

Intel® GNA Driver

Bring Up Guide for Ice Lake Platform

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Revision History

Document Number	Revision Number	Description	Revision Date
	0.5	Initial release.	August 2018
	0.6	ICL PV Drop	August 2019
	0.7	ICL PR Release	August 2019



1 Introduction

1.1 Purpose and Scope of Document

This document provides installation instructions and bring up guideline to verify if the GNA device is available and functional on Intel platform with Intel GNA driver installed on Windows* 10 64bit Operating System.

All screenshots presented in the document are from Windows* 10.

1.2 Acronyms and Terminology

Term	Description
BIOS	Basic Input/output System
BKC	Best Known Configuration
CRB	Customer Reference Board
GMM	Gaussian Mixture Module
GNA	GMM and Neural Network Accelerator
IHV	Independent Hardware Vendor
ISV	Independent Software Vendor
MSFT	Microsoft Corporation
OS	Operating System
PCH	Platform Controller Hub
RVP	Reference Validation Platform

1.3 What is needed for GMM Bring Up

- GNA is enabled in platform BIOS
- Intel GNA driver installed in the system
 - Files: gna.sys, gna.inf, gna.cat

All files are distributed in Intel GNA release package.



2 GNA Bring Up

2.1 General Flow

- Check if GNA is available
 - the platform supports GNA
 - GNA is enabled in BIOS
 - the GNA driver is installed correctly

If you cannot resolve the problem using the guide, contact the Intel CCE Audio Team

2.2 GNA Support Platform

GNA functionality is available on the following Intel platforms:

CPU Family Name	Device ID	Bus/Device/Function
Cannon Lake (CNL)	PCI\VEN_8086&DEV_5A11	0/8/0
Ice Lake (ICL)	PCI\VEN_8086&DEV_8A11	0/8/0

2.3 Enable GNA in BIOS

2.3.1 Cannon Lake and Ice Lake Platform

1. Enter platform BIOS set-up
2. Check the GNA status at the following path (This path might differ on various platforms and BIOS versions):
 - **Intel Advanced Menu → System Agent (SA) Configuration → GNA Device (B0:D8:F0)** (Figure 1)
3. If there's no GNA entry, then
 - the BIOS version doesn't provide with the GNA enabling capabilities → contact the Intel CCE team to get the correct BIOS version:
4. Set '**GNA device**' to **Enabled**

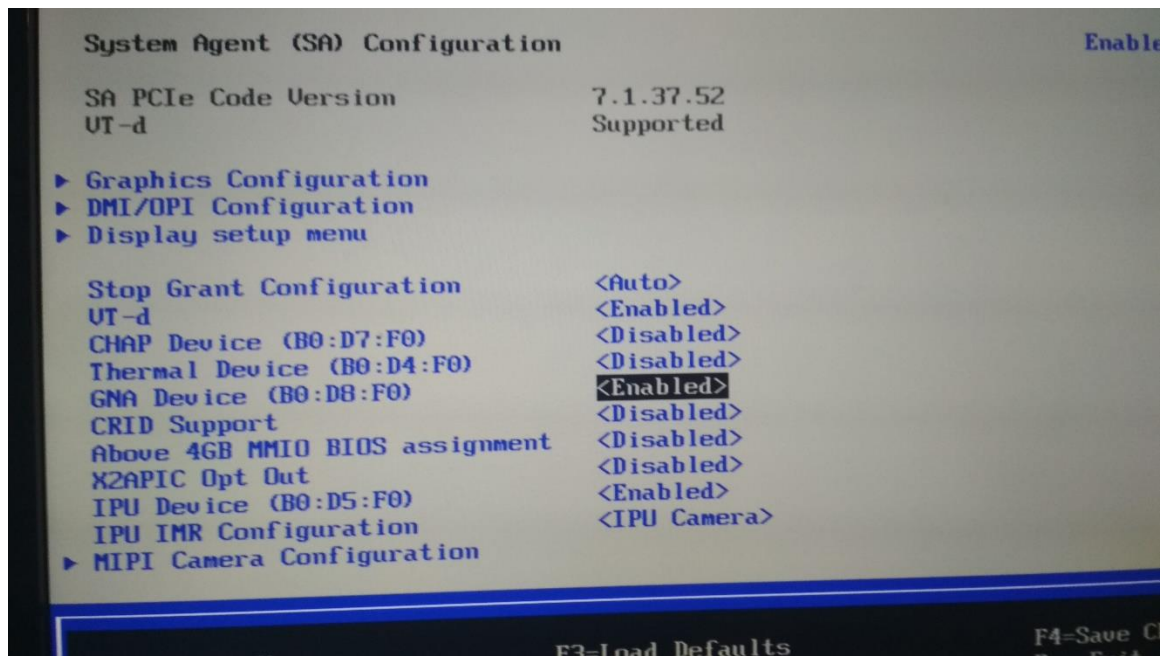


Figure 1 Cannon Lake & Ice Lake Intel BIOS (example on an RVP board)

