

WMI Design Specification



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Revision History

Version Revision	Issue Date	Comments	Author
	Year/Month/Day		
0.1	2009/11/10	First release	Yiwen Liu
0.2	2009/12/11	<ul style="list-style-type: none"> (1) Add Set Device Boot Sequence in summary table (2) Method8, Set device boot priority add command length and change wording to “Set device boot priority” in Arg2 (3) Method13, Load BIOS Default, add 1 is user default set. (4) Change password to 8 bytes scan code (5) Change command “Removable” to “RMV” so every boot device command is 3 characters and also force command case-sensitive (6) Change Error Code to Return Code and require every function to return Success or not. (7) Password is scancode but Command and other strings passed in/out is Unicode. (8) Change all “Length” field to 2 bytes and numerical field to 2 bytes. 	Joe Lin, Yiwen Liu
0.3	2009/12/15	<ul style="list-style-type: none"> (1) Add “No user default found”, “Empty password” error code (2) Change maximum boot device count to 16 (3) Require password being set before when using “Set user/supervisor password” method (4) Separate “Get BIOS settings”, “Set BIOS settings” to another object. And this object will only open to SI/VAR. 	Joe Lin, Yiwen Liu
0.4	2009/12/18	<ul style="list-style-type: none"> (1) Separate Load BIOS Default 0, 1 to Load BIOS default and Load User Default (2) Move Check user/supervisor password, Set user/ supervisor password to “ACPI Control method for Commercial Tools” (3) Remove “Empty password” error code 	Yiwen Liu
2.0	2009/12/18	Add Touch button event for Desktop	Yiwen Liu
2.1	2010/01/11	<ul style="list-style-type: none"> (1) Add Get group boot sequence (2) Separate “Get boot device information” to “Get boot device model name” and “Get boot device serial number” 	Yiwen Liu
2.2	2010/01/13	(1) Change sequence and ID or Get/Set group boot sequence and Get/Set device boot priority.	Yiwen Liu
2.3	2010/01/18	Change return parameter size to multiple of 4	Yiwen Liu
2.4	2010/01/19	Correct method ID 9 return value typo	Yiwen Liu
2.5	2010/01/25	Modify method 6, 7, 8, 9 command length to 6	Yiwen Liu
2.6	2010/01/26	Correct method ID 1, 8 typo	Yiwen Liu

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2.61	20100609	<ol style="list-style-type: none"> 1. Modify GetBIOSSettings, SetBIOSSettings buffer size to 1024 2. Add return code "0x0005" No supervisor password yet for some methods requiring supervisor password being set (ex: Get/Set power on password, Set user password). 3. Add return code "0x0007 Password retry count exceeded". Method should return 0x0007 if application fails to pass password validation for 3 times. After 10 minutes, the count will be reset. 4. Remove "RMV" type in Get Device Serial Number 5. Add GetVersionInfo Add GetBootSequence Add SetBootSequence Add GetDevicePortState Add SetDevicePortState 	Yiwen Liu
2.7	20100726	<ol style="list-style-type: none"> 1. Change WMBI, WMBI to WMBK, WMBL 2. Add return code "0x0008" Success and Reboot required. 3. Modify that when password failure 3 times, should reboot system to retry WMI method instead of waiting for 10 minutes. 	Yiwen Liu
2.8	20101214	<ol style="list-style-type: none"> 1. Method 19: Add Reserved field in SetPortDeviceState() to align parameter 2. Method 18, 19: Modify Wifi Radio to Wifi 3. Method 18, 19: Add camera device 4. Method 18, 19: Add audio device 5. Method 3, 4: Export/Import BIOS settings should include Supervisor password and user password in the exported settings. 6. WMBK Method 16, 17. Desktop system just return 0x0001 Control method is not supported. 7. Correct byte size for WMBL Method 3, 4 	Yiwen Liu
2.9	20111209	<ol style="list-style-type: none"> 1. Change BIOS password length to 12 chars 2. Remove Get D2D Recovery Status Check 	Yiwen Liu
3.0	20120208	<ol style="list-style-type: none"> 1. Add chapter 3 ACPI Control method for IOAC 2. Add chapter 4 Acer SMBIOS Type 	Dony Wu
3.1	20120313	Update minor revision to 9 in Type ACh	Dony Wu
3.2	20120711	<ol style="list-style-type: none"> 1. Add Boot Mode Type to Set BIOS Option 2. Update SMBIOS major revision and minor revision 	Dony Wu
3.3	2013/03/05	<ol style="list-style-type: none"> 1. Modified brand logo on cover page, header & confidential wording 2. Modified "3 ACPI Control method for IOAC" to "3 ACPI Control Method" 3. Modified "Set BIOS option", added below features: "Wake on LAN(Power On by Onboard LAN)"; 	Justin Chiu Yansan Tsai

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		“Wake on WLAN(Power On by PCIE Devices)”; “Deep Power Off Mode”; “Set Recovery Mode”; “Set CSM & Secure Boot Default Value” 4. Added “Set BIOS Option” 5. Modified “Acer WMI/SMBIOS Major/Minor Revision”	
3.4	2013/04/15	1. Modified “3.1 ACPI Control method”, Added “_UID : APGe”	Yansan Tsai
3.5	2013/05/28	1. Modified “Get BIOS Settings” & “Set BIOS Settings”, changed buffer size from 1024 to 4096 2. Modified “Acer WMI/SMBIOS Major/Minor Revision”	Yansan Tsai
3.6	2013/12/02	1. Added chassis intrusion detection 2. Added serial port control 3. Added parallel port control	ChunkuoYang
3.7	2014/01/17	Move WMI (set serial/parallel port) WMAA(Method ID 0x1) to WMBK(Arg 1,18; 1,19)	ChunkuoYang
3.8	2014/07/02	Add Control Method WMAA/0Eh/0Fh for Dual Load OS BIOS (Secure Boot) Change Confirmation	Chunkuo Yang
4.0	2014/09/18	1. Add UTF-8 format to support supervisor/user password. 2. Change GetVersionInfo format	Mags Yu
4.1	2014/11/05	1. Add System Health Monitor 2. Modify Wake on LAN and Wake on WLAN requirements of Set BIOS Option	Mags Yu
4.2	2015/04/09	Modify System Health monitor Get BIOS Option MEM/HDD LED return value status definition.	Vernon Wang
4.3	2015/07/03	1. Add Turbo button event 2. Add Gaming indicator control 3. Add Fan speed control 4. Add Gaming application indicator	Chunkuo Yang
4.4	2016/02/02	1. Add Power On by Monitor 2. Add USB Type-C Detection Event & GET method 3. Add battery Information. SMBIOS Type ACh is updated for 2 nd battery 4. Add Control method for ABCT support 5. Add Acer Gaming Function	Chunkuo Yang Vernon Wang Max Huang Jovi Liu
4.5	2016/04/21	1. Modify Get Acer Gaming System Information, add Get System Health Information 2. Secure Boot support in ABCT 3. TPM State and TPM Operation in ABCT 4. Two bytes for year of Date and Time in ABCT	Max Huang Jovi Liu
4.6	2016/07/11	1. "Optimized Memory Resource for Windows 7 32-Bit" item in ABCT	Jovi Liu
4.7	2016/09/14	1. “USB Device Filter” in ABCT	Jovi Liu
4.8	2016/12/01	1. Modify Acer Gaming function, light patterns and G1 area wording 2. Created method for USB Device Filter status under WMAC	Max Huang Jovi Liu
4.9	2017/07/06	1. Add new support of G9 in Acer Gaming function 2. LED status created for NVMe SSD under System Health Monitor 3. New method ID under WMBK created for GetHardDrivesInfo	Max Huang Jovi Liu
5.0	2017/09/26	1. Add new support of PO5 and modify G9 project name in Acer Gaming function 2. Data size increment for Method ID 3/4 under WMBL	Max Huang Jovi Liu
5.1	2018/01/11	1. Add “Onboard Wi-Fi/Bluetooth Module” in ABCT 2. Add “USB Charge Function” in ABCT 3. Notes updated for <i>Onboard Graphics Controller</i> and <i>TPM Operation</i> in ABCT	Max Huang Jovi Liu
5.2	2018/07/12	1. Add “Set Acer Diagnostic Status” and “Get Acer Diagnostic Status” in	Max Huang

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		ACPI control method for commercial tools 2. Supported more items in ABCT	Jovi Liu
5.3	2018/08/23	1. Add new Light patterns support of Predator Orion 9000 RGB in Acer Gaming function	Max Huang

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Implementation list of ACPI Control Method

- (Necessary) ○ (Optional)

Method	
1.1. ACPI Control method for Commercial	
Check password existence	●
Get power on password check status	●
Set power on password check	●
Get group boot sequence	●
Set group boot sequence	●
Get device boot priority	●
Set device boot priority	●
Get boot device model name	●
Get boot device serial number	●
Get asset tag	●
Set asset tag	●
Get D2D Recovery check status	○
Load BIOS default	●
Load user default	●
GetVersionInfo	●
GetBootSequence	○
SetBootSequence	○
GetDevicePortState	●
SetDevicePortState	●
GetHardDrivesInfo	●
1.2. ACPI Control method for Commercial Tools	
Check user/supervisor password	●
Set user/ supervisor password	●
Get BIOS settings	●
Set BIOS settings	●
2. ACPI Control method for ACPI event	
ACPI Event for touch button	○
ACPI Event for PC health	○
ACPI Event for turbo button	○
3. ACPI Control Method	
Set BIOS Option	●
Get BIOS Option	●
4. ACPI Control method for ABCT	
Set BIOS Options of ABCT	○
Get BIOS Options of ABCT	○
5. ACPI Control Method	
Battery	○
Acer Gaming Function	○

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1. ACPI Control method for Commercial

Return code table

Return code	Meaning
0	Success and no error
1	Control method not support
2	Incorrect Password
3	Incorrect Parameters
4	No user default found
5	No supervisor password yet
6	Device is not supported
7	Password retry count exceeded
8	Success and Reboot required to make function works
Others	Reserved

1.1 ACPI control method

GUID: F75F5666-B8B3-4a5d-A91C-7488F62E5637

Object ID(BK): 66,75,

Instance Count: 1

Flag: 0x02

Description: ASL has to Implement WMBK control method, and then compares Arg1

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1. If LEqual(Arg1,1) is true, WMBK go to check whether password exist or not.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 1 (Check password existence)
Arg2	<p>14 bytes value specifies user password or supervisor password</p> <p>Byte 0~1 : Command length in byte (2 bytes)</p> <p>Byte 2~13: Command string in Unicode. (12 bytes)</p> <p> "USER" : Check user password existence (Case-sensitive)</p> <p> "ADMIN" : Check supervisor password existence(Case-sensitive)</p> <p>⌘ <i>Example</i></p> <p> ✧ Check user password existence to import: 08h 00h 55h 00h 53h 00h 45h 00h 52h 00h</p>
Return value	<p>Return 8 bytes.</p> <p>Byte 00~03: Return Code (4 bytes)</p> <p>Byte 04~07: Show password existence. (4 bytes)</p> <p> 0x00000000: password doesn't exist or password disabled</p> <p> 0x00000001: password Enabled</p>

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2. If LEqual(Arg1,2) is true, WMBK go to get power on password check status.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 2 (Get power on password check status)
Arg2	None
Return value	Return 8 bytes. Byte 00~03: Return Code (4 bytes) Byte 04~07: Power on password status (4 bytes) 0x00000000: Power on password disabled 0x00000001: Power on password enabled
Comment	The method requires supervisor password being set. If supervisor password is not set on this machine, method return 0x0005 (No supervisor password yet) for Byte 00~03.

