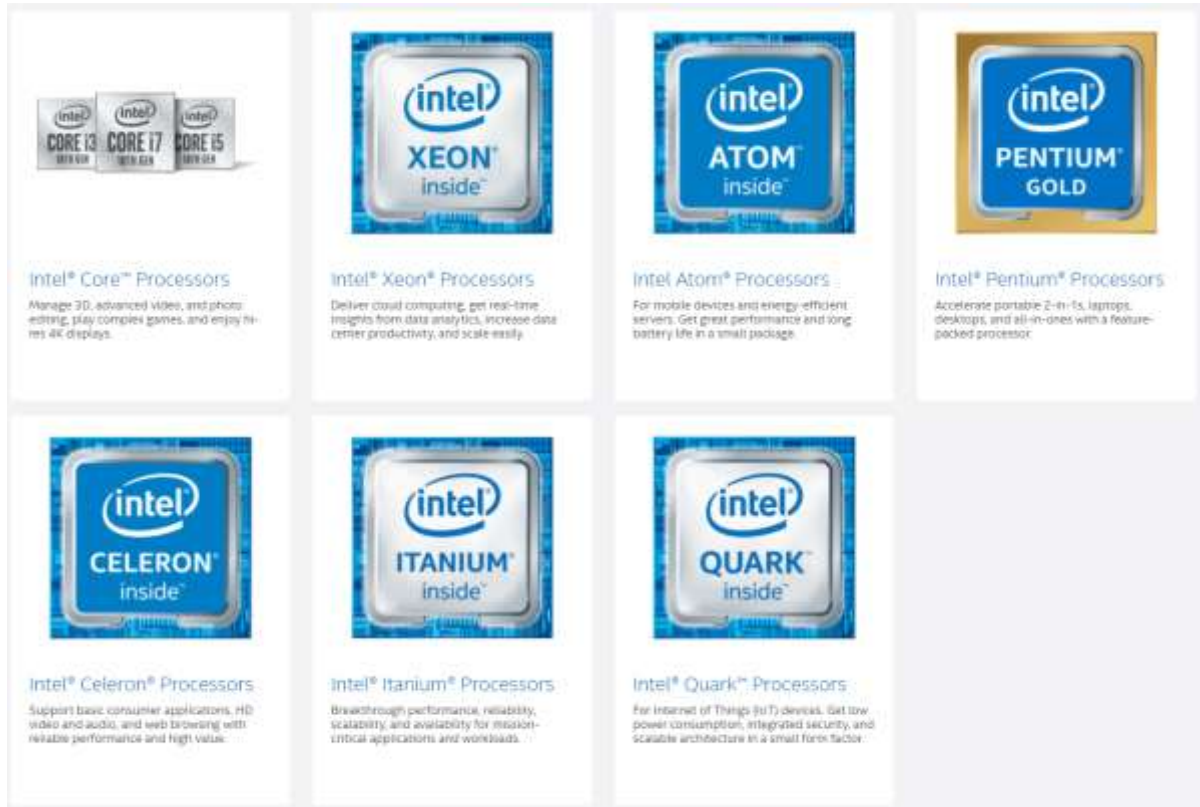
### 2) Brand Name

Now the second segment of the processor name is called as "brand name" by [intel](#) and they imply what brand of intel processor that is. The available [brands of Intel processor](#) list are as below :

1. [Core™](#)

2. [Xeon®](#)
3. [Atom®](#)
4. [Pentium®](#)
5. [Celeron®](#)
6. [Itanium®](#)
7. [Quark™](#)

Again each brand has its own subsections, known as "brand modifier"s.



