

**中国联合通信有限公司**  
**CDMA 1X数字蜂窝移动通信网**  
**移动台规范**  
(ver2.1 修订)

支持BREW应用的移动台的要求

中国联合通信有限公司  
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附件 3：支持 BREW 应用的移动台的要求

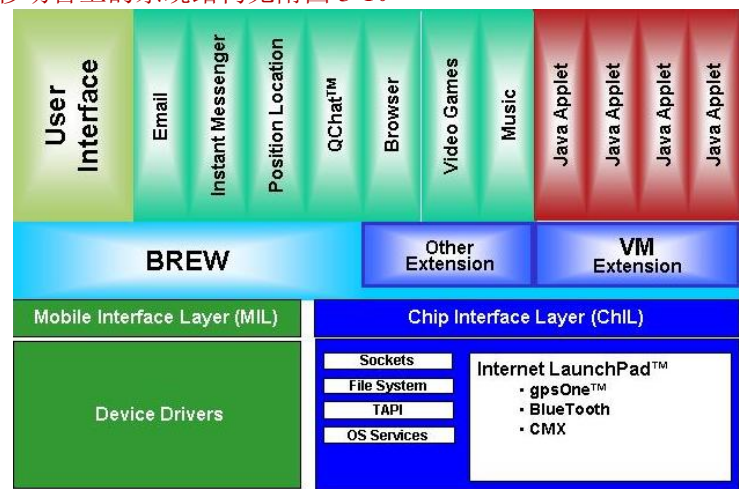
参考文献

支持 BREW 应用的移动台应符合下面几个文件的要求：

- 【1】 BREW Device Components Supports Checklist for Unicom
- 【2】 BREW 2.0 OEM Porting Guide for MSM Platforms
- 【3】 BREW 2.0 Core Carrier Application Guide
- 【4】 BREW 2.0 OEM API Reference for the MSM platform
- 【5】 BREW TM Porting Evaluation Kit User’s Guide
- 【6】 BREWStone 2.0 User’s Guide
- 【7】 BREW2.0 OEM Acceptance Test Guide
- 【8】 BREW PEK2.0 DMI Test User’s Guide
- 【9】 BREW Porting Verification for Unicom

1. BREW 系统结构

BREW 在移动台上的系统结构见附图 3-1。



附图 3-1 移动台 BREW 系统结构

2. 数据承载要求

移动台在下载或在线使用 BREW 应用时，使用分组数据作为承载。  
传输协议应支持 TCP/IP 协议，要求详见 3GPP2 P.S0001-A ver3.0.0 Wireless IP Network Standard。

3. 终端预置参数要求

BREW URL	具体值见参考文献【1】“BREW Provisioning”。
初始 DNS IP	32 bit，具体值见参考文献【1】，运营商可通过 PST 修改。
第二 DNS IP	32 bit，具体值见参考文献【1】，运营商可通过 PST 修改。
BREW 运营商 ID	32 bit，具体值见参考文献【1】，运营商可通过 PST 修改。
BKEY	16 byte，具体值见参考文献【1】，运营商可通过 PST 修改。
使用 Akey 或 Bkey	1 bit，具体值见参考文献【1】，运营商可通过 PST 修改。
用户鉴权标志	1 byte，具体值见参考文献【1】，运营商可通过 PST 修改。
BREW 测试使能	1 bit，具体值见参考文献【1】，运营商可通过 PST 修改。
Min for Sid	1 bit，具体值见参考文献【1】，运营商可通过 PST 修改。
Platform Id	该 ID 号由 Qualcomm 提供。
Keypress sequence to start the "credit back" user interface	12345678

Airtime warning	(1) Browse catalog airtime warning: off
	(2) Search catalog airtime warning: off
	(3) Download app airtime warning: off
	(4) Restore app airtime warning: off
	(5) Upgrade app airtime warning: off
	(6) Creditback airtime warning: off
Sound configuration tool and Image configuration:	off
用户名:	BREW
密码:	BREW