2.4 Intel GNA Driver Installation

2.4.1 Manual Installation

The GNA driver can be installed manually using the INF file (see Figure 2):

- click the right mouse button on "*gna.inf*"
- select "*Install*"
- expect message "*The operation completed successfully*" in the case of the successful installation

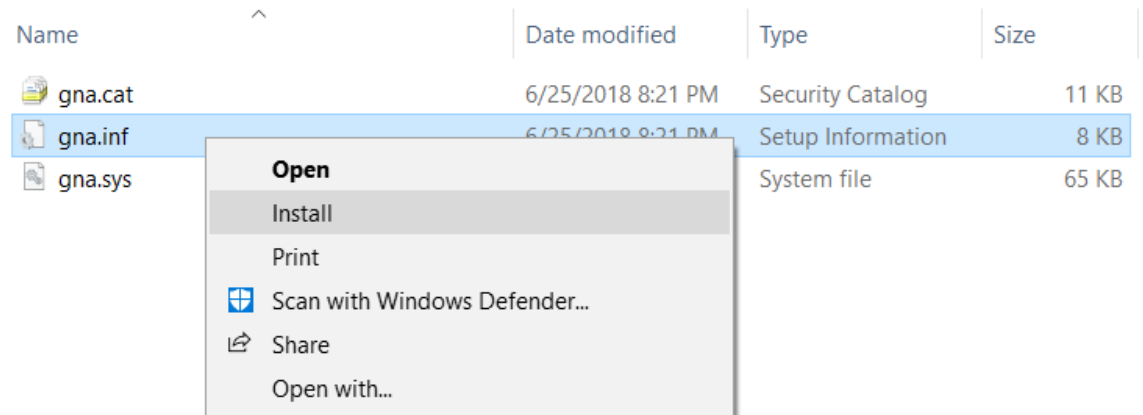


Fig.2. Manual GNA driver installation

2.4.2 Driver Installation Verification

It is recommended to check in Windows* Device Manager if the newly installed GNA driver is seen:

- go to "System devices" category and look for "Intel® GNA Scoring Accelerator module"
- make sure there's no new yellow bang

Refer to section 2.3 for more details.

2.4.3 Windows Update

Windows Update can automatically install the GNA driver after the device detection if there's no other GNA driver installed, including Null Driver.

The update of the GNA driver can be also enforced in Windows* Device Manager:

- Find:
 - "Base System Device" in the root directory
- click the right mouse button on it
- select "Update Driver"
 - note: by default, a newer driver version overrides a previous one, however it is recommended to uninstall the previous GNA driver manually before installing the new one
- choose option "Search automatically for updated driver software" (see Figure 3)



← Update Drivers - Base System Device

How do you want to search for drivers?

→ Search automatically for updated driver software

Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.

→ Browse my computer for driver software

Locate and install driver software manually.

Cancel

Figure 3 Windows Update: *search automatically for updated driver software*

2.5 Verify GNA Driver installation

Open Windows* Device Manager

Go to "System devices" category and look for "**Intel® GNA Scoring Accelerator module**"

- If the GNA device is present without Yellow bang (see Figure 4)
 - **Meaning: GNA is available** (supported by the platform, enabled in BIOS and the GNA driver installed correctly)
 - Bus, Device, Function and Device ID are listed in *Properties* (click the right mouse button and select "Properties")