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3. If LEqual(Arg1,3) is true, WMBK go to set power on password check.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 3 (Set power on password check)
Arg2	<p>Arg2 is 16 bytes buffer</p> <p>Byte 00~01: Supervisor password length (2 bytes)</p> <p>Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)</p> <p>Byte 14~15: (2 bytes)</p> <p>0x0000: Disable power on password</p> <p>0x0001: Enable power on password</p> <p>⚠ <i>Note</i></p> <p>✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 4 bytes.</p> <p>Byte 00~03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> 1. If password could not pass password validation, BIOS should return 0x00000002 "Incorrect password" 2. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 "Retry count exceeded" for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again. 3. The method requires supervisor password being set. If Supervisor password is not set on this machine, method return 0x0005 (No supervisor password yet) for Byte 00~03.

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4. If LEqual(Arg1,4) is true, WMBK go to get group boot sequence.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 4 (Get group boot sequence)
Arg2	None
Return value	<p>Return 8 bytes Byte 00~03: Return Code (4 bytes) Byte 04~07: Order (4 bytes) Byte 04: HDD order (1 byte) Byte 05: ODD order (1 byte) Byte 06: LAN order (1 byte) Byte 07: RMV order (1 byte)</p> <p><i>Example</i> Byte: 04 05 06 07 Value: 01h, 03h, 02h, 04h It means group boot sequence = "HDD, LAN, ODD, Removable", every device should have an order number between 1~4.</p>

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5. If LEqual(Arg1,5) is true, WMBK go to set group boot sequence.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 5 (Set group boot sequence)
Arg2	<p>Arg2 is 18 bytes buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes) Byte 14: HDD order (1 byte) Byte 15: ODD order (1 byte) Byte 16: LAN order (1 byte) Byte 17: RMV order (1 byte)</p> <p><i>Example</i> Byte: 14 15 16 17 Value: 01h, 03h, 02h, 04h It means group boot sequence = "HDD, LAN, ODD, Removable", every device should have an order number between 1~4. If the order number is duplicated or out of range, BIOS should return 0x00000003 "Incorrect Parameter"</p> <p><i>Note</i> ✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 4 bytes Byte00~03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> 1. If old password could not pass password validation, BIOS should return 0x00000002 "Incorrect password" 2. If supervisor password is not set on the system, BIOS should check the supervisor password length is 0 but no need to check scan code value. 3. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 "Retry count exceeded" for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

* If a boot device does not exist, the system BIOS should try to boot from next boot device. For example, if removable is set as first boot priority but the system doesn't have the removable device, the system BIOS should try to boot the next boot group.

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6. If LEqual(Arg1,6) is true, WMBK go to get device boot priority.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 6 (Get device boot priority)
Arg2	<p>Arg2 is 8 bytes buffer Byte 00~01: Command length in byte (2 bytes) Byte 02~07: Command string in Unicode. (6 bytes) (Case-sensitive) “RMV”: Get Removable device boot priority. “HDD”: Get HDD device boot priority “ODD”: Get ODD device boot priority “LAN”: Get LAN device boot priority</p> <p>«Example» If we want to get HDD device boot priority, BIOS will receive: 06h 00h 48h 00h 44h 00h 44h 00h</p>
Return value	<p>Return 24 bytes Byte 00~03: Return Code (4 bytes) Byte 04~20 show device boot priority. Byte 04 indicate the 1st boot priority. 0xFFh is a terminator for the device list (17 bytes, 16 devices + 0xFFh) Byte 21-23 Reserved (3 bytes)</p> <p>«Example» Byte: 04 05 06 07 08 09 10..... Value: 02h, 01h, 03h, 04h, FFh, 00h, 00h..... It means that the system BIOS detects four hard drives and the boot priority is: 2nd Hard Drive → 1st Hard Drive → 3rd Hard Drive → 4th Hard Drive</p>

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7. If LEqual(Arg1,7) is true, WMBK go to set device boot priority.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 7 (Set device boot priority)
Arg2	<p>Arg2 is 39 bytes buffer.</p> <p>Byte 00~01: Supervisor password length (2 bytes)</p> <p>Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)</p> <p>Byte 14~15: Command length in byte (2 bytes)</p> <p>Byte 16~21: Command string in Unicode (6 bytes, Case-sensitive)</p> <p>“RMV”: Set Removable device boot priority</p> <p>“HDD”: Set HDD device boot priority</p> <p>“ODD”: Set ODD device boot priority</p> <p>“LAN”: Set LAN device boot priority</p> <p>Byte 22~38: boot device priority, the maximum number of devices is 16 (17 bytes, 16 device + 0xff)</p> <p>Example</p> <p>Byte: 22 23 24 25 26 27 28.....</p> <p>Value: 02h, 03h, 04h, 01h, FFh, 00h, 00h.....</p> <p>Byte 22 indicates the 1st boot device. Byte 23 indicates the 2nd boot device, and so on. 0xFF to terminate. It means that the Acer specific application sets new boot priority for hard drive as:</p> <p>2nd Hard Drive → 3rd Hard Drive → 4th Hard Drive → 1st Hard Drive</p> <p>Note</p> <p>✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 4 bytes</p> <p>Byte 00~03: Return Code</p> <ol style="list-style-type: none"> 1. If old password could not pass password validation, BIOS should return 0x00000002 “Incorrect password” 2. If Supervisor password is not set on the system, BIOS should check the Supervisor password length is 0 but no need to check scan code value. 3. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

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8. If LEqual(Arg1,8) is true, WMBK go to Get boot device model name.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 8 (Get boot device model name)
Arg2	<p>Arg2 is 10 bytes buffer</p> <p>Byte 00~01: Command length in byte (2 bytes)</p> <p>Byte 02~07: Command string in Unicode (6 bytes, case-sensitive)</p> <p>“RMV” : Get Removable device boot priority</p> <p>“HDD” : Get HDD device boot priority</p> <p>“ODD” : Get ODD device boot priority</p> <p>Byte 08~09: Disk number (2 bytes)</p> <p>The number gets from Get device boot sequence (ex: 3)</p>
Return value	<p>88 bytes buffer</p> <p>Byte 00 ~ 03: Return Code (4 bytes)</p> <p>Byte 04 ~ 05: String length in bytes (2 bytes)</p> <p>Byte 06 ~ 87: Model name in Unicode (82 bytes)</p>

* The reason to provide this Get boot device model name function is to link BIOS device ID with some physical drive information so program runs under Windows could link this information with device ID it gets from Windows. Sometime, the device 1 in BIOS is not the device 1 in Windows.

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9. If LEqual(Arg1,9) is true, WMBK go to Get boot device serial number.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 9 (Get boot device serial number)
Arg2	Arg2 is 10 bytes buffer Byte 00~01: Command length in byte (2 bytes) Byte 02~07: Command string in Unicode (6 bytes, case-sensitive) “HDD” : Get HDD device boot priority “ODD” : Get ODD device boot priority Byte 08~09: Disk number (2 bytes) The number gets from Get device boot sequence (ex: 3)
Return value	48 bytes buffer Byte 00 ~ 03: Return Code (4 bytes) Byte 04 ~ 05: String length in bytes (2 bytes) Byte 06 ~ 47 : Serial number in Unicode (42 bytes)

* The reason to provide this Get boot device serial number function is to link BIOS device ID with some physical drive information so program runs under Windows could link this information with device ID it gets from Windows. Sometime, the device 1 in BIOS is not the device 1 in Windows.

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10. If LEqual(Arg1,10) is true, WMBK go to get asset tag.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 10 (Get asset tag)
Arg2	None
Return value	<p>Return 72 bytes Byte 00 ~ 03: Return Code (4 bytes) Byte 04 ~ 05: Asset tag length in bytes (2 bytes) Byte 06 ~ 71: Asset tag in Unicode (66 bytes)</p> <p>«Example» If return code is 0 and asset tag is "ABCDEF", please return: 00h 00h 00h 00h 0Ch 00h 41h 00h 42h 00h 43h 00h 44h 00h 45h 00h 46h 00h 00h 00h 00h 00h 00h 00h 00h 00h</p>

* Due to some tools only support Unicode string type and SMBIOS field is actually in ASCII code. We will need BIOS help to translate between Unicode and ASCII code. The Unicode character we got from BIOS will be Unicode characters, BIOS gets ASCII string from SMBIOS and add highbyte 0x00 to each character then form a new Unicode string to upper application.

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11. If LEqual(Arg1,11) is true, WMBK go to set asset tag.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 11 (Set asset tag)
Arg2	<p>Arg2 is 80 bytes buffer</p> <p>Byte 00~01: Supervisor password length (2 bytes)</p> <p>Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)</p> <p>Byte 14~15: Asset tag length in byte (2 bytes)</p> <p>Byte 16~79: Asset tag in Unicode (64 bytes)</p> <p>⚡ <i>⚡Note⚡</i></p> <p>✧ If asset tag length is 0, it means to clear asset tag!!!</p> <p>✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 4 bytes</p> <p>Byte 00 ~ 03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> 1. If old password could not pass password validation, BIOS should return 0x00000002 “Incorrect password” 2. If Supervisor password is not set on the system, BIOS should check the Supervisor password length is 0 but no need to check scan code value. 3. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

* Due to some tools only support Unicode string type and SMBIOS field is actually in ASCII code. We will need BIOS help to translate between Unicode and ASCII code. The Unicode character we passed to BIOS will be Unicode character below 0x00ff, BIOS could get rid of highbyte and form a new ASCII string and set to SMBIOS.

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12. If LEqual(Arg1,12) is true, WMBK go to get D2D recovery check status.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 12 (Get D2D Recovery check status)
Arg2	None
Return value	Return 8 bytes Byte 00 ~ 03: Return Code (4 bytes) Byte 04 ~ 07: D2D status (4 bytes) 0x00000000 => D2D disabled 0x00000001 => D2D enabled (On Desktop, please set return code = 1. It means control method is not supported.)

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13. If LEqual(Arg1,13) is true, WMBK go to Load BIOS Default.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 13 (Load BIOS Default)
Arg2	<p>Arg2 is 14 bytes buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)</p> <p>⌞Note⌟ ✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 4 bytes Byte 00 ~ 03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> 1. If password could not pass password validation, BIOS should return 0x00000002 "Incorrect password" 2. If supervisor password is not set on the system, BIOS should check the supervisor password length is 0 but no need to check scan code value. 3. If system requires a reboot to make everything takes effect, BIOS should return 0x00000008 "Success and Reboot" required. 4. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 "Retry count exceeded" for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

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14. If LEqual(Arg1,14) is true, WMBK go to LoadUserDefault.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 14 (Load User Default)
Arg2	<p>Arg2 is 14 bytes buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)</p> <p>⌞Note⌟ ✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code..</p>
Return value	<p>Return 4 bytes Byte 00 ~ 03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> 1. If password could not pass password validation, BIOS should return 0x00000002 “Incorrect password” 2. If supervisor password is not set on the system, BIOS should check the supervisor password length is 0 but no need to check scan code value. 3. If user default is not supported on this machine, please return 0x0001 “Control method is not supported. 4. If system requires a reboot to make everything takes effect, BIOS should return 0x00000008 “Success and Reboot” required. 5. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

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15. If LEqual(Arg1,15) is true, WMBK go to GetVersionInfo.

