

congatec Application Note #42

Affected Products	All products featuring AMI Aptio® V UEFI firmware and released after 2018
Subject	How to view BIOS setup descriptions using CgMlfViewer with MLF
Confidential/Public	Public (not restricted to customers or general public)
Author	BEU

Revision History

Revision	Date (yyyy-mm-dd)	Author	Changes
1.0	2019-11-20	BEU	First release

Preface

This application note explains how to view the BIOS setup description of congatec products released after 2018 that feature an AMI Aptio® UEFI firmware by using the CgMlfViewer with a Menu Layout File (MLF). The CgMlfViewer is currently only available for Windows 10.

Disclaimer

The information contained within this Application Note, including but not limited to any product specification, is subject to change without notice.

congatec AG provides no warranty with regard to this Application Note or any other information contained herein and hereby expressly disclaims any implied warranties of merchantability or fitness for any particular purpose with regard to any of the foregoing. congatec AG assumes no liability for any damages incurred directly or indirectly from any technical or typographical errors or omissions contained herein or for discrepancies between the product and the Application Note. In no event shall congatec AG be liable for any incidental, consequential, special, or exemplary damages, whether based on tort, contract or otherwise, arising out of or in connection with this Application Note or any other information contained herein or the use thereof.

Intended Audience

This Application Note is intended for technically qualified personnel. It is not intended for general audiences.

Electrostatic Sensitive Device

All congatec AG products are electrostatic sensitive devices and are packaged accordingly. Do not open or handle a congatec AG product except at an electrostatic-free workstation. Additionally, do not ship or store congatec AG products near strong electrostatic, electromagnetic, magnetic, or radioactive fields unless the device is contained within its original manufacturer's packaging. Be aware that failure to comply with these guidelines will void the congatec AG Limited Warranty.

Technical Support

congatec AG technicians and engineers are committed to providing the best possible technical support for our customers so that our products can be easily used and implemented. We request that you first visit our website at www.congatec.com for the latest documentation, utilities and drivers, which have been made available to assist you. If you still require assistance after visiting our website then contact our technical support department by email at support@congatec.com

Symbols

The following are symbols used in this application note.



Note

Notes call attention to important information that should be observed.



Caution

Cautions warn the user about how to prevent damage to hardware or loss of data.



Warning

Warnings indicate that personal injury can occur if the information is not observed.

Copyright Notice

Copyright © 2019, congatec AG. All rights reserved. All text, pictures and graphics are protected by copyrights. No copying is permitted without written permission from congatec AG.

congatec AG has made every attempt to ensure that the information in this document is accurate yet the information contained within is supplied “as-is”.

Trademarks

Product names, logos, brands, and other trademarks featured or referred to within this user’s guide or the congatec website, are the property of their respective trademark holders. These trademark holders are not affiliated with congatec AG, our products, or our website.

Terminology

Term	Description
MLF	Menu Layout File
POST	Power-On Self-Test

1 BIOS Setup Description

This application note explains how to view the BIOS setup description of a congatec product released after 2018 that feature an AMI Aptio® UEFI firmware using the CgMlfViewer with a Menu Layout File (MLF). Each MLF contains the BIOS setup description of a particular congatec product and can be viewed using the CgMlfViewer. The CgMlfViewer is currently only available for Windows 10.

1.1 Prerequisites

This section explains how to get the MLF and CgMlfViewer.

1.1.1 Menu Layout File (MLF)

Each MLF contains the BIOS setup description of a particular congatec product. It can be either downloaded from the congatec website or created by yourself if you have the particular congatec product with the desired BIOS revision.

If you have the congatec product, follow the steps below to generate the MLF:

1. Attach a FAT16 or FAT32 USB stick¹ to the system with the congatec product
2. During POST, press the key to enter the BIOS setup program
3. Navigate to the tab labeled "Save & Exit"
4. Select "Generate Menu Layout File"
5. Press <Enter>
6. A popup will appear showing the progress

The MLF is now stored on the attached USB stick.

If you do not have the congatec product, follow the steps below to download the MLF:

1. Login to the restricted area at www.congatec.com
2. Click on "PCN Software/Firmware and Downloads"
3. Select the desired congatec product from the drop-down menu
4. Click on the desired BIOS revision
5. Download the zip file (e.g. TA50R152.zip) listed below "Related Files"

The MLF is included² in the zip file.

