

Casio G'zOne Ravine 2

modification guide

Introduction

This document describes all steps required to run BREW applications on Ravine 2. Please be aware, that Casio released four revisions of this device:

- C781
- C781H
- C781NC
- C781NCH

This guide was written for C781 and C781H only. It may or may not work with NC revisions. These devices were not tested.

Probably every firmware version is supported, but devices with firmware **other** than WC781VWB885F.252 <u>must be restored to factory state using flashing application</u>. During this process a lot of device specific information <u>will be erased</u> (e.g. production date). Make sure to create a backup before proceeding!

Guide was based on research and information found in topic below: <u>http://forum.allsiemens.com/viewtopic.php?t=62590</u>

Make sure to give thanks to kraze1984 for hours spent on researching this device!

Preparation

At the beginning make sure that battery is fully charged. Do not continue otherwise - you will brick your device if your device will run out of charge during the process! Once device will be fully charged, power it on. Go to MENU -> Settings & Tools -> 12. USB Mode and change the setting to Modem Mode. In newer firmware versions, this option will be called Charge Only.





Now you have prepared device to be detected correctly by your PC or laptop. Make sure they are running either <u>Windows XP</u> or <u>Windows 7</u> - other systems are either not tested or not supported. <u>Windows 10 will not work!</u>

Installing flashing application

BREW environment/system was designed to run applications which were signed specially for them. If application was not signed or signature was invalid for a device - it will not be opened. In order to run unsigned applications with any valid certificate, a special firmware version needs to be flashed to the device. By enabling **Modem Mode**, service port became available. Thanks to it, it is possible to flash modified firmware. Now connect your C781 to PC/laptop. After a few seconds new interfaces will be detected and system will ask for drivers. Use drivers from **C781_drivers.zip** package attached to post below:

http://forum.allsiemens.com/viewtopic.php?p=1119772#1119772

System will detect three new interfaces.

✿ CASIO C781 USB Composite Device(UDP) ▶ CASIO C781(UDP) ፆ CASIO C781 Diagnostic Serial Port(UDP)

Now, install two applications in following order:

- PT_PST_Framework_Store_NCMC_v3.9_70111.msi
- PT_PST_C781_Store_v1.4.5.1_B0322.msi

Both applications and required firmware are available in following post: <u>http://forum.allsiemens.com/viewtopic.php?p=1119806#1119806</u>

Additional steps for new firmware versions

Before starting application, check firmware version which you have by going to MENU -> Settings & Tools -> Phone Info -> SW/HW Version -> Software Version. If you have firmware version WC781VWB885F.252, then you are ready to go. In case of any other firmware (especially WC781VWF211F.252), you will probably need to use patched Download_PST.dll. You can find it on the link below (it's also available in previous link):

https://mega.nz/file/iXJxVK4S#JJIx5wEgktJ5oM9_L1BEz6lfzg61V5PlU5qCKoFFSUA

Copy it to following folder (if you haven't changed it during installation):

C:\Program Files\NCMC\PST\Store\C781

This file will alter flashing procedure, so **EFS2** partition will be **re-formatted**. All your data will be wiped. You may decide to not use this file and keep your data, but please be warned that **EFS2 partition will be corrupted** as the result. **Some applications** <u>will not</u> work afterwards.

Some data like phone activation can be saved to a file using **PT NCMC PST** application. On the first run, application will ask which interface it should use to connect to the device. Please select **CASIO C781(UDP)** port. If application will not detect your phone, try other port. Once correct port will be selected, application will display information about your device. Now press the **Phone Setting** button. Please mark **Settings** box from the list - it will mark all available options. Finally, press the **Read from Phone** button to acquire all information from the device.

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S/W Upgrade	Display Grouping					
V Nam1	Menu	Value	^			
Rhope Setting	Basic Information					
Finite secting	MEID(Hex)	0×A1				
Browser	MEID(Dec)	27				
Contact Phone Directory	Pseudo ESN(Hex)	0×8				
Data	Pseudo ESN(Dec)	12				
Transfer	CAI Ver					
Location Base	Firmware #					
	Model #					
	Manufacturer Date Code	07/04/2014	≡			
	Warranty Date Code	02/20/2015 10:24				
IPC Upgrade	Bluetooth Address	38				
	Phone Type	Dual-mode(band class type: 0.1)				
	Version Information					
	H/W ID	REV_02				
	S/W Ver					
	Compiled	Dec 12 2011 22:53:12				
	PBL Information					
	PRI Size	4				
	PRI ID	5				
	Pref. Only	True				
	Roam Ind	6				
Connect Information	Aca Rec. #	6				
Model: C781	Svc Boo #	440	~			
S/W ver:		Sat reading Completed 400%				
WC781VWB885F.252	Phone	eser reading completed 100%	1 .			
Refresh File Op	en 📙 File Sav	ve t Read from Phone	Write to Phone			
C781		MEID:0×A10000290F1583	COM9 Connected			

Once all fields will be populated, press the **File Save** button and save configuration in desired location. Now you can start flashing the firmware.