Control method	WMBK
Arg0	Instance
Arg1	Method ID 15 (Get Version Info)
Arg2	None
Return value	<p>Return 8 bytes Byte 00 ~ 03: Return Code (4 bytes) Byte 04 ~ 05: Version Info (4 bytes) Byte 04: Major revision Byte 05: Minor revision</p> <p>⟨Example⟩ Return value: 00h 00h 00h 00h 04h 00h indicate version:4.0.</p>

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16. If LEqual(Arg1,16) is true, WMBK go to GetBootSequence.

Control method	WMBK																																		
Arg0	Instance																																		
Arg1	Method ID 16 (Get Boot Sequence)																																		
Arg2	None																																		
Return value	<p>(The method is not implemented on Desktop system currently. Please return 0x0001 Control method not supported)</p> <p>Return 20 bytes</p> <p>Byte 00 ~ 03: Return Code (4 bytes)</p> <p>Byte 04 ~ 19: Show boot sequence. Byte 0 indicate the highest boot priority. (0xFFh to terminate) (16 bytes)</p> <table border="1"> <tr><td>01h</td><td>1st HDD</td></tr> <tr><td>02h</td><td>CD/DVD drive</td></tr> <tr><td>03h</td><td>SCSI</td></tr> <tr><td>04h</td><td>D2D recovery</td></tr> <tr><td>05h</td><td>Reserved</td></tr> <tr><td>06h</td><td>PCMCIA</td></tr> <tr><td>07h</td><td>Network boot</td></tr> <tr><td>08h</td><td>Reserved</td></tr> <tr><td>09h</td><td>1394 CD-ROM</td></tr> <tr><td>0Ah</td><td>USB HDD</td></tr> <tr><td>0Bh</td><td>USB CD-ROM</td></tr> <tr><td>0Ch</td><td>USB Floppy</td></tr> <tr><td>0Dh</td><td>USB key</td></tr> <tr><td>0Eh</td><td>2nd HDD</td></tr> <tr><td>0Fh</td><td>Reserved</td></tr> <tr><td>10h</td><td>USB Other Devices</td></tr> <tr><td>11h</td><td>Other Bootable Devices</td></tr> </table> <ol style="list-style-type: none"> 1. The method is another way of boot sequence implementation comparing with method 4 and 6. Some notebook model will choose to implement this method instead of method 4 and 6 due to system design choice. 2. If this way of boot sequence adjustment is not supported on this machine, please return 0x0001 “ Control method is not supported. 	01h	1 st HDD	02h	CD/DVD drive	03h	SCSI	04h	D2D recovery	05h	Reserved	06h	PCMCIA	07h	Network boot	08h	Reserved	09h	1394 CD-ROM	0Ah	USB HDD	0Bh	USB CD-ROM	0Ch	USB Floppy	0Dh	USB key	0Eh	2nd HDD	0Fh	Reserved	10h	USB Other Devices	11h	Other Bootable Devices
01h	1 st HDD																																		
02h	CD/DVD drive																																		
03h	SCSI																																		
04h	D2D recovery																																		
05h	Reserved																																		
06h	PCMCIA																																		
07h	Network boot																																		
08h	Reserved																																		
09h	1394 CD-ROM																																		
0Ah	USB HDD																																		
0Bh	USB CD-ROM																																		
0Ch	USB Floppy																																		
0Dh	USB key																																		
0Eh	2nd HDD																																		
0Fh	Reserved																																		
10h	USB Other Devices																																		
11h	Other Bootable Devices																																		

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17. If LEqual(Arg1,17) is true, WMBK go to SetBootSequence.

Control method	WMBK																																		
Arg0	Instance																																		
Arg1	Method ID 17 (Set Boot Sequence)																																		
Arg2	<p>Arg2 is 30 bytes buffer Byte 00 ~ 01: Supervisor password length (2 bytes) Byte 02 ~ 13: Supervisor password in scan code or UTF-8 (12 bytes) Byte 14 ~ 29: Show boot sequence. Byte 0 indicate the highest boot priority. (0xFFh to terminate) (16 bytes)</p> <table border="1"> <tr><td>01h</td><td>1st HDD</td></tr> <tr><td>02h</td><td>CD/DVD drive</td></tr> <tr><td>03h</td><td>SCSI</td></tr> <tr><td>04h</td><td>D2D recovery</td></tr> <tr><td>05h</td><td>Reserved</td></tr> <tr><td>06h</td><td>PCMCIA</td></tr> <tr><td>07h</td><td>Network boot</td></tr> <tr><td>08h</td><td>Reserved</td></tr> <tr><td>09h</td><td>1394 CD-ROM</td></tr> <tr><td>0Ah</td><td>USB HDD</td></tr> <tr><td>0Bh</td><td>USB CD-ROM</td></tr> <tr><td>0Ch</td><td>USB Floppy</td></tr> <tr><td>0Dh</td><td>USB key</td></tr> <tr><td>0Eh</td><td>2nd HDD</td></tr> <tr><td>0Fh</td><td>Reserved</td></tr> <tr><td>10h</td><td>USB Other Devices</td></tr> <tr><td>11h</td><td>Other Bootable Devices</td></tr> </table> <p>1. The method is another way of boot sequence implementation comparing with method 5 and 7. Some notebook model will choose to implement this method instead of method 5 and 7 due to system design choice.</p> <p>2. If this way of boot sequence adjustment is not supported on this machine, please return 0x0001 “Control method is not supported.”</p> <p>⌞Note⌞ ✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>	01h	1 st HDD	02h	CD/DVD drive	03h	SCSI	04h	D2D recovery	05h	Reserved	06h	PCMCIA	07h	Network boot	08h	Reserved	09h	1394 CD-ROM	0Ah	USB HDD	0Bh	USB CD-ROM	0Ch	USB Floppy	0Dh	USB key	0Eh	2nd HDD	0Fh	Reserved	10h	USB Other Devices	11h	Other Bootable Devices
01h	1 st HDD																																		
02h	CD/DVD drive																																		
03h	SCSI																																		
04h	D2D recovery																																		
05h	Reserved																																		
06h	PCMCIA																																		
07h	Network boot																																		
08h	Reserved																																		
09h	1394 CD-ROM																																		
0Ah	USB HDD																																		
0Bh	USB CD-ROM																																		
0Ch	USB Floppy																																		
0Dh	USB key																																		
0Eh	2nd HDD																																		
0Fh	Reserved																																		
10h	USB Other Devices																																		
11h	Other Bootable Devices																																		

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Return value	<p>(The method is not implemented on Desktop system currently. Please return 0x0001 Control method not supported)</p> <p>Return 4 bytes</p> <p>Byte 00 ~ 03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> 1. If this way of boot sequence adjustment is not supported on this machine, please return 0x0001 “Control method is not supported.” 2. If password could not pass password validation, BIOS should return 0x00000002 “Incorrect password” 3. If supervisor password is not set on the system, BIOS should check the supervisor password length is 0 but no need to check scan code value. 4. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.
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18. If LEqual(Arg1,18) is true, WMBK go to GetDevicePortState.

Control method	WMBK																												
Arg0	Instance																												
Arg1	Method ID 18 (Get Device or Port State)																												
Arg2	<p>Arg2 is 4 bytes buffer Byte 00~03: Device type ID (4 bytes)</p> <table border="1"> <thead> <tr> <th>Device or Port type</th><th>ID</th></tr> </thead> <tbody> <tr> <td>External USB</td><td>0x00000001</td></tr> <tr> <td>USB card reader</td><td>0x00000002</td></tr> <tr> <td>3G</td><td>0x00000003</td></tr> <tr> <td>Wifi antenna</td><td>0x00000004</td></tr> <tr> <td>LAN</td><td>0x00000005</td></tr> <tr> <td>Bluetooth</td><td>0x00000006</td></tr> <tr> <td>TPM</td><td>0x00000007</td></tr> <tr> <td>Camera</td><td>0x00000008</td></tr> <tr> <td>Audio</td><td>0x00000009</td></tr> <tr> <td>ODD</td><td>0x0000000A</td></tr> <tr> <td>eSATA</td><td>0x0000000D</td></tr> <tr> <td>Serial Port</td><td>0x0000000E</td></tr> <tr> <td>Parallel Port</td><td>0x0000000F</td></tr> </tbody> </table>	Device or Port type	ID	External USB	0x00000001	USB card reader	0x00000002	3G	0x00000003	Wifi antenna	0x00000004	LAN	0x00000005	Bluetooth	0x00000006	TPM	0x00000007	Camera	0x00000008	Audio	0x00000009	ODD	0x0000000A	eSATA	0x0000000D	Serial Port	0x0000000E	Parallel Port	0x0000000F
Device or Port type	ID																												
External USB	0x00000001																												
USB card reader	0x00000002																												
3G	0x00000003																												
Wifi antenna	0x00000004																												
LAN	0x00000005																												
Bluetooth	0x00000006																												
TPM	0x00000007																												
Camera	0x00000008																												
Audio	0x00000009																												
ODD	0x0000000A																												
eSATA	0x0000000D																												
Serial Port	0x0000000E																												
Parallel Port	0x0000000F																												
Return value	<p>Return 8 bytes Byte 00 ~ 03: Return Code (4 bytes) Byte 04 ~ 07: Device state. (4 bytes)</p> <p>0x00000000: Device state is disabled. 0x00000001: Device state is enabled. 0x00000002: Device does not exist.</p> <ol style="list-style-type: none"> 1. If this method is not supported on this machine, please return 0x0001 "Control method is not supported" for Byte 00~03. 2. If the device specified in Arg2 does not support to be turned on/off through WMI, please return 0x0006 "Device is not supported" for Byte 00~03. 3. If device ID could be turned on/off from BIOS but this machine does not equipped with this device, then this function return 0x0000 (success) for Byte 00~03 and value 0x0002 (device does not exist) for Byte 04~07. 																												

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19. If LEqual(Arg1,19) is true, WMBK go to SetDevicePortState.