Note

¹ Only USB sticks with a FAT16 or FAT32 file system are supported.

² MLF are only provided for Mass Production (MP) BIOS revisions. MP BIOS revisions released before 01.01.2020 may not include the MLF in the zip file.

1.1.2 CgMlfViewer

The CgMlfViewer is required to view an MLF. Follow the steps below to install it:

1. Open the congatec website www.congatec.com
2. Navigate to the web page of a congatec product
3. Click on the tab labeled "Software"¹
4. Download the CgMlfViewer²
5. Extract the file in a folder of your choice
6. Open the folder and follow the instructions in the readme



Note

¹ If the Software tab is not available, navigate to the web page of an older product. The CgMlfViewer is the same for every congatec product.

² The CgMlfViewer is currently only available for Windows 10.

1.2 Opening the MLF in CgMlfViewer

Follow the steps below to open the MLF in the CgMlfViewer:

1. Start the CgMlfViewer (see section 1.1.2 "CgMlfViewer")
2. Click on the button 
3. Select and open the MLF (see section 1.1.1 "Menu Layout File (MLF)")

The BIOS setup description is now displayed.

1.3 Understanding the BIOS Setup Description

The CgMlfViewer displays the same items and help text as the BIOS setup program. The items are also structured in the same order as in the BIOS setup program. However, the structure may appear different compared to the BIOS setup program, e.g. some items appear twice or are displayed in the CgMlfViewer but not in the BIOS setup program. This is normal and depends on the different item types and conditions explained in the sections below.