Flashing the firmware

If you haven't done it already, open the **PT PST Store** application. On the first run, application will ask you for a correct interface to connect to the device. Please select **CASIO C781(UDP)**. If application will not be able to detect your device, please select other available port. If done correctly, application will detect your device and will display information about it. Press the [...] button to select firmware file (make sure to extract it first!). **CEFS** box will be marked only if patched DLL was used. Application will ask you for confirmation. If no errors will be reported, you can press [**RUN**] button to flash the firmware.

📅 NCMC PST (C781 - ver: '	1.4.5.1)				
Function Help					
S/W Upgrade					
Phone Setting	Firmware File				
	C:\Documents and Settings\ \c781\\	VC781VWB885F	_brew\WC781VWB	3885F.252b	
Contact	-Firmware Information				
	Model: C791	✓ 1:INFO	2:DBL	3:FSBL	4:OSBL
Transfer	Version: WC781VWB885F.252 Compile Date: Dec 12 2011 22:53:12	₹ 5:AMSS	✓ 6:RSC	▼ 7:ISO	✓ 8:CEFS
PRL,ERI Program					
UPC Upgrade	-Mabila Db	one Information			
		Model:	C781		
		Version: Compile Date:	WC781VWF211 Feb 3 2015 13	F.252 :01:47	
Connect Information					
Model: C781	Status Firmware Upgrade Ready				
S/W ver:		Ingrading firmwa	re is completed 0%		
WC781VWF211F.252	· · · · · · · · · · · · · · · · · · ·		in the completion of the		
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Process will take about 5 minutes. Do not disconnect or better not touch the device/cable until it will be completed. Device will reboot automatically once firmware will be flashed. If patched **Download_PST.dll** was used, additional step will be displayed on phone's screen. Please wait till it will be done.



Restoring backup

If your EFS2 partition was wiped, make sure to restore saved data. Re-configure USB Mode as described in **Preparation** section. Open **PT PST Store** application, go to **Phone Setting**, press the **File Open** and select previously saved configuration file. Press the **Write to Phone** button to restore the data. Phone will reboot once process will be completed. Now you are ready to continue.

Checking if firmware was flashed correctly

This is an optional step, but will save a lot of time if some application will refuse to work. Go to **MENU** -> **Apps** and open **Mobile IM**.



If application will run normally, then you can proceed to next step. If nothing happens or device will simply restart, then your **EFS2** partition **became corrupted**. Go back to **Additional steps for new firmware versions** section and re-flash firmware using patched **Download_PST.dll** file. Make sure to perform all following steps.

AppManager installation

There is no installation wizard for BREW applications. All application files needs to be copied to a proper directories in the internal memory of the device. Otherwise system will not detect them. This is not safe method, as device detects new applications during booting phase. If application is unstable or incompatible, it may lead to a boot-loop. There is no recovery method. If this happens to your device, then it will never boot again. Because of this, there is a need to "install" AppManager, so applications can be opened directly from SD card. Thanks to it, if boot-loop happens you will simply need to remove SD card and delete faulty application.

AppManager can be found in the following topic: <u>http://forum.allsiemens.com/viewtopic.php?t=62774</u>

Application needs to be copied to internal memory of the phone. This can be done using **IoE Development Tools**. Once tools are be installed, open **Loader** application. In the selection window

choose Brew MP Targets [COM/BTIL] and CASIO C781 Diagnostic Serial Port(UDP) (COM port number may be different!).