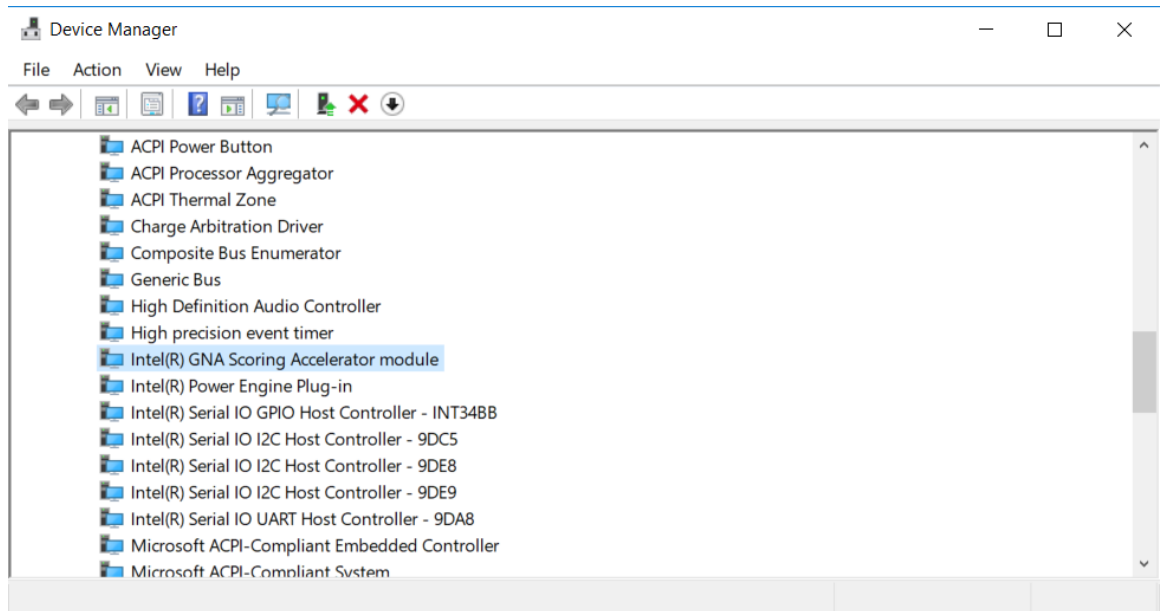


Figure 4 Correctly installed GNA driver (example)

Go to “*Other devices*” category and look for “**Base System Device**”

- If the device is detected with the yellow bang (see Figure 5)
 - **Meaning:** GNA is enabled in BIOS, and the GNA driver is missing
 - **Action:** install the GNA driver (Chapter 2.4)

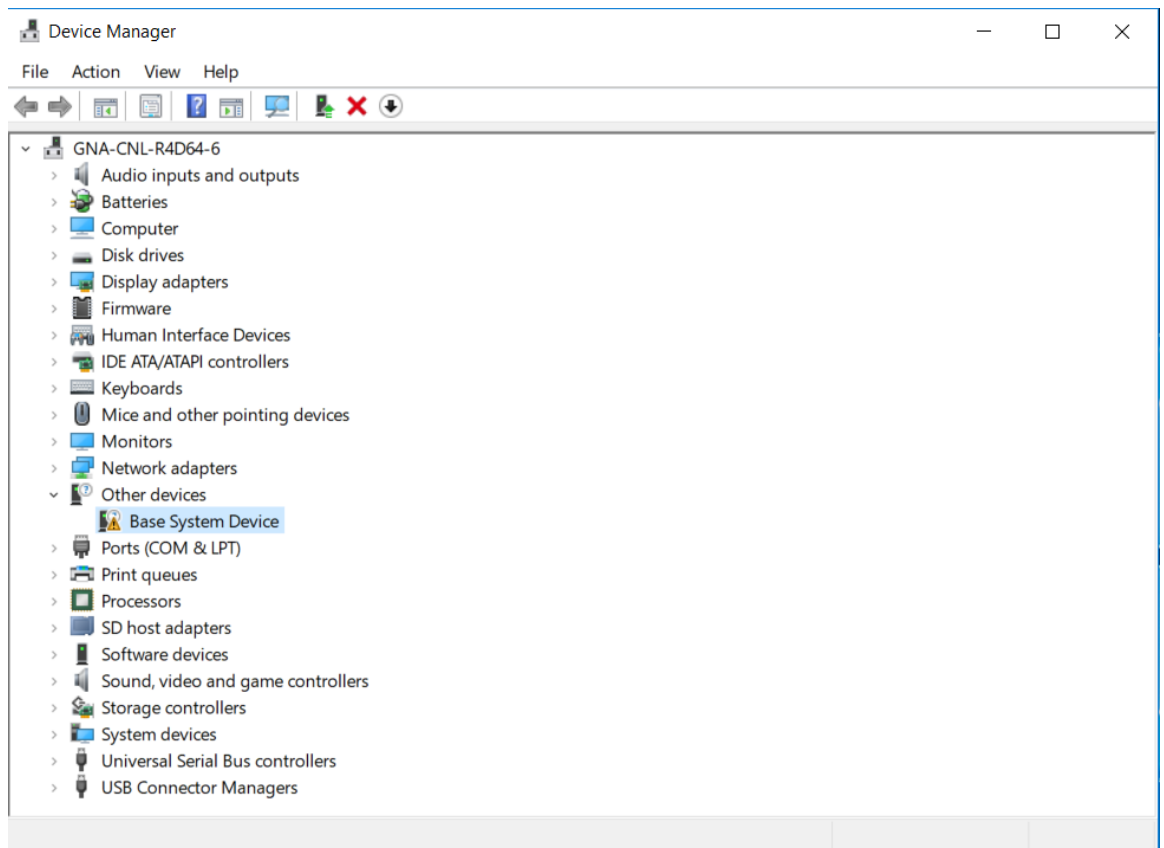


Figure 5 Windows* Device Manager without GNA driver (example)