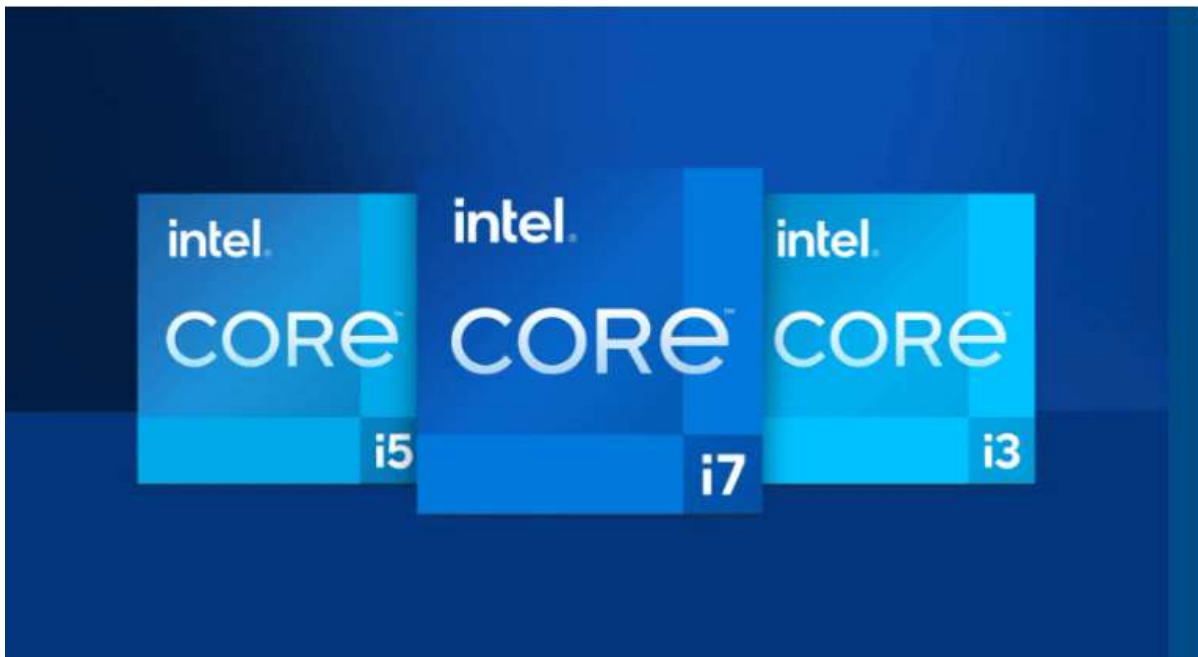
### 3) Brand Modifier / Lineup

Brand Modifiers are the third part of the Intel processor name. There all the brands mentioned there are subdivided into their Lineups, which Intel calls as brand modifiers. The Lineups / Brand Modifiers for the processors are listed as below :

1. **Core™ Brand Lineups**
  - Core™ X-Series
  - Core™ i9
  - Core™ i7
  - Core™ i5
  - Core™ i3
  - Core™ vPro®
  - Core™ m3
2. **Xeon® Brand Lineups**
  - Xeon® Scalable
  - Xeon® D
  - Xeon® W
  - Xeon® E
3. **Atom® Brand Lineups**
  - Atom® P
  - Atom® C



- Atom® x7
- Atom® x5
- Atom® x3
- Atom® for OIT
- 4. Pentium® Brand Lineups**
  - Pentium® Gold
  - Pentium® Silver
  - Pentium®
  - Pentium® D
- 5. Celeron® Brand Lineups**
  - Celeron®
  - Celeron® G
  - Celeron® J
  - Celeron® N
  - Celeron® D
- 6. Itanium® Brand Lineups**
  - Itanium®
- 7. Quark™ Brand Lineups**
  - Quark™ Microcontroller
  - Quark™ SE



## 4) Generation Name

Intel is pretty straightforward to mention the generation name in the 4th segment of any processor name. It started from generation 1 and till now 11 generations are going on in Intel Processor family.

However, this mainly applies for Intel Core Brand processors, other Intel brands have their own meanings. For example Intel Celeron and Pentium do not have any numeric generation numbers. They have letters and alphanumeric combinations that explain the use and type of the processor name, much like the Product Line Suffix for Intel Core brands.