Control method	WMBK																												
Arg0	Instance																												
Arg1	Method ID 19 (Set Device or Port State)																												
Arg2	<p>Arg2 is 24 bytes buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes) Byte 14~15: Reserved (2 bytes) Byte 16~19: Device type ID (4 bytes)</p> <table border="1"> <thead> <tr> <th>Device or Port type</th><th>ID</th></tr> </thead> <tbody> <tr> <td>External USB</td><td>0x00000001</td></tr> <tr> <td>USB card reader</td><td>0x00000002</td></tr> <tr> <td>3G</td><td>0x00000003</td></tr> <tr> <td>Wifi-antenna</td><td>0x00000004</td></tr> <tr> <td>LAN</td><td>0x00000005</td></tr> <tr> <td>Bluetooth</td><td>0x00000006</td></tr> <tr> <td>TPM</td><td>0x00000007</td></tr> <tr> <td>Camera</td><td>0x00000008</td></tr> <tr> <td>Audio</td><td>0x00000009</td></tr> <tr> <td>ODD</td><td>0x0000000A</td></tr> <tr> <td>eSATA</td><td>0x0000000D</td></tr> <tr> <td>Serial Port</td><td>0x0000000E</td></tr> <tr> <td>Parallel Port</td><td>0x0000000F</td></tr> </tbody> </table> <p>Byte 20 ~ 23: Device state. (4 bytes) 0x00000000: Set device state to disable. 0x00000001: Set device state to enable.</p> <p>⌘ <i>Note</i> ⚡ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>	Device or Port type	ID	External USB	0x00000001	USB card reader	0x00000002	3G	0x00000003	Wifi-antenna	0x00000004	LAN	0x00000005	Bluetooth	0x00000006	TPM	0x00000007	Camera	0x00000008	Audio	0x00000009	ODD	0x0000000A	eSATA	0x0000000D	Serial Port	0x0000000E	Parallel Port	0x0000000F
Device or Port type	ID																												
External USB	0x00000001																												
USB card reader	0x00000002																												
3G	0x00000003																												
Wifi-antenna	0x00000004																												
LAN	0x00000005																												
Bluetooth	0x00000006																												
TPM	0x00000007																												
Camera	0x00000008																												
Audio	0x00000009																												
ODD	0x0000000A																												
eSATA	0x0000000D																												
Serial Port	0x0000000E																												
Parallel Port	0x0000000F																												

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Return value	<p>Return 8 bytes</p> <p>Byte 00 ~ 03: Return Code (4 bytes)</p> <p>Byte 04 ~ 07: Device state. (4 bytes)</p> <p>0x00000000: Device state is disabled.</p> <p>0x00000001: Device state is enabled.</p> <p>0x00000002: Device does not exist.</p> <ol style="list-style-type: none"> 1. If password could not pass password validation, BIOS should return 0x00000002 “Incorrect password” 2. If Supervisor password is not set on the system, BIOS should check the Supervisor password length is 0 but no need to check scan code value. 3. If the method is not supported on this machine, please return 0x0001 “Control method is not supported.” 4. If the device specified in Arg2 does not support to be turned on/off through WMI, please return 0x0006 “Device is not supported” for Byte 00~03 5. If device ID could be turned on/off from BIOS but this machine does not equipped with this device, then this function return 0x0000 (success) for Byte 00~03 and value 0x0002 (device does not exist) for Byte 04~07 6. If system requires a reboot to make everything takes effect, BIOS should return 0x00000008 “Success and Reboot required.” 7. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.
Comment	<ol style="list-style-type: none"> 1. The function is provided for security control. Therefore, if device is being disabled here, user could not use hardware button or hotkey or Windows Device Manager or any other software/hardware means to enable it again. Only through BIOS setup or this same WMI method, device could be enabled again. 2. The setting will take effect after system reboot.

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20. If LEqual(Arg1,20) is true, WMBK go to GetHardDrivesInfo.

Control method	WMBK																						
Arg0	Instance																						
Arg1	Method ID 20 (Get Hard Drives Information)																						
Arg2	<p>Arg2 is a 2-byte buffer Byte 00~01: Storage ID</p> <table> <tr> <th>SATA/NVMe drive</th><th>Storage ID</th></tr> <tr> <td>SATA Port 1</td><td>0x0001</td></tr> <tr> <td>SATA Port 2</td><td>0x0002</td></tr> <tr> <td>SATA Port 3</td><td>0x0003</td></tr> <tr> <td>SATA Port 4</td><td>0x0004</td></tr> <tr> <td>SATA Port 5</td><td>0x0005</td></tr> <tr> <td>SATA Port 6</td><td>0x0006</td></tr> <tr> <td>NVMe device 1</td><td>0x00A1</td></tr> <tr> <td>NVMe device 2</td><td>0x00A2</td></tr> <tr> <td>NVMe device 3</td><td>0x00A3</td></tr> <tr> <td>NVMe device 4</td><td>0x00A4</td></tr> </table> <ol style="list-style-type: none"> 1. SATA HDDs are ordered by port number 2. NVMe SSDs are ordered by PCIe PFA 	SATA/NVMe drive	Storage ID	SATA Port 1	0x0001	SATA Port 2	0x0002	SATA Port 3	0x0003	SATA Port 4	0x0004	SATA Port 5	0x0005	SATA Port 6	0x0006	NVMe device 1	0x00A1	NVMe device 2	0x00A2	NVMe device 3	0x00A3	NVMe device 4	0x00A4
SATA/NVMe drive	Storage ID																						
SATA Port 1	0x0001																						
SATA Port 2	0x0002																						
SATA Port 3	0x0003																						
SATA Port 4	0x0004																						
SATA Port 5	0x0005																						
SATA Port 6	0x0006																						
NVMe device 1	0x00A1																						
NVMe device 2	0x00A2																						
NVMe device 3	0x00A3																						
NVMe device 4	0x00A4																						
Return value	<p>Return 132 bytes Byte 00 ~ 03: Return Code (4 bytes) Byte 04 ~ 07: Storage Size in GB (4 bytes) Byte 08 ~ 09: String length in bytes for Model Name (2 bytes) Byte 10 ~ 89: Model Name in Unicode (80 bytes) Byte 90 ~ 91: String length in bytes for Serial Number (2 bytes) Byte 92 ~ 131: Serial Number in Unicode (40 bytes)</p> <ol style="list-style-type: none"> 1. BIOS returns 0x00 in byte 04~ 131 if device does not exist 2. The mapping of HDD drives should be the same as HDD/NVMe SSD LED in System Health Monitor under WMAA for AcTC 																						

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1.2 ACPI control method for commercial tools

GUID: FE1DBBDA-3014-4856-870C-5B3A744BF341

Object ID(BL): 66,76,

Instance Count: 1

Flag: 0x02

acer
confidential

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1. If LEqual(Arg1,1) is true, WMBL go to check user/supervisor password.

Control method	WMBL
Arg0	Instance
Arg1	Method ID 1 (Check user/supervisor password)
Arg2]	<p>Arg2 is 28 byte buffer.</p> <p>Byte 00~01: Password length in byte (2 bytes)</p> <p>Byte 02~13: Password context in scan code or UTF-8 (12 bytes)</p> <p>Byte 14~15: Command length in byte (2 bytes)</p> <p>Byte 16~27: Command string in Unicode (12 bytes)</p> <p>”USER”: Check user password (Case-sensitive)</p> <p>“ADMIN”: Check supervisor password (Case-sensitive)</p> <p>⌞Example⌟</p> <p>If ADMIN’s password is “ACER”.</p> <p>The scan code format is:</p> <p>04h 00h 1Eh 2Eh 12h 13h 00h 00h 00h 00h 00h 00h 00h 00h 0Ah 00h 41h 00h 44h 00h 4Dh 00h 49h 00h 4Eh 00h 00h 00h</p> <p>The UTF-8 format is:</p> <p>04h 00h 41h 43h 45h 52h 00h 00h 00h 00h 00h 00h 00h 0Ah 00h 41h 00h 44h 00h 4Dh 00h 49h 00h 4Eh 00h 00h 00h</p> <p>⌞Note⌟</p> <p>✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 8 bytes.</p> <p>Byte00~03: Return Code (4 bytes)</p> <p>Byte04~07: Show password existence. (4 bytes)</p> <p>0x0000: Password is the same.</p> <p>0x0001: Password is different</p> <p>⌞Note⌟</p> <p>✧ If password is incorrect but function runs successfully, the return code should be 0x00000000 (Success) and byte 04~07 is 0x00000001. (Password is different)</p> <p>✧ For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.</p>

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2. If LEqual(Arg1, 2) is true, WMBL go to set user/supervisor password.

Control method	WMBL
Arg0	Instance
Arg1	Method ID 2 (Set user/ supervisor password)
Arg2	<p>Arg2 is 42 byte buffer.</p> <p>Byte 00~01: Old password length in byte (2 bytes)</p> <p>Byte 02~13: Old password context in scan code or UTF-8 (12 bytes)</p> <p>Byte 14~15: New password length in byte (2 bytes)</p> <p>Byte 16~27: New password context in scan code or UTF-8 (12 bytes)</p> <p>Byte 28~29: Command length in byte (2 bytes)</p> <p>Byte 30~41: Command string in Unicode. (12 bytes)</p> <p>"USER" : Set user password (Case-sensitive)</p> <p>"ADMIN" : Set supervisor password (Case-sensitive)</p> <p>⚡ <i>Note</i></p> <ul style="list-style-type: none"> ✧ If old password passes verification and new password length is 0. It means to clear password. ✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.
Return value	<p>Return 4 bytes.</p> <p>Byte00~03: Return Code</p> <ol style="list-style-type: none"> 1. If old password could not pass password validation, BIOS should return 0x00000002 "Incorrect password" 2. If supervisor password is not set yet but application tries to set a user's password, method should return 0x0005 " No supervisor password yet" 3. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 "Retry count exceeded" for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

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3. If LEqual(Arg1,3) is true, WMBL go to Get BIOS Settings.

Control method	WMBL
Arg0	Instance
Arg1	Method ID 3 (Get BIOS Settings)
Arg2	Arg2 is 16 bytes buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes) Byte 14~15: Number of BIOS settings index (2 bytes) (0 is user current set, 1 is user default set)
Return value	Return 32776 bytes value Byte 00~03: Return Code (4 bytes) Byte 04~05: Data length in this slot (2 bytes) Byte 06~32773: BIOS settings data (32768 bytes) Byte 32774~32775: Reserved (2 bytes) <ol style="list-style-type: none"> 1. If password could not pass password validation, BIOS should return 0x00000002 "Incorrect password" 2. If supervisor password is not set on the system, BIOS should check the supervisor password length is 0 but no need to check scan code value. 3. If user default set does not exist on this system, BIOS should return 0x00000004 "No user default found" <p><i>(Note)</i> ✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Comment	<ol style="list-style-type: none"> 1. This function will provide application function to export all BIOS settings and then import them to another machine. Due to security concerns, though this is a "get" function, we still require supervisor password. 2. The BIOS settings export here should cover all items on BIOS Setup UI but does not contain information specific to a machine. (ex: Asset tag.) 3. For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 "Retry count exceeded" for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again.

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4. If LEqual(Arg1,4) is true, WMBL go to Set BIOS Settings.

Control method	WMBL
Arg0	Instance
Arg1	Method ID 4 (SetBIOSSettings)
Arg2	<p>32786 bytes</p> <p>Byte 00~01: Supervisor password length (2 bytes)</p> <p>Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)</p> <p>Byte 14~15: Number of BIOS settings index (2 bytes)</p> <p>0x0000: user current set</p> <p>0x0001: user default set</p> <p>Byte 16~17: Data length in this slot (2 bytes)</p> <p>Byte 18~32785: BIOS settings data (32768 bytes)</p> <p><i>(Note)</i></p> <p>✧ If WMI version is 4.0 or later, password format is UTF-8. Otherwise password format is scan code.</p>
Return value	<p>Return 4 bytes value</p> <p>Byte 00 ~ 03: Return Code (4 bytes)</p> <ol style="list-style-type: none"> If password could not pass password validation, BIOS should return 0x00000002 “Incorrect password” If supervisor password is not set on the system, BIOS should check the supervisor password length is 0 but no need to check scan code value. If user default set does not exist on this system, BIOS should return 0x00000004 “No user default found” If system requires a reboot to make everything takes effect, BIOS should return 0x00000008 “Success and Reboot required.”
Comment	<ol style="list-style-type: none"> The BIOS settings import here is the output of previous method. It should cover all items on BIOS Setup UI but does not contain information specific to a machine. (ex: Asset tag.) For security reason, if supervisor password is incorrect for more than 3 times for all WMBK, WMBL method calls, method should return 0x00000007 “Retry count exceeded” for following WMBK, WMBL method calls which require supervisor password. System will require a reboot to clear the count, and WMBK, WMBL method which require supervisor password could be called again. SetBiosSettings might require a system reboot to make everything update successfully. In this case, BIOS could return 0x00000008 to inform upper application to reboot system.