## 4. 用户接口 (UI)

### 4.1 显示

显示区域应至少支持 128×120 像素 (pixel)。

在 BREW 运行中，移动台信号栏显示要求见终端规范正文“4.1.1”，图标显示要求见终端规范附件一“2.5”。

对于参考文献【1】“Interrupting BREW”中要求“Suspend”的中断事件，移动台应弹出对话框，使用户可以选择是否暂停当前 BREW 应用，对于中断事件移动台可给用户提示声音提示（铃声或震动）。

“软件超市”（MOBILE SHOP）的图标应始终锁定在应用管理器（Application Manager）主菜单的首位，图标位置不能被移动。

移动台上预置的 BREW 菜单和内容应统一按照用户选择的语言进行显示，避免出现几种语言混合。

BREW 系统参数设置的菜单应对用户不可见。

### 4.2 语言

应支持 GB13000 编码的简体中文和英文，并应支持中文输入方法。

### 4.3 键盘要求

移动台应支持下列按键要求：

(1) 移动台应支持通过选择菜单或图标方式激活 BREW 应用管理器。  
 (2) 移动台应提供上、下、左、右导航键、选择键、end 键、send 键、clear 键以完成 BREW 应用的操作。

(3) 对于支持高级游戏及娱乐应用的移动台应支持至少两个按键同时操作。比如一个游戏程序用键“3”或者导航键把一个对象移到右边，如果用户按下另一个键去开火射击，两个动作都可被识别，而且可同时发生。

(4) 在 BREW 应用启动后，如用户选择<END>键，对于已启动的应用包括暂时挂起的应用（suspended apps），退出后应返回到应用管理器主菜单界面。

在应用管理器的子目录中，如用户选择<END>键，应返回到应用管理器主菜单界面。

在应用管理器主菜单界面中，如用户选择<END>键，应退出应用管理器，返回到待机画面。

在应用程序下载的过程中，用户可通过按<END>键随时中断下载过程，应返回到应用管理器主菜单界面。

在 BREW 的 ADS 目录浏览过程中，如用户选择<END>键，应返回到应用管理器主菜单界面。

在 BREW 应用管理器中(非输入状态下)，用户选择<CLR>键应“后退”或者“返回”到上一屏幕。

#### 4.4 UIM 卡和 BREW 的关系：

(1) 任何 UIM 卡插入 BREW 手机，对手机中已下载的 BREW 应用程序不自动产生任何操作，当换回原用于下载的 UIM 卡后，原下载的应用程序可以恢复使用

(2) BREW 手机中已下载的 BREW 应用程序，任何 UIM 卡都可对其进行选择性删除

(3) 只有下载 BREW 应用程序时用的 UIM 卡，有对下载应用程序的 launch/update/restore/续买 等操作权限

#### 4.5 移动台 ESN 的要求：

对每部移动台应分配唯一的 ESN。

用户能从移动台中获取 ESN，移动台可采用不同的方式提供，建议以标签方式（在移动台设备内侧）。

### 5 核心 BREW 应用

支持 BREW 的移动台必须支持应用管理器（Application Manager）和软件超市（MobileShop）。

#### 5.1 应用管理器要求

移动台应支持列表方式（list）显示和浏览下载服务器上的 BREW 应用程序，并支持用户鉴权。

移动台应可支持三种显示方式（大图标、小图标、列表）显示 BREW 应用管理器的菜单和应用程序，方便用户查找。

应支持对应用程序的删除、升级、续买、暂停使用（disable）、恢复使用（restore）功能。

#### 5.2 操作要求

移动台应支持返回、退出、清除等方便用户使用的功能。

#### 5.3 共享目录

移动台应对 BREW 共享目录提供支持，一些由多个应用程序共享的数据可以存储在共享目录提供的共享内存中。

### 6 应用程序下载

在应用程序下载之前，移动台应可以检测剩余存储容量。如果存储容量不足，移动台应提示用户是否暂停使用（disable）部分已下载的应用程序或不进行下载。

在应用程序下载的时候应向用户显示下载的进度。

移动台设备应可以比较并判断下载应用程序的版本新旧，实现应用程序的版本升级。

## 7 安全性要求

BREW 应用程序下载过程的异常和正常中断都不应当导致移动台出现任何故障。异常中断是指：网络链路的中断、手机断电、自动关机等非人为控制因素。正常中断是指：用户自主中断下载、关机等。