### Lineup Explanation for Intel® Celeron® Processors Name

- **Celeron N:** For Laptop (Low Performance)
- **Celeron J:** For Desktop (Low Performance)

- **Celeron G:** For Desktop (High Performance)
- **Celeron D:** For Laptop (High Performance)

#### **Lineup Explanation for Intel® Pentium® Processor Name**

- **Intel Pentium N:** For Notebooks (Medium Performance)
- **Intel Pentium G:** For Desktops (High Performance)
- **Intel Pentium J:** For Desktops (Low Performance)
- **Intel Pentium Y:** For Mobile / Tablet (Lowest Performance)
- **Intel Pentium U:** For Ultrabooks (Low Performance)
- **Intel Pentium D:** For Desktop (Medium Performance)

#### **Lineup Explanation for Intel® Xeon® Processor Name**

- **Xeon® Scalable :** For Servers (High Workload)
- **Xeon® D :** For Servers (Low Power)
- **Xeon® W :** For Servers (High Performance)
- **Xeon® E:** For Mobile Servers (Integrated Graphics)

#### **Lineup Explanation for Intel® Atom® Processor Name**

- **Atom® P :** For Servers (Networking with Low Latency)
- **Atom® C :** For Servers (Low Power)
- **Atom® x7 :** For Tablets (3D Scanning)
- **Atom® x5 :** For Mobile (Gaming Support)
- **Atom® x3 :** For Mobile (Dual Camera Support)
- **Atom® for OIT :** For Consumer Devices (Low Power)

#### **Lineup Explanation for Intel® Itanium® Processors**

- **Itanium® 9 :** For Servers (Power Efficient)

#### **Lineup Explanation for Intel® Quark™ Processors**

- **Quark™ SE :** For Embedded Systems
- **Quark™ Microcontroller :** For Microcontrollers

## **5) SKU Number**

This is mostly a generic model number printed by Intel and it consists of 3 numeric digits.

## **6) Product Line Suffix**

The last letter or letters in the processor name is called "product line suffix" by Intel. This is an indicator of the processor type and its use, and what type of operating system it supports. Below are the common types of Product Line Suffix for Intel Core Branded Processors.