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5. If LEqual(Arg1,7) is true, WMBL go to Set Acer Diagnostic Status.

Control method	WMBL
Arg0	Instance
Arg1	Method ID 7 (SetAcerDiagnosticStatus)
Arg2	2 bytes Byte 00: Command (1 byte) 0x00 – Clear Diagnostic Log 0x01 – Set Acer Memory Diagnostic 0x02 – Set Acer HDD Diagnostic <i>Others are Reserved.</i> Byte 01: Sub Function 0x00 – N/A (Default) 0x01 – Full Test 0x02 – Quick Test <i>Others are Reserved.</i>
Return value	Return 4 bytes value Byte 00~03: Return Code (4 bytes)

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6. If LEqual(Arg1,8) is true, WMBL go to Get Acer Diagnostic Status.

Control method	WMBL
Arg0	Instance
Arg1	Method ID 8 (GetAcerDiagnosticStatus)
Arg2	2 bytes Byte 00: Command (1 byte) 0x00 – Get Acer Diagnostic Capability 0x01 – Get Acer Memory Diagnostic Result 0x02 – Get Acer HDD Diagnostic Result <i>Others are Reserved.</i> Byte 01: <i>Others are Reserved.</i> (1 byte)
Return value	Return 7 bytes value Byte 00~03: Return Code (4 bytes) Byte 04: Return Acer Diagnostic Result (If get result) (1 byte) 0x00 – Not Complete 0x01 – Pass 0x02 – Failure <i>Others are reserved</i> Byte 05~06: Return Acer Diagnostic Capability (2 bytes) Bit[0] – Acer Memory Diagnostic Supported Bit[1] – Acer HDD Diagnostic Supported <i>Others are reserved.</i>

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2. ACPI Control method for ACPI Event

2.1 ACPI Event

GUID: 72B87398-E6E1-4277-8C21-86AA52BE3A60

Notification ID: Defined by ACPI BIOS engineer

Instance Count: 1

Flag: 0x08

Description: System will generate an event to notify operating system. **_WED** returns a 4-bytes value while the event is triggered. Returning value is listed as following.

Return Field

Return Field		Descriptor
_WED Return Value	Byte 0	Event Number
	Byte 1	Reserved
	Byte 2	Low byte data
	Byte 3	High byte data

Event Field Options

Event Number	Event name	Value (Byte3:Byte2)
00h	Touch button	0000h Released
		0001h Pushed
01h	System Health Monitor	0001h System Fan LED status changed
		0002h CPU Fan LED status changed
		0003h System Temperature LED status changed
		0004h CPU Temperature LED status changed
		0005h MEM LED status changed
		0006h HDD LED status changed
		0007h NVMe SSD LED status changed
02h	Turbo button	For push button
		0001h Pushed
		For toggle button
		0000h Released
03h	USB Type C detection	0001h Pushed
		0000h No Information Available (For no CC capability logic)
		0001h USB PD without Contract
		0002h USB PD with Contract
		0003h Display Port
		0004h Thunder Bolt
		0005h USB2
		0006h USB3
		00FFh Unknown Device

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3. ACPI Control Method

3.1 ACPI Control method

GUID: 61EF69EA-865C-4BC3-A502-A0DEBA0CB531

_UID: APGe

Object ID (AA): 65, 65

Instance Count: 1

Flag: 0x02

Description: Method for get or set device state, BIOS option and application existence.

1. Set BIOS Option

		Description
Control method		WMAA
Arg 0		Instance
Arg 1		Method ID (0x01) SET Function
Arg 2 Input Parameter	Byte 0	Function Number (0x03) Set BIOS option
	Byte 1	BIOS field option (refer to BIOS field options table)
	Byte 2	Sub-Function
	Byte 3	Low byte data
	Byte 4	High byte data
	Byte 5:7	Reserved
Return Value	Byte 0	Error Code 0x00: No Error 0xE1: Error (Function not support) 0xE2: Error (Undefined device/Device not exist) 0xE3: Error (EC no respond) 0xE4: Error (Invalid Parameter) 0xEF: Error (Unexpected error) Others: Reserved
	Byte 1	EC Return Value 0x00: No Error Others: EC Error Number
	Byte 2	Hotkey Number 0x00: No Error Others: Error Hotkey Number
	Byte 3	Reserved

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BIOS Field Options

Value	Meaning	Definition
01h	Reserved	Reserved
02h	Reserved	Reserved
03h	Reserved	Reserved
04h	Reserved	Reserved
05h	WiFi power status in S3/S4	0x01: ON 0x00: OFF
06h	Wake on LAN (The function must be achieved immediately) (Power On by Onboard LAN)	0x00: Disabled 0x01: Enabled
07h	Wake on WLAN (The function must be achieved immediately) (Power On by PCIE Devices)	0x00: Disabled 0x01: Enabled
08h	Reserved	Reserved
09h	OS Power Plan Status (ePower Utility send power plan)	0x00: Default (Custom) 0x01: High Performance 0x02: Balance 0x03: Power Saving
0Ah	Deep Power Off Mode	0x00: Disabled 0x01: Enabled
0Bh	Set Recovery Mode (Once at next booting) (BIOS should boot from "EFI\OEM\Boot\bootmgfw.efi", then reset the value)	0x00: Disabled 0x01: Enabled
0Ch	Set CSM & Secure Boot Default Value (Current and default settings are changed)	0x00: Secure Boot: Disabled, CSM: Always 0x01: Secure Boot: Enabled, CSM: Never
0Dh	Chassis intrusion status (Clear status as "0x00" after execute get function)	0x00: No intrusion 0x01: Intrusion
0Eh	DualLoadOS BIOS Secure Boot Change Prompt Message (refer Note.1)	0x00: No Prompt Message 0x01: Prompt Message
0Fh	DualLoadOS BIOS Secure Boot Change Prompt Message Confirmation (refer Note.1)	0x00: Not Change on Secure Boot 0x01: Confirm to change Secure Boot 0x02: Don't Care (Default)
10h	System Health Monitor (refer Note.2)	Secondary options depends on Arg2:Byte2
11h	Side Cover LED (refer Note.3)	Secondary options depends on Arg2:Byte2
12h	Fan Control (refer Note.4)	Secondary options depends on Arg2:Byte2
13h	Turbo Button/App bit (refer Note.5)	Secondary options depends on Arg2:Byte2
14h	Power On by Monitor (refer Note.6)	Secondary options depends on Arg2:Byte2
Reserved	Reserved	Reserved

⟨Note⟩

1. This function for dual load BIOS. Return "Function not support" if not dual load BIOS.
2. System Health Monitor detail descriptor as below. (If not supported, an error code return 0xE1 via Fun:01)

Arg2:Byte2	Function name	Value	Comment
00h	System Health Monitor Select (Master)	00h Disable 01h Enable 02h Test	
01h	System Fan LED	00h Off	

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		01h Green 02h Orange 03h Red	
02h	CPU Fan LED	00h Off 01h Green 02h Orange 03h Red	
03h	System Temperature LED	00h Off 01h Green 02h Orange 03h Red	
04h	CPU Temperature LED	00h Off 01h Green 02h Orange 03h Red	
05h	MEM LED	00h Off 01h Green 03h Red	Get BIOS Option Return value: Byte3[7:0] mean DIMM1 to DIMM4 status. 00: no DIMM slot 01: DIMM slot but empty 10: DIMM slot normal 11: DIMM slot error
06h	HDD LED	00h Off 01h Green 03h Red	Get BIOS Option Return value: Byte3[7:0],Byte4[3:0] mean HDD1 to HDD6 status. 00: no this SATA port 01: have this SATA port but no HDD 10: have this SATA port and HDD normal 11: have this SATA port but HDD abnormal
07h	NVMe SSD LED	00h Off 01h Green 03h Red	Get BIOS Option Return value: Byte3[7:0] indicates NVMe SSD status. 00: no NVMe SSD port 01: NVMe SSD port exists but no SSD attached 10: NVMe SSD works normally on this port 11: NVMe SSD is abnormal on this port

3. Side Cover LED detail descriptor as below. (If not supported, an error code return 0xE1 via Fun:01)

Arg2:Byte2	Function name	Value	Comment
00h	Side Cover LED	00h: Side cover LED is always OFF 01h: Side cover LED is sync with Turbo button LED Default after reboot is 01h.	

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4. Fan control detail descriptor as below. (If not supported, an error code return 0xE1 via Fun:01)

Arg2:Byte2	Function name	Value	Comment
00h	Fan control	00h: Standard. Follow fan table 01h: Full speed. Fan always turns at full speed. Default after reboot is 00h.	

5. Turbo Button/APP bit detail descriptor as below. (If not supported, an error code return 0xE1 via Fun:01)

Arg2:Byte2	Function name	Value	Comment
00h	Turbo Button control	Set 00h: Turbo button is inactivated (No overclock) 01h: Turbo button is activated (overclock) 02h: To set AP bit as 0 03h: To set AP bit as 1 04h: Turbo button action finished Get 00h: Turbo button is inactivated (No overclock) 01h: Turbo button is activated (overclock)	

6. Monitor on Button detail descriptor as below. (If not supported, an error code return 0xE1 via Fun:01)

Arg2:Byte2	Function name	Value	Comment
00h	Power On by Monitor control	Set 00h: Power On by Monitor value of BIOS setup item is set to disable. 01h: Power On by Monitor value of BIOS setup item is set to enable. Get 00h: Power On by Monitor value of BIOS setup item is disabled. 01h: Power On by Monitor value of BIOS setup item is enabled.	

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2. Get BIOS Option

		Description
Control method		WMAA
Arg 0		Instance
Arg 1		Method ID (0x02) GET Functions
Arg 2 Input Parameter	Byte 0	Function Number (0x02) Get BIOS option
	Byte 1	BIOS field options (refer to BIOS field options table above)
	Byte 2	Sub-Function
	Byte 3	Low byte data
	Byte 4	High byte data
	Byte 5:7	Reserved
Return Value	Byte 0	Error Code 0x00: No Error 0xE1: Error (Function not support) 0xE2: Error (Undefined device) 0xE3: Error (EC no respond) 0xE4: Error (Invalid Parameter) 0xEF: Error (Unexpected error) Others: Reserved
	Byte 1	Low byte data
	Byte 2	High byte data
	Byte 7:3	Reserved

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3. Get USB Type-C Setting

		Description
Control method		WMAA
Arg 0		Instance
Arg 1		Method ID (0x02) GET Functions
Arg 2 Input Parameter	Byte 0	Function Number (0x8) Get USB Type-C Setting
	Byte 1	Get USB Type-C Setting 0x01: Get Device Capability from USB-C 0x02: Get Device Connection from USB-C Reserved
	Byte 2:7	Reserved
Return Value	Byte 0	Error Code 0x00: No Error 0xE1: Error (Function not support) 0xE2: Error (Undefined device/Device not exist) 0xE3: Error (EC no respond) 0xE4: Error (Invalid Parameter) 0xEF: Error (Unexpected error) Others: Reserved
	Byte 1	Return Device Capability Which device that will be supported on USB-C in the platform. Bit[0]: USB Power Delivery Bit[1]: Display Port Bit[2]: Thunder Bolt Bit[3]: USB 2.0 Bit[4]: USB 3.0 Others Reserved
	Byte 2	Return Connected Device Which device that be connected on USB-C in the platform. 0x01: USB Power Delivery Without Contract 0x02: USB Power Delivery With Contract 0x03: Display Port 0x04: Thunder Bolt 0x05: USB 2.0 0x06: USB 3.0 0xFF: Unknown Device Others Reserved
	Byte 7:3	Reserved

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4. ACPI Control Method

4.1 Battery

GUID: 79772EC5-04B1-4bfd-843C-61E7F77B6CC9

_UID: APGe

Object ID (BE): 66, 69

Instance Count: 1

Flag: 0x02

Description: Method for get Battery information.