Connection Manager
Connection Manager Locating Your Brew Device
Device Settings Select the connection type: Brew MP Targets [COM/BTIL]
Connect to my device on the following port: COM8: CASIO C781 Diagnostic Serial Port(UDP)
OK Cancel

At the first connection application will ask you for the certificate. You can find one in following topic: http://forum.allsiemens.com/viewtopic.php?p=490737#490737

If everything was done correctly, catalogue tree will be displayed. Now copy whole **appmgr folder** to **fs:/mod** directory including all files:

- appmgr.mod
- appmgrln.bar
- appmgrls.bar

Loader - Connected to -	3587					
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🖻 🖓 fs:/mod 🛛 🔄	Name	Size Type	Modified	Attributes		<u>~</u>
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⊕-≫ 10890	281280	Directory				
🖻 🌾 10891	281351	Directory				
⊕-≫ 10892	36913	Directory				
⊕ 11623	972	Directory				
⊞-≫ 12513	🔁 a2dp	Directory				
I3478	2 aee1	Directory				
⊕ 🎾 16225	aeemediavideo	Directory				
🗉 🍎 18067	app_cm	Directory				
	appmgr	Directory				
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Loader - Connected to - 3587			
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🗉 🎾 281280 🔰 appmgrin.bar	33892 bytes File	01/06/80,00	
🗉 🎾 281351 🛛 🔍 appmgrls.bar	12952 bytes File	01/06/80, 00:	
⊞-9 36913			
⊞ 🎾 4972			
🗷 🎾 a2dp			
æ 🎾 aee1			
appmgr			
avrcp			
# > avrcpremotectlext			
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Once done, go to **fs:/mif** and copy there the **appmgr.mif** file.

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i≜-∽⊋ fs:/sys	🧶 280985.mif	3845 bytes File	01/06/80, 00:			
	👰 280986.mif	329 bytes File	01/06/80, 00:			
	🧕 281160.mif	2117 bytes File	01/06/80, 00:			
	🧕 281280.mif	15357 bytes File	01/06/80, 00:			
	🧕 281351.mif	11064 bytes File	01/06/80, 00:			
	🧕 36913.mif	10894 bytes File	01/06/80, 00:			
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	👰 a2dp.mif	1148 bytes File	01/06/80, 00:	С		
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	🗐 aeedebugset.mif	133 bytes File	01/06/80, 00:	С		
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	💆 amsapp.mif	242 bytes File	01/06/80, 00:	С		
	😓 app_cm.mif	3166 bytes File	01/06/80, 00:	С		
	🗐 appmgr.mif	2096 bytes File	01/06/80, 00:			
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	💆 btilmain.mif	454 bytes File	01/06/80, 00:	С		
	💆 btilsec.mif	404 bytes File	01/06/80, 00:	С		
	🔋 btmanager.mif	216 bytes File	01/06/80, 00:	С		
	💆 concurconfig.mif	246 bytes File	01/06/80, 00:	С		
	💆 concurrency.mif	366 bytes File	01/06/80, 00:	С		
	💆 cwsappall.mif	18590 bytes File	01/06/80, 00:	С		
	💆 dungw.mif	1162 bytes File	01/06/80, 00:	С		_
	💆 ftpclient.mif	194 bytes File	01/06/80, 00:	C		
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	💆 hfag.mif	1186 bytes File	01/06/80, 00:	С		
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	IS obexserver.mif	184 bytes File	01/06/80.00:	С		 <u> </u>
Ready			🥝 Cor	nected	Mem Free/Total: 221168K / 266182K	

Finally you can restart your device. While not recommended, you can install other applications in the same way. Instruction how to use **AppManager** is located in **Running applications** section.

Application installation on the SD card

In order to run applications from the **SD card** a proper folder structure is necessary. On the **root directory** of SD card create a **brew** directory (case sensitive!). Inside **brew** directory create **usermods** folder (case sensitive!). For each application, you need to create a <u>separate</u> folder inside **usermods**. In this folder you should put all application files (including **MIF file**). Below an example from **FManager**:

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File Home	Share	View									~ 🕐
← → • ↑	📕 > US	B Drive (G:) → brew → userm	ods > FManager			~	U	Q	Search F	Manager	
💪 OneDrive	^	Name		Date modified	Туре	Size					
🐚 This PC	- 11	FManager.mif		11-05-2010 23:52	MIF File	6 KB					
		🖹 FManager.mod		12-05-2010 00:57	MOD File	24 KB					
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In general, structure looks like this:

Please be aware, that **folder**, **.BAR**, **.MOD** and **.SIG filenames** usually must be the same (case sensitive!). You can use build-in **Mass Storage** feature to copy files without removing **SD card** from the device. Be aware, that in that case new applications will be detected **after device reboot**. If you decide to remove **SD card** and copy files using **external SD card reader**, then new applications will be detected without reboot - after **SD card** will be inserted back to the device.

Running applications

Once AppManager was installed, it will take place of stock App application. In order to open it, go to MENU -> Apps.



Use the joystick and select application which you would like to run and then press the button in the center to open it.