#### **Intel® Core™ Processor Suffixes**

**E** - For Embedded Systems ( Low Power)

**F** - For Desktop (Requires dedicated external graphics card)

**G** - For Desktop & Mobile (With Inbuilt Graphics)

**G1-G7** - For Desktop (Level of Integrated Graphics)

**H** - For Mobile (High Performance)

**HK** - For Mobile (High performance, Unlocked for Overclocking)

**HQ** - For Mobile (High performance, 4 Cores)

**K** - For desktop (Unlocked for Overclocking)

**S** - For Desktop (Special Performance with Low TDP)

**T** - For Desktop (Ultra Low Power)

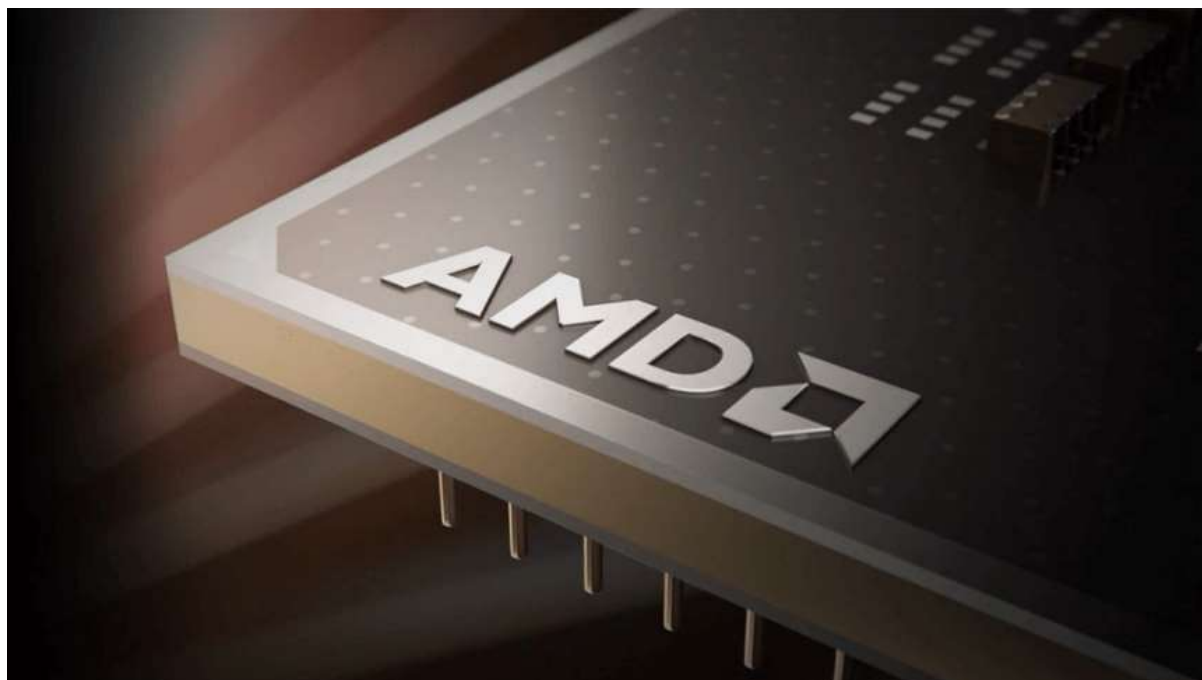
**U** - For Mobile (Low Power)

**Y** - For Mobile (Ultra Low Power)

These suffixes, most of the times, are combined because one processor serves more than one purpose. Especially for newer generation Intel pc processors.

## Rule Exceptions for Intel Processor Names

The only exception of rules intel processor has that it has processor suffixes different for core brands and other brands. And Apart from Core brand, other brands do not have any visible generation types.



## AMD Processor Names Explained

Unlike Intel, AMD do not have any official explanation of their names, neither they tend to follow a common pattern for naming all their processors. Below are the naming convention analysis for AMD Processors.

## 1) Company Name

In all the processors, the company name is mentioned as AMD, their full name is Advanced Micro Devices. All the AMD processors include AMD names at the beginning.

## 2) Family Name (Brand)

AMD has a variety of processor families for specific purposes, the list is far more vast than Intel. Below are all the family of Processor AMD made :

1. AMD
2. [Athlon™](#)
3. Duron
4. [Sempron™](#)
5. [Turion™](#)
6. [Opteron™](#)
7. [Phenom™](#)
8. [FX](#)
9. [A-Series](#)
10. [E-Series](#)
11. [K-Series](#)
12. [R-Series](#)
13. [V-Series](#)
14. [Ryzen™](#)
15. [Athlon Pro™](#)
16. [Ryzen Pro™](#)
17. [Threadripper™](#)
18. [Threadripper Pro™](#)
19. [EPYC™](#)