1. Battery Information

		Description
Control method		WMBE
Arg 0		Instance
Arg 1		Method ID (0x13) Battery Information interface
Arg 2 Input Parameter	Byte 3:0	Battery Information Index Used to query the specified information which's command code is the same as Batt_Info_Index in a smart battery. BIOS should return the battery information in byte[1:0] of return value. Please refer to smart battery spec., below Battery information Table are the MUST items.
	Byte 4	Battery Index 0x01: Primary battery 0x02: Secondary battery 0x03: Third battery. Others: Reserved Note: If selected battery does not exist, please return error code 0x0002 (Battery does not exist).
	Byte 5	Battery Critical Low Level (Get percentage value from ePM if platform support 2 nd battery, otherwise keep 0x00 for reserve) 0x00 : 0% 0x64 : 100% (Need to set 2 nd battery support bit in SMBIOS type ACh)
	Byte 7:6	Reserved
Return Value	Byte 1:0	Battery information
	Byte 3:2	Error Code 0x00: No Error 0x01: Control method not support 0x02: Battery does not exit Others: Reserved

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Battery information Table

Battery Information Index <i>Same as command code defined in smart battery spec.</i>	Battery information <i>Function name defined in smart battery spec.</i>
03h	Battery Mode
08h	Temperature
09h	Voltage
0Ah	Current
0Fh	Remaining Capacity
17h	Cycle Count
18h	Design Capacity
19h	Design Voltage
1Bh	Manufacture Date
1Ch	Serial Number
A0h	AC- Voltage (V)
A1h	AC- Current (ma)
B0h	Critical Battery Percentage
Other command code	Others

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4.2 Acer Gaming Function

GUID: 7A4DDFE7-5B5D-40B4-8595-4408E0CC7F56

_UID: APGe

Object ID (BH): 66, 72

Instance Count: 1

Flag: 0x02

Description: ASL has to Implement WMBH control method.

1. Get Acer Gaming System Information

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x1) Get Acer Gaming System Information
Arg 2 Input Parameter	Byte 0	System Information 0x00 – Get System Supported Capability 0x01 – Get System Health Information 0x02 – Get GPU Supported Capability
	Byte 1	System Health Information Index (If Byte 0 = 0x01) <i>Used to query the specified information. BIOS should return the system health information in Byte[2:1] of return value. Please refer to System Health information Table as below</i>
	Byte 3:2	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter <i>Others are reserved.</i>
	Byte 2:1	Return System Health Information <i>Return Temperature or Fan Speed by ASL code.</i>
	Byte 4:3	Return Supported Capability ▪ System Information Byte 0= 0x00 <i>-Please refer to System Supported Capability Table as below</i> ▪ System Information Byte 0= 0x02 <i>-Please refer to GPU Supported Capability Table as below</i>
	Byte 6:5	Return Supported Capability - Area Type Supported <i>Please refer to Area Matrix Table as below</i>
	Byte 7	Reserved

Function support depends on HW design.

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System Supported Capability Table

System Supported Capability (2 Bytes)	comment (0: not support/ 1: support)
Bit 0	Turbo Button Supported
Bit 1	CPU Thermal Sensor
Bit 2	CPU FAN Device
Bit 3	System Thermal Sensor.
Bit 4	System FAN (Group) Device 1
Bit 5	System FAN (Group) Device 2
Bit 6	System FAN (Group) Device 3
Other	Reserved

GPU Supported Capability Table

GPU Supported Capability (2 Bytes)	comment (0: not support/ 1: support)
Bit 0	GPU1 Thermal Sensor
Bit 1	GPU2 Thermal Sensor
Bit 2	GPU3 Thermal Sensor
Bit 3	GPU4 Thermal Sensor
Bit 4	GPU1 FAN
Bit 5	GPU2 FAN
Bit 6	GPU3 FAN
Bit 7	GPU4 FAN
Other	Reserved

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System Health Information Table

System Health Info. Index(1 Bytes)	System Health information
01h	CPU Temperature
02h	CPU Fan Speed
03h	System Temperature
04h	System Fan (Group) 1 Speed (RPM)
05h	System Fan (Group) 2 Speed (RPM)
06h	System Fan (Group) 3 Speed (RPM)
07h	CPU Voltage
08h	GPU1 Temperature
09h	GPU1 Voltage
0Ah	GPU1 Fan Speed
0Bh	GPU2 Temperature
0Ch	GPU2 Voltage
0Dh	GPU2 Fan Speed
0Eh	GPU3 Temperature
0Fh	GPU3 Voltage
10h	GPU3 Fan Speed
11h	GPU4 Temperature
12h	GPU4 Voltage
13h	GPU4 Fan Speed
14h	CPU Fan Speed Rate (0~100) %
15h	System Fan (Group) 1 Speed Rate (0~100) %
16h	System Fan (Group) 2 Speed Rate (0~100) %
17h	System Fan (Group) 3 Speed Rate (0~100) %
Other	Reserved

GPU function support depends on HW design

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2. Set Acer Gaming System Configuration

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x02) Set Acer Gaming System Configuration
Arg 2 Input Parameter	Byte 0	System Setting (1:Selected, 0:Un-selected) Bit[0] – Turbo Button control Bit[1] – CPU Fan Speed Control Bit[2] – System Fan Speed Control Bit[3] – Lighting in S3 Control
	Byte 1	Turbo Button control (when Byte0: Bit[0] is set) 0x00: Turbo button is inactivated (No overclock) 0x01: Turbo button is activated (overclock) 0x02: To set AP bit as 0 0x03: To set AP bit as 1 04h: Turbo button action finished
	Byte 2	CPU Fan Speed Control (when Bit[1] is set) 0x00 (0%) ~ 0x64 (100%) – Percentage of Fan speed (Fan always run) 0%: Fan stops working, 100%: Full speed. 0xFD – Gaming 0xFE – Silence 0xFF – Standard. Follow fan table
	Byte 3	System Fan Speed Control (when Bit[2] is set) 0x00 (0%) ~ 0x64 (100%) – Percentage of Fan speed (Fan always run) 0%: Fan stops working, 100%: Full speed. 0xFD – Gaming 0xFE – Silence 0xFF – Standard (Auto). Follow fan table
	Byte 4	Set Lighting effects in S3 (when Bit[3] is set) 0x00 – Disable 0x01 – Enable
	Byte 5	System Fan (Group) Index (when Byte0:Bit[2] is set) - Please refer to Gaming Project Matrix about index mapping
	Byte 7:6	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter Others are reserved.
	Byte 3:1	Reserved

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3. Get Acer Gaming System Configuration

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x03) Get Acer Gaming System Configuration
Arg 2 Input Parameter	Byte 0	System Setting (1:Selected, 0:Un-selected) Bit[0] – Turbo Button control Bit[1] – CPU Fan Speed Control Bit[2] – System Fan Speed Control Bit[3] – Lighting effects in S3 Control
	Byte 1	System Fan (Group) Index(when Byte 0:Bit[2] is set) - Please refer to Gaming Project Matrix about index mapping
	Byte 3:2	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter Others are reserved.
	Byte 1	Get Turbo Button Control Setting 0x00 –Turbo button is inactivated (No overclock) 0x01 –Turbo button is activated (overclock)
	Byte 2	Get CPU Fan Speed Setting 0x00 (0%) ~ 0x64 (100%) – Percentage of Fan speed (Fan always run) 0%: Fan stops working, 100%: Full speed. 0xFD - Gaming 0xFE - Silence 0xFF – Standard (Auto). Follow fan table
	Byte 3	Get System Fan Speed Setting 0x00 (0%) ~ 0x64 (100%) – Percentage of Fan speed (Fan always run) 0%: Fan stops working, 100%: Full speed. 0xFD - Gaming 0xFE - Silence 0xFF – Standard (Auto). Follow fan table
	Byte 4	Get Lighting effects setting in S3 0x00 – Disable 0x01 – Enable
	Byte 7:5	Reserved

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4. Get Acer Gaming Supported Light Patterns of Area

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x4) Get Acer Gaming Supported Light Patterns of Area
Arg 2 Input Parameter	Byte 1:0	Selected Area Select a single Area to get the supported Light Patterns, only one bit can be set.
	Byte 3:2	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter <i>Others are reserved.</i>
	Byte 2:1	Return Supported Light Patterns of Selected Area <i>Please refer to Supported Light Patterns Table as below</i>
	Byte 3	Reserved

Supported Light Patterns Table

Patterns Bit Map (2 Bytes)	comment (0: not support/ 1: support)
Bit [0]	Flash
Bit [1]	Marquee
Bit [2]	Meteor showers
Bit [3]	Pulsing (Breathing)
Bit [4]	Music
Bit [5]	Wave
Bit [6]	CPU temperature
Bit [7]	GPU temperature
Bit [8]	Risen
Bit [9]	Rainbow stack
Bit [10]	Extend
Bit [11]	Meteor showers 2
Bit [12]	Fluid magic light
Other	Reserved

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5. Set Acer Gaming LED Behavior

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x05) Set Acer Gaming LED Behavior
Arg 2 Input Parameter	Byte 1:0	Selected Area Select the Area for LED Behavior Setting (1:Selected, 0:Un-selected) <i>Please refer to Area Type Table as below</i>
	Byte 2	LED Status 0x00 – OFF 0x01 – ON
	Byte 3	Lighting Type Set Light Patterns for selected Area <i>Please refer to Light Patterns Table as below</i>
	Byte 4	Set Light parameter Bit[0] – Speed Bit[1] – Duration Bit[2] – Type
	Byte 5	Speed (when Byte4: Bit[0] is set)
	Byte 6	Duration (when Byte4: Bit[1] is set)
	Byte 7	Type (when Byte4: Bit[2] is set)
	Byte 8	Index (when Byte 3 Lighting Type is GPU temperature)
	Byte 9	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter <i>Others are reserved.</i>
	Byte 3:1	Reserved

Area Type Table

Area Bit Map, (2 Bytes)	comment (0: not support/ 1: support)	
Bit [0]	Area 1	Turbo Button
Bit [1]	Area 2	Side Cover
Bit [2]	Area 3	Logo
Bit [3]	Area 4	V Badge
Bit [4]	Area 5	Highlights
Bit [5]	Area 6	Power Button
Bit [6]	Area 7	Front Face
Bit [7]	Area 8	Left Side Face
Bit [8]	Area 9	Motherboard
Other	Reserved	

