

## 1 Subject

Affected Products	conga-EAF		
Subject	ISA Bus Limitations		
(Confidential/Public)	Confidential		
Date (dd.mm.yy)	19.02.11	Author	CJR

## 2 Affected Article Numbers

Article Number(s)	Product
All conga-EAF variants	conga-EAF

## 3 Information

The AMD chipset used on conga-EAF does not offer native support for the ISA bus. The ISA bus is provided by an ITE8888 PCI to ISA bridge. The combination of the chipset, the PCI to ISA bridge and the UEFI firmware running on the conga-EAF does not offer a 100% compatible ISA bus.

These are the known limitations.



### Note

*Some of the known limitations have been resolved since this document was created and are highlighted in orange and crossed out.*

### The following IRQs can be used for ISA (3 in total):

- IRQ5 unconditionally available for ISA bus only
- ~~Two~~ **Three** additional IRQs (3, 4, 6, 7, 10, 11, 14 or 15) can be made available for the ISA bus via BIOS setup nodes. See section "PCI Configuration Submenu" in the conga-EAF user's guide. The selection of these three additional ISA IRQs is only available in BIOS version EBRAR901.
- When using IRQ3, IRQ4 or IRQ7, the respective onboard Super I/O device (COM1, COM2, LPT) must be disabled.
- IRQ14 and IRQ15 are only available for the ISA bus as long as the internal SATA controller is not set to legacy mode (default is native mode).

### ~~No ISA DMA support~~

- ~~Due to this limitation, there is no support for ISA sound cards and SCSI cards since these cards require ISA DMA transfers.~~



### Note

*The emulated DMA support requires the usage of SMIs (System Management*

Interrupts). Due to the high timing impact of SMIs, this mechanism is most likely not adequate for a hard real time environment.

## No support for ISA VGA cards

- ISA graphic cards are not supported.

## ISA memory support limitations

- ISA memory can only be accessed in the D0000h to DFFFFh range. ~~There is no 15-16MB memory hole support. ISA OptionROMs are not executed by the UEFI firmware.~~

## ISA I/O support limitations

- I/O addresses 2F8h-2FFh, 3F8h-3FFh, 378h-37fh, 778h-77Fh and A00h-A0Fh are unconditionally routed to LPC. This means they are not available for ISA.
- All other I/O addresses > 100h are available as long as they are not used by PCI/PCIe Express or chipset internal devices.

## ~~No support for ISA PnP~~

- ~~• The UEFI does not offer any support for Plug & Play and therefore there is no support for ISA Plug & Play. This means that a PnP ISA card cannot be expected to work. No ISA PnP configuration cycle will be executed by the UEFI. The card will usually resort back to its default configuration. Since no PnP memory structures will be added by the UEFI, there is the possibility that the device drivers will not work after loading the OS.~~

## 4 Revision History

Revision	Date (dd.mm.yy)	Author	Changes
1.0	19.02.11	CJR	Initial release
1.1	13.10.11	CJR	Updated to reflect ISA IRQ support in BIOS EBRAR010. Clear statement that ISA OptionROMs are not executed during BIOS POST.
1.2	23.05.12	CJR	Updated to reflect the improvements with a new BIOS supporting the emulation of some missing hardware features. EBRAR901.BIN. <del>All the resolved limitations are highlighted in orange and crossed out.</del>