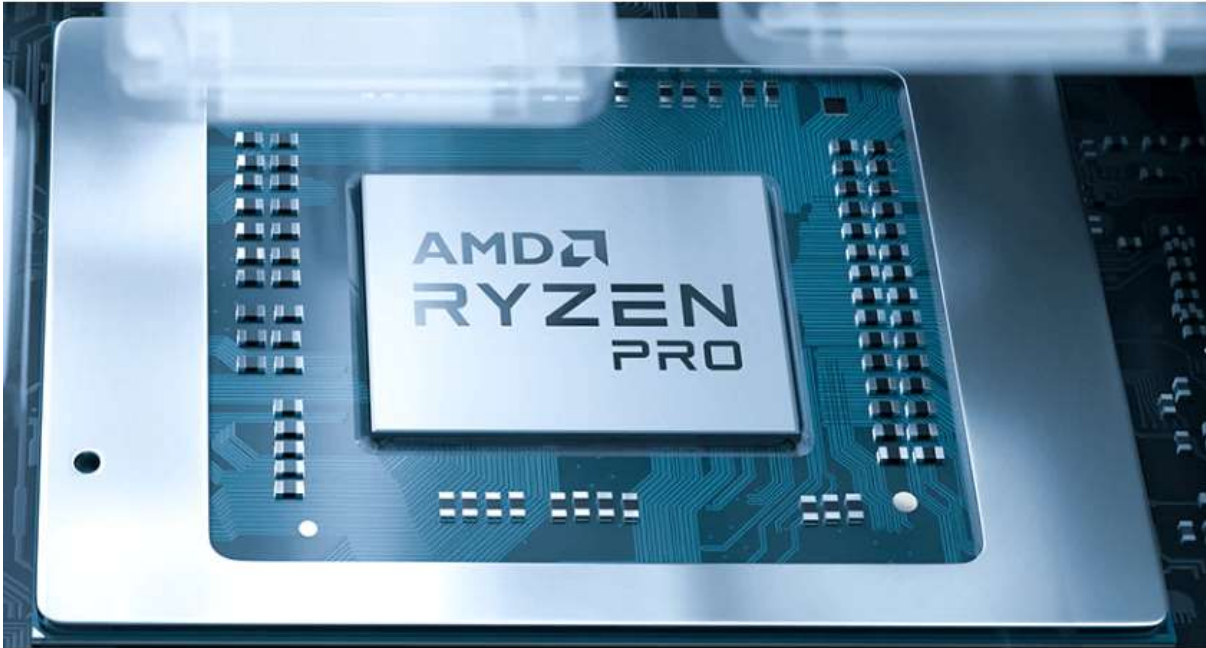


## 3) Lineup

Different families or brands of AMD processors are divided into Lineups or Line depending on their generation, processing power and particular use. The available line details from AMD are listed below :

### Product Line of AMD Processors

- AMD 3000 Series



### **Product Line of A-Series Processors**

- A4-Series
- A6-Series
- A8-Series
- A10-Series
- A12-Series

### **Product Line of Athlon™ Processors**

- Athlon™
- Athlon™ 3000 G
- Athlon™ X4
- Athlon™ II X2
- Athlon™ II X3
- Athlon™ II X4
- Athlon™ Quad-Core

### **Product Line of Sempron™ Processors**

- Sempron™
- Sempron™ Dual Core
- Sempron™ Quad Core

### **Product Line of Turion™ Processors**

- Turion™ 64 X2

### **Product Line of Opteron™ Processors**

- Opteron™ X110
- Opteron™ 6300
- Opteron™ 6200
- Opteron™ 6100
- Opteron™ 4300
- Opteron™ 4200



- Opteron™ 3300
- Opteron™ 3200
- Opteron™ X2100

#### **Product Line of Phenom™ Processors**

- Phenom™ II X6
- Phenom™ II X4
- Phenom™ II X2
- Phenom™ II
- Phenom™ X4
- Phenom™ X3
- Phenom™ X2

#### **Product Line of FX Processors**

- FX for AIOs
- FX 4 Core
- FX 6 Core
- FX 8 Core

#### **Product Line of Athlon Pro™ Processors**

- Athlon Pro™ Mobile
- Athlon Pro™ Desktop
- Athlon Pro™ 3000

#### **Product Line of E-Series Processors**

- E1 Series for AIOs
- E1 Series for Laptops
- E2 Series for AIOs
- E2 Series for Laptops