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Light Patterns Table

Pattern Index (1 Bytes)	comment		
00h	Normal (None)		Type
01h	Flash	Speed,	Type
02h	Marquee	Duration, Speed	Type
03h	Meteor showers	Duration, Speed	Type
04h	Pulsing(Breathing)	Duration	Type
05h	Music		Type
06h	Wave	Speed	Type
07h	CPU temperature	Speed	Type
08h	GPU temperature	Speed	Type
09h	Risen	Speed	
0Ah	Rainbow stack	Speed	
0Bh	Extend	Speed	
0Ch	Meteor showers 2	Speed	
0Dh	Fluid magic light	Speed	
Other	Reserved		

6. Get Acer Gaming LED Behavior

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x06) Get Acer Gaming LED Behavior
Arg 2 Input Parameter	Byte 1:0	Selected Area Select a single Area to get LED Behavior Setting, only one bit can be set.
	Byte 7:2	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter <i>Others are reserved.</i>
	Byte 1	Return LED Status
	Byte 2	Return Light Pattern Index
	Byte 3	Return Speed
	Byte 4	Return Duration
	Byte 5	Return Type
	Byte 6	Return Index (when Byte 2 Return Light Pattern Index is GPU temperature)
	Byte 7	Reserved

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7. Set Acer Gaming RGB Setting

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x07) Set Acer Gaming RGB Setting
Arg 2 Input Parameter	Byte 1:0	Selected Area Select the Area for LED RGB Setting (1:Selected, 0:Un-selected)
	Byte 4:2	Set RGB color for Area (when Selected Area Byte [1:0] is set) Byte 2: 0x0 ~ 0xFF (Red Color) Byte 3: 0x0 ~ 0xFF (Green Color) Byte 4: 0x0 ~ 0xFF (Blue Color)
	Byte 5	Luminance
	Byte 7:6	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter <i>Others are reserved.</i>
	Byte 3:1	Reserved

8. Get Acer Gaming RGB Setting

		Description
Control method		WMBH
Arg 0		Instance
Arg 1		Method ID (0x08) Get Acer Gaming RGB Setting
Arg 2 Input Parameter	Byte 1:0	Selected Area Select a single Area to get the RGB Setting, only one bit can be set.
	Byte 3:2	Reserved
Return Value	Byte 0	Return Code 0x00 – Success 0x01 – Function Not Support 0x02 – Invalid Parameter <i>Others are reserved.</i>
	Byte 3:1	Return RGB color for selected Area Byte 1: 0x0 ~ 0xFF (Red Color) Byte 2: 0x0 ~ 0xFF (Green Color) Byte 3: 0x0 ~ 0xFF (Blue Color)
	Byte 4	Return Luminance for selected Area
	Byte 7:5	Reserved

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Gaming Project Matrix

Area (2 Bytes)	Turbo Button	Fan Speed	LED Area	LED setting
G1		yes	Logo, V Badge, Highlights	yes
Orion 9000	yes	yes	Front Face, Left Side Face, Motherboard	yes
Orion 5000	no	yes	no	no

1. Predator G1

Area Type Supported: 00000000 00011100b -> Support Logo, V Badge, and Highlights.

Area	Supported Light patterns
Area 3 Logo	00000000 00001010b (Marque, Pulsing)
Area 4 V Badge	00000000 00011110b (Marquee, Meteor showers, Pulsing, Music)
Area 5 Highlights	00000000 00011010b (Marquee, Pulsing, Music)

Light Pattern Index (1 Bytes)	Pattern	Speed	Duration	Type
00h	Normal			0x00: assigned color / 0x01: various colors
02h	Marquee	1~10	1~10	0x00: assigned color / 0x01: various colors
03h	Meteor showers	1~10	1~10	0x00: assigned color / 0x01: various colors
04h	Pulsing		1~10	0x00: assigned color / 0x01: various colors
05h	Music			0x00: assigned color / 0x01: various colors

2. Predator Orion 9000

[PO9-900, PO9-100]

Area Type Supported: 00000001 11000000b -> Support Front Face, Left Side Face, and Mother Board

Area	Supported Light patterns
Area 7 Front Face	00000000 00111000b (Pulsing, Music, Wave, CPU Temp)
Area 8 Left Side Face	00000000 00001000b (Pulsing)
Area 9 Motherboard	00000000 00001000b (Pulsing)

Note: Left Side Face= onboard RGB Header

[PO9-600]

Area Type Supported: 00000000 11000000b -> Support Front Face, Left Side Face

Area	Supported Light patterns
Area 7 Front Face	00000000 00111000b (Pulsing, Music, Wave, CPU Temp)
Area 8 Left Side Face	00000000 00001000b (Pulsing)

Light Pattern Index (1 Bytes)	Pattern	Speed	Duration	Type
00h	Normal			0x00: assigned color / 0x01: various colors
04h	Pulsing(Breathing)		1~10	0x00: assigned color / 0x01: various colors
05h	Music			0x00: assigned color / 0x01: various colors
06h	Wave	1~10		0x00: assigned color / 0x01: various colors
07h	CPU temperature	1~10		0x00: assigned color / 0x01: various colors

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Get System Fan Speed

System Health Information Table	PO9-900 / PO9-600 / PO9-100
04h System Fan (Group) 1 Speed (RPM)	Front System Fan (Group)
05h System Fan (Group) 2 Speed (RPM)	Back System Fan (Group)
06h System Fan (Group) 3 Speed (RPM)	N/A
15h System Fan (Group) 1 Speed Rate (0~100) %	Front System Fan (Group)
16h System Fan (Group) 2 Speed Rate (0~100) %	Back System Fan (Group)
17h System Fan (Group) 3 Speed Rate (0~100) %	N/A

System Fan Control

System Fan Group Index (1 Bytes)	PO9-900 / PO9-600 / PO9-100
01h System Fan (Group) 1	Front System Fan (Group)
02h System Fan (Group) 2	Back System Fan (Group)
03h System Fan (Group) 3	N/A

3. Predator Orion 5000

Area Type Supported: 00000000 00000000b

Get System Fan Speed

System Health Information Table	PO5-100 / PO5-600 / PO5-610
04h System Fan (Group) 1 Speed (RPM)	System Fan (Group)
05h System Fan (Group) 2 Speed (RPM)	N/A
06h System Fan (Group) 3 Speed (RPM)	N/A
15h System Fan (Group) 1 Speed Rate (0~100) %	System Fan (Group)
16h System Fan (Group) 2 Speed Rate (0~100) %	N/A
17h System Fan (Group) 3 Speed Rate (0~100) %	N/A

System Fan Control

System Fan Group Index (1 Bytes)	PO5-100 / PO5-600 / PO5-610
01h System Fan (Group) 1	System Fan (Group)
02h System Fan (Group) 2	N/A
03h System Fan (Group) 3	N/A

4. Predator Orion 9000 RGB

[PO9-900 RGB]

Area Type Supported: 00000001 11000000b -> Support Front Face, Left Side Face, and Mother Board

Area	Supported Light patterns
Area 7 Front Face	00011111 00111000b (Pulsing, Music, Wave, Risen, Rainbow stack, Extend, Meteor showers 2, Fluid magic light)
Area 8 Left Side Face	00000000 00001000b (Pulsing)
Area 9 Motherboard	00000000 00001000b (Pulsing)

Note: Left Side Face= onboard RGB Header

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[PO9-600 RGB]

Area Type Supported: 00000000 11000000b -> Support *Front Face, Left Side Face*

Area	Supported Light patterns
Area 7 <i>Front Face</i>	00011111 00111000b (Pulsing, Music, Wave, <i>Risen, Rainbow stack, Extend, Meteor showers 2, Fluid magic light</i>)
Area 8 <i>Left Side Face</i>	00000000 00001000b (Pulsing)

Light Pattern Index (1 Bytes)	Pattern	Speed	Duration	Type
00h	Normal			0x00: assigned color / 0x01: various colors
04h	Pulsing(Breathing)		1~10	0x00: assigned color / 0x01: various colors
05h	Music			0x00: assigned color / 0x01: various colors
06h	Wave	1~10		0x00: assigned color / 0x01: various colors
09h	<i>Risen</i>	1~10		
0Ah	<i>Rainbow stack</i>	1~10		
0Bh	<i>Extend</i>	1~10		
0Ch	<i>Meteor showers 2</i>	1~10		
0Dh	<i>Fluid magic light</i>	1~10		

Get System Fan Speed

System Health Information Table	PO9-900 RGB / PO9-600 RGB
04h System Fan (Group) 1 Speed (RPM)	Front System Fan (Group)
05h System Fan (Group) 2 Speed (RPM)	Back System Fan (Group)
06h System Fan (Group) 3 Speed (RPM)	N/A
15h System Fan (Group) 1 Speed Rate (0~100) %	Front System Fan (Group)
16h System Fan (Group) 2 Speed Rate (0~100) %	Back System Fan (Group)
17h System Fan (Group) 3 Speed Rate (0~100) %	N/A

System Fan Control

System Fan Group Index (1 Bytes)	PO9-900 RGB/ PO9-600 RGB
01h System Fan (Group) 1	Front System Fan (Group)
02h System Fan (Group) 2	Back System Fan (Group)
03h System Fan (Group) 3	N/A

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4.3 ABCT (Acer BIOS Configuration Tool)

GUID: 4BB53443-488A-430D-A25C-874660E23BDD

_UID: APGe

Object ID (AC): 65, 67

Instance Count: 1

Flag: 0x02

Description: Method for ABCT support to set BIOS options. (Commercial only)

1. Set BIOS Options of ABCT

		Description
Control method		WMAC
Arg 0		Instance
Arg 1		Method ID (0x01) Set BIOS Options of ABCT
Arg 2 Input Parameter	Byte 0:1	Supervisor password length (2 bytes)
	Byte 2:13	Supervisor password in scan code or UTF-8 (12 bytes)
	Byte 14:2061	BIOS Setup Data Structure (2048 bytes)
Return Value	Byte 0:3	Return Code 0x08: Success and Reboot required to make function works 0x01: Control method not supported 0x02: Incorrect Password 0x07: Password retry count exceeded 0xD1: Incompatible Data Structure

2. Get BIOS Options of ABCT

		Description
Control method		WMAC
Arg 0		Instance
Arg 1		Method ID (0x02) Get BIOS Options of ABCT
Arg 2		Arg2 is a 14-byte buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)
Return Value	Byte 0:3	Return Code 0x00: Success 0x01: Control method not supported 0x02: Incorrect Password 0x07: Password retry count exceeded
	Byte 4:2051	BIOS Setup Data Structure (2048 bytes)

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3. Set BIOS Default Options of ABCT

		Description
Control method		WMAC
Arg 0		Instance
Arg 1		Method ID (0x03) Set BIOS Default Options of ABCT
Arg 2 Input Parameter	Byte 0:1	Supervisor password length (2 bytes)
	Byte 2:13	Supervisor password in scan code or UTF-8 (12 bytes)
	Byte 14:2061	BIOS Setup Data Structure (2048 bytes)
Return Value	Byte 0:3	Return Code 0x08: Success and Reboot required to make function works 0x01: Control method not supported 0x02: Incorrect Password 0x07: Password retry count exceeded 0xD1: Incompatible Data Structure

4. Get BIOS Default Options of ABCT

		Description
Control method		WMAC
Arg 0		Instance
Arg 1		Method ID (0x04) Get BIOS Default Options of ABCT
Arg 2		Arg2 is a 14-byte buffer Byte 00~01: Supervisor password length (2 bytes) Byte 02~13: Supervisor password in scan code or UTF-8 (12 bytes)
Return Value	Byte 0:3	Return Code 0x00: Success 0x01: Control method not supported 0x02: Incorrect Password 0x07: Password retry count exceeded
	Byte 4:2051	BIOS Setup Data Structure (2048 bytes)