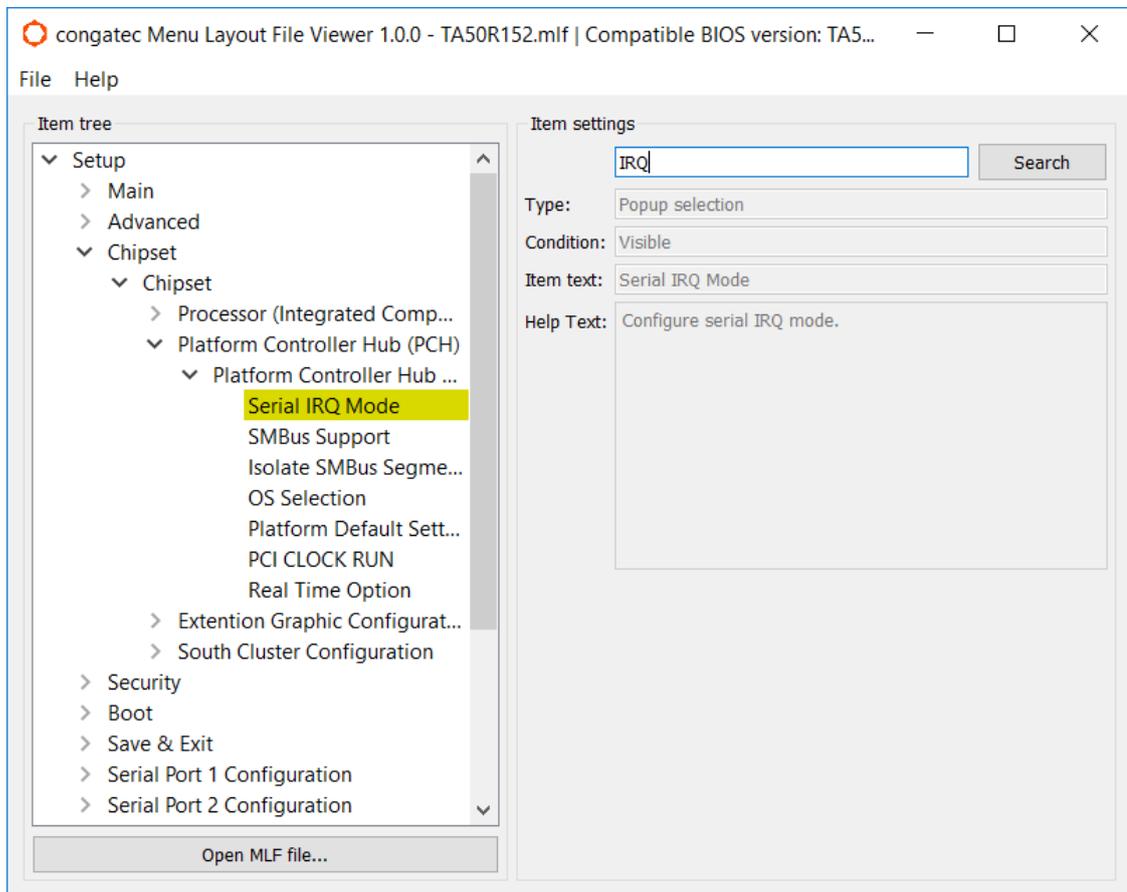


Note

This application note only covers information related to viewing the BIOS setup description. To modify the MLF, read application note "AN 35 BIOS Setup Configuration".

1.3.1 CgMlfViewer User Interface

The screenshot below shows the CgMlfViewer user interface:



The left frame displays the item tree. **The items in the item tree are named and structured in the same order as in the BIOS setup program.** Open the branch of an item tree by clicking on the arrow next to it.

The right frame displays the item settings and provides a search function. Enter a keyword into the search box (e.g. IRQ) and press enter to **highlight** all items in the item tree which contain the keyword in the type, condition, item text, or help text.

Click on an item of the item tree to display its type, condition, item text and help text. **The help text is the same as the help text in the BIOS setup program** and usually provides information about the selectable system settings. Not all items have a help text.

1.3.2 Item Setting: Type

The type of an item defines where the item is displayed in the BIOS setup program and whether its setting can be changed. To change the setting of an item in the BIOS setup program, its condition must be visible (see section 1.3.3 “Item Setting: Condition”).

The table below explains each item type:

Type	Explanation
Page	<p>This item type is not displayed in the BIOS setup program even if the condition is set to visible. It is used for structuring the item tree only.</p> <p>Note: A Page type item often has the same name as a SubMenu type item. Therefore, the same item name can appear twice in the item tree.</p>
SubMenu	<p>If the item is a first level branch of the “Setup” item, it is displayed in the menu bar of the BIOS setup program (e.g. Main, Advanced, etc.).</p> <p>If the item is not a first level branch of the “Setup” item, it is displayed in the left frame of the BIOS setup program after navigating through the other branches (e.g. Advanced -> Watchdog).</p>
Popup selection	<p>When this item is selected and <Enter> is pressed, the BIOS setup program displays the available settings for this item in the center of the screen. The setting can be changed in the BIOS setup program.</p> <p>Note: The available settings cannot be viewed in the CgMifViewer. However, the help text may include information about available settings.</p>
Text	<p>This item displays a value (e.g. CPU Temperature: +57 C) in the BIOS setup program. The value cannot be changed in the BIOS setup program.</p>
Numeric	<p>The value of this item can be changed in the BIOS setup program by typing it on the keyboard (e.g. TDP Limit: 35).</p>
Date	<p>This item displays a date that can be changed in the BIOS setup program (e.g. System Date: [Thu 06/07/2018]). Navigate through the month/day/year with the <TAB> key.</p>
Time	<p>This item displays a time that can be changed in the BIOS setup program (e.g. System Time: [17:31:00]). Navigate through the hour:minute:second with the <TAB> key.</p>
Memo	<p>This item displays information that cannot be changed in the BIOS setup program.</p>
Checkbox	<p>This item can be enabled or disabled in the BIOS setup program. This item type is similar to the item type “Popup selection”.</p>

1.3.3 Item Setting: Condition

The condition of an item defines whether the item is visible, suppressed, or grayed out in the BIOS setup program.

The table below explains each item condition:

Condition	Explanation
Visible	The item is displayed in the BIOS setup program. Note: A Page type item is never displayed.
Suppressed	The item is NOT displayed in the BIOS setup program. Note: Some suppressed items can become visible in the BIOS setup program and vice versa depending on one or more other settings. The help text of an item may include information about its dependencies.
Grayed out	The item is displayed in grey in the BIOS setup program. It cannot be selected in the BIOS setup program. Note: Some grayed out items can become visible in the BIOS setup program and vice versa depending on one or more other settings. The help text of an item may include information about its dependencies.
Hidden	N/A
Unknown	N/A