#### **Product Line of Ryzen™ Processors**

- Ryzen™ 3
- Ryzen™ 3 APU
- Ryzen™ 5
- Ryzen™ 5 APU
- Ryzen™ 7
- Ryzen™ 7 APU (OEM Only)
- Ryzen™ 9

#### **Product Line of Ryzen Pro™ Processors**

- Ryzen 3 Pro™
- Ryzen 5 Pro™
- Ryzen 7 Pro™
- Ryzen 9 Pro™

#### **Product Line of Ryzen Threadripper™ Processors**

- Ryzen Threadripper™ 3000



- Ryzen Threadripper™ 4000
- [Ryzen Threadripper™ 5000](#)

### Product Line of Ryzen Threadripper Pro™ Processors

- Ryzen Threadripper Pro™ 3000

### Product Line of Ryzen EPYC™ Processors

- Ryzen EPYC™ 7001
- Ryzen EPYC™ 7002



## 4) Generation Prefix

AMD does not maintain a clear naming convention on the Generation prefix, at least not for the processors released over 5 years ago. While it is foggy about the predecessors of Ryzen family, the later ones come with proper names that match the scheme with each other. Intel also has names for all generations of processors like 8th generation is called coffee lake.

## 5) Model Number

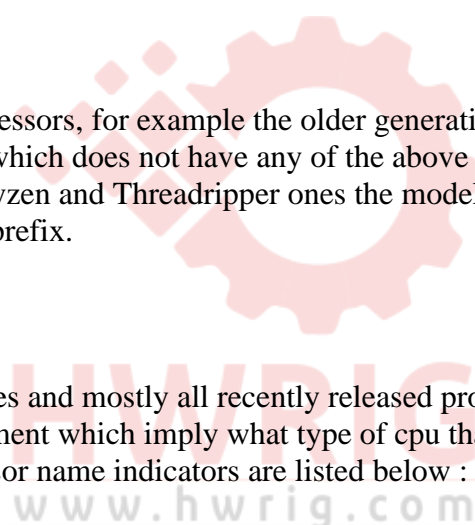
Model number is also somewhat arbitrary in AMD processors, for example the older generation of processors came with processor names such as TL-60, which does not have any of the above characteristics we have discussed above. However in Ryzen and Threadripper ones the model number is a 3 digit number followed by the generation prefix.

## 6) Processor Type Indicator

There are several types of processors AMD manufactures and mostly all recently released processors names maintain one or more letter at the end of the segment which imply what type of cpu that is, and what is its use. The common types of AMD Processor name indicators are listed below :

### AMD Processor Series Types (Suffix)

- X - For Desktop (Extended Base Clock speed)
- XT - For Desktop (Extended Boost Clock rate)
- U - For Laptops (Low Power)
- H - For Laptops (High Performance)



HS - For Laptops (High Performance in Lower Power)  
G - [For Embedded Systems](#) (Low Power)  
G - For Desktop Processors (integrated Graphics)  
E - For Laptops & AIOs (Low Power)  
GE - For Desktops (Integrated Graphics with Low Power)  
C - For Notebooks & Ultrabooks ( Integrated Graphics with Low Power)  
P - For Servers (Professional Performance)

## AMD Processor Names Exceptions

Whereas its processor lineup or processor type, AMD processor name convention has lots of ambiguity. For example the GE series is available as a standalone processor in Athlon family but it becomes OEM processor for Ryzen family. Similarly, the G type processors are available as embedded system CPUs but also the Ryzen APU with integrated graphics are also named with G prefix.

Thus we have tried to cover all the aspects of a process name and its different segments below. The data we have collected are from various websites online, along with Intel and AMD's own website. If we missed something or given any wrong information, please let us know in a comment and we will rectify that asap.

## Important Links :

[Download/View Full list of AMD Processors & Specs](#)

[Check All types of Intel Processors](#)

[AMD Resources for System Builders](#)

[Intel CPU Driver Download](#)

[AMD CPU & GPU Driver Download](#)