5. BIOS Setup Data Structure

Category	Item	Offset (Byte)	Size (Bytes)	Value	Note
Structure Header	Data Version	0	4	It's a serial number to identify what structure applied to the platform	
	Data Size	4	8	The actual size to the structure included header	
System Function	Intel Hyper-Threading	12	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Active Processor Cores	13	1	0x00: All	

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			0x01: Single core 0x02: 2 cores ... 0x0N: N cores 0xFF: Not Supported
Intel EIST	14	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Intel Turbo Boost	15	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Intel AES-NI	16	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Intel VT	17	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Intel AMT	18	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Intel VT-d	19	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Intel TXT	20	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
AMD NX Mode	21	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
AMD SVM Mode	22	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
AMD CPB Mode	23	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
AMD Core Leveling Mode	24	1	0x00: Automatic mode 0x01: One core per processor 0x02: One Compute Unit 0x03: One core per Compute Unit 0xFF: Not Supported
DASH	25	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
DASH Console Redirection	26	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
ASF	27	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
System Health Indicator	28	1	0x00: Disabled 0x01: Enabled

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Device Control	Optimized Memory Resource for Windows 7 32-Bit	29	1	0xFF: Not Supported 0x00: Maximum 0x01: Normal 0xFF: Not Supported	
	Performance/Watt	30	1	0x00: Performance 0x01: Energy Efficient 0xFF: Not Supported	
	Reserved	31	20	Reserved	
	Onboard Graphics Controller	51	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	Follow VGA policy of BIOS setup specification
	Onboard SATA Controller	52	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Onboard SATA Mode	53	1	0x00: Native IDE 0x01: RAID 0x02: AHCI 0xFF: Not Supported	
	Onboard Audio Controller	54	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Onboard LAN Controller	55	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Onboard LAN Option ROM	56	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Onboard Wi-Fi Module	57	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	For standalone Wi-Fi module
	Onboard Bluetooth Module	58	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	For standalone Bluetooth module
	Serial Port1 Address	59	1	0x00: Disabled 0x01: 3F8/IRQ4 0x02: 2F8/IRQ3 0x03: 3E8/IRQ4 0x04: 2E8/IRQ3 0xFF: Not Supported	
	Serial Port2 Address	60	1	0x00: Disabled 0x01: 3F8/IRQ4 0x02: 2F8/IRQ3 0x03: 3E8/IRQ4 0x04: 2E8/IRQ3 0xFF: Not Supported	
	Parallel Port Address	61	1	0x00: Disabled 0x01: 378 0x02: 278 0x03: 3BC	

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Parallel Port Mode	62	1	0xFF: Not Supported 0x00: Normal 0x01: EPP 0x02: ECP 0x03: EPP+ECP 0xFF: Not Supported	
Onboard Wi-Fi/ Bluetooth Module	63	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	For CNVi module
Pre-allocated Memory Size	64	1	0x00: 32 MB 0x01: 64 MB 0x02: 128 MB 0x03: 256 MB 0x04: 512 MB 0xFF: Not Supported	For Intel platforms
UMA Frame Buffer Size	65	1	0x00: Auto 0x01: 128 MB 0x02: 256 MB 0x03: 512 MB 0x04: 1 GB 0xFF: Not Supported	For AMD platforms
SMART Self -Test	66	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
Parallel Port IRQ	67	1	0x00: IRQ5 0x01: IRQ7 0xFF: Not Supported	
SATA Port #1	68	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
SATA Port #2	69	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
SATA Port #3	70	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
SATA Port #4	71	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
SATA Port #5	72	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
SATA Port #6	73	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
NVMe Port #1	74	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
NVMe Port #2	75	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	

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IO Ports	NVMe Port #3	76	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	NVMe Port #4	77	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Reserved	78	3	Reserved
	Front USB Ports	81	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Rear USB Ports	82	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Left USB Ports	83	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Right USB Ports	84	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Optional Card Reader	85	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Legacy USB Support	86	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	USB Storage Emulation	87	1	0x00: Auto 0x01: Floppy 0x02: Hard Disk 0xFF: Not Supported
	Reserved	88	73	Reserved
Power and Event Control	Deep Power Off Mode	161	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Power On by RTC Alarm	162	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Time (hh:mm:ss)	163	3	Byte[0] -> Second Byte[1] -> Minute Byte[2] -> Hour
	Day	166	1	0x0: Every Day 0x1: 1st day for each month 0x2: 2nd day for each month ...
				0x31: 31st day for each month
	Power On by PCIE Devices	167	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Power On by PCI Devices	168	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
	Power On by Onboard	169	1	0x00: Disabled

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	LAN			0x01: Enabled 0xFF: Not Supported	
	Power On by Monitor Power Button	170	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Wake Up by PS/2 KB/Mouse	171	1	0x00: Disabled 0x01: S3 0x02: S4&S5 0xFF: Not Supported	
	Wake Up by USB KB/Mouse	172	1	0x00: Disabled 0x01: S3 0x02: S4&S5 0xFF: Not Supported	
	Restore On AC Power Loss	173	1	0x00: Off 0x01: On 0x02: Last State 0xFF: Not Supported	
	USB Charge Function	174	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Power On by Modem Ring	175	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Power On by Monitor on DP Port	176	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Power On by Monitor on HDMI Port	177	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Power On by Monitor on VGA Port	178	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
	Reserved	179	12	Reserved	
Security	Change Supervisor Password	191	14	Byte 00~01: password length in byte (2 bytes) Byte 02~13: password context in scan code or UTF-8 (12 bytes)	
	Change User Password	205	14	Byte 00~01: password length in byte (2 bytes) Byte 02~13: password context in scan code or UTF-8 (12 bytes)	
	Security Option	219	1	0x00: Setup 0x01: System 0xFF: Not Supported	
	TPM Device Selection	220	1	0x00: dTPM 0x01: PTT 0xFF: Not Supported	For Intel Platform
	TPM Device Selection	221	1	0x00: dTPM 0x01: fTPM 0xFF: Not Supported	For AMD Platform
	TPM Support	222	1	0x00: Disabled	

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			0x01: Enabled 0xFF: Not Supported	
Removable Device Boot	223	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
BIOS Write Protect	224	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
Chassis Opened Warning	225	1	0x00: Disabled 0x01: Enabled 0x02: Clear 0xFF: Not Supported	
Secure Boot	226	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	Refer to <i>Note1</i>
TPM State	227	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	Not supported on TPM2.0
TPM Operation	228	1	0x00: None 0x01: Clear 0xFF: Not Supported	Set-default may not be configurable due to security concern
USB Device Filter	229	1	0x00: All Allowed 0x01: Keyboard/Mouse Only 0x02: Read-Only 0xFF: Not Supported	
SHA-1 PCR Bank	230	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	Item for configuring TPM 2.0
SHA256 PCR Bank	231	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	Item for configuring TPM 2.0
Boot Sector Virus Protection	232	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	
Secure Boot Mode	233	1	0x00: Standard 0x01: Custom 0xFF: Not Supported	Hide this item if "Secure Boot" is disabled
Default Key Provisioning	234	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported	Selectable if "Secure Boot Mode" is <i>Custom</i>
Reserved	235	6	Reserved	
POST Behaviors	Launch CSM	241	1	0x00: Never 0x01: Always 0xFF: Not Supported
	Boot Filter	242	1	0x00: UEFI 0x01: Legacy

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	1st Boot Device	243	4	0xFF: Not Supported
	2nd Boot Device			0x01: Hard Disk
	3rd Boot Device			0x02: CD&DVD
	4th Boot Device			0x03: Removable Device
				0x04: LAN
				0xFE: Disabled
				0xFF: Not Supported
	Boot Menu	247	1	0x00: Disabled
				0x01: Enabled
				0xFF: Not Supported
	Fast Boot	248	1	0x00: Disabled
				0x01: Enabled
				0xFF: Not Supported
	Quiet Boot	249	1	0x00: Disabled
				0x01: Enabled
				0xFF: Not Supported
	Bootup Num-Lock	250	1	0x00: Off
				0x01: On
				0xFF: Not Supported
	D2D Recovery	251	1	0x00: Disabled
				0x01: Enabled
				0xFF: Not Supported
	Halt On	252	1	0x00: All Errors
				0x01: No Errors
				0x02: All, but Keyboard
				0xFF: Not Supported
	Reserved	253	78	Reserved
Date and Time	Date (mm:dd:yy²yy¹)	331	4	Byte[0] -> Date
				Byte[1] -> Month
				Byte[2] -> Year (yy ¹)
				Byte[3] -> Year (yy ²)
Date and Time	Time (hh:mm:ss)	335	3	Byte[0] -> Second
				Byte[1] -> Minute
				Byte[2] -> Hour
	Reserved	338	13	Reserved
Language	System Language	351	1	0x00: English
				0x01: 中文 (繁體)
				0x02: 中文 (简体)
				0x03: Nederlands
				0x04: Español
				0x05: Français
				0x06: Deutsch
				0x07: Italiano
				0x08: 日本語
				0x09: Turkish
				0x0A: Русский
				0xFF: Not Supported
	Reserved	352	9	Reserved
System Health	System Shutdown Temperature	361	1	0x00: Disabled
				0x01: Enabled
				0xFF: Not Supported

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CPU Shutdown Temperature	362	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
VRD Shutdown Temperature	363	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Smart Fan	364	1	0x00: Disabled 0x01: Enabled 0xFF: Not Supported
Reserved	365	16	Reserved
Reserved	Reserved		Reserved

Note1:

Secure Boot	CSM	Boot Filter
Enabled	Never (x)	UEFI (x)
Disabled	Never	UEFI (x)
	Always	UEFI/Legacy

(x): Cannot change by user

6. Get USB Device Filter status of ABCT

		Description
Control method		WMAC
Arg 0		Instance
Arg 1		Method ID (0x05) Get USB Device Filter status of ABCT
Return Value	Byte 0:3	Return Code 0x00: Success 0x01: Control method not supported 0x02: Invalid Parameter
	Byte 4	0x00: All Allowed 0x01: Keyboard/Mouse Only 0x02: Read-Only 0xFF: Not Supported

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5. Acer SMBIOS Type

Below is SMBIOS table information about IOAC features:

Acer WMI SPEC Revision and Support (SMBIOS Type ACh)

Offset	Spec Version	Name	Length	Value	Description
00	2.0+	Type	BYTE	172	Acer SMBIOS Revision and Support type
01	2.0+	Length	BYTE	Varies	Length of the structure.
02	2.0+	Handle	WORD	Varies	
04		Major revision	BYTE	5	Define major revision of the WMI SPEC
05		Minor revision	BYTE	3	Define minor revision of the WMI SPEC
06+3*(n-1)		Function <i>n</i>	BYTE	Varies	Function supported in BIOS
07+3*(n-1)		Parameter for function <i>n</i>	WORD	Varies	Parameter of function

Function Definition

Function n	Function name	Parameter
01h	Reserved	Reserved
02h	Wireless connection	01h Generic 02h Instant connect 03h Always connect
03h	Reserved	Reserved
04h	LAN connection	01h Generic 03h Always connect
05h	Reserved	Reserved
06h	2 nd Battery	01h Support FFh Not Support
Others	Reserved	Reserved