BREW 应用程序的安装、运行和删除不应当损坏移动台的任何其它功能。

## 8 BREW 移植测试

移动台应当通过 PEK2.0 即 BREWStone, BREW OEM Acceptance Tool 和 DMI Test 来测试一个设备是否符合 BREW 2.0 标准，详见参考资料【6】、【7】和【8】。

### 8.1 BREWStone

可通过 BREWStone 测试设备的多个组成部件, 包括显示, 文件系统, 堆栈管理等性能。

应在被检设备上运行 BREWStone 10 次, 并提供每一部件测试结果的平均值。

设备的性能要求详见参考资料【9】。

### 8.2 BREW OEM Acceptance Test 工具

可通过 BREW OEM Acceptance Test (OAT) 测试 ChIL 和 MIL 移植层的许多方面, 报告出所有不符合标准的方面。

为了支持 OAT, 厂家 必须把 AEEOEMBRIDGE 类与设备的软件系统静态连接起来。

应当在被测设备上运行 OAT 测试包, 并出示所有方面都显示“通过(PASS)”的报告。

### 8.3 DMI Test

通过 DMI Test 工具来确认被测设备支持 BREW Tools Suite 2.0 中的开发工具。

BREW Device Components Support Checklist						
BREW 2.0						
Product Specifications M = Mandatory, R = Recommended, O = Optional/Suggested, S= OEM Supported, U= OEM Unsupported		Minimum BREW Config.	Recommended BREW Config.	Unicom Comments	OEM Response	OEM Comments
Device Hardware Specification						
Memory						
Application Space (Embedded File System)		1Mbytes	2 Mbytes			
RAM		300Kbytes	500 Kbytes			
Stack		4KBytes	4KBytes			
Display						
Size		128x120pixels	128x160 pixels			
Type		Monochrome Bitmapped	16 bit color, Bitmapped			
Keypad						
Number Keys (0-9, *, #)		M	M			
Navigational Keys (up, down, left, right, select)		M	M			
Clear (or Back), Start, and End Key		M	M			
Key for Push To Talk		O	O			
Key for Launching Application Manager		O	R			
Audio						
Ringer Only Speaker		Ringer playback is required through any one of the three types of speakers				
Mono Speaker						
Stereo Speaker						
Vibrator			M	M		
Camera		O	O			
Position Determination						
GPS One		O	R			
Vector One		O	O			
Bluetooth		O	O			
Media Formats						
Image						
GIF		R	R			
JPEG		M	M			
BCI		M	M			
others		Reference Unicom handset spec section 8.7.4				
Audio						
Tones		M	M			
13K QCELP		M	M	see IMediaQCP- AEEMM.lib		
others		Reference Unicom handset spec section 8.7.4		MPEG4 not supported in BREW 2.0		
MUTIMEDIA						
CMX (PMD,QCELP,MIDI,MP3)		Reference Unicom handset spec section 8.7.4				
Yamaha (Phrase,SMAF,MIDI)						
BREW Application Support						
BREW Core Carrier Applications (CCA) - AppManager/Mobile Shop		M	M			
Interrupting BREW		M	M			
Incoming voice call (Suspend/Stop/Ignore)		Suspend	Suspend			
Incoming SMS (Suspend/Stop/Ignore)		Suspend	Suspend			
Incoming_email (Suspend/Stop/Ignore)		Suspend	Suspend			

Product Specifications M = Mandatory, R = Recommended, O = Optional/Suggested, S= OEM Supported, U= OEM Unsupported	Minimum BREW Config.	Recommended BREW Config.	Unicom Comments	OEM Response	OEM Comments
Reminder from OEM Resident Application (Suspend/Stop/Ignore)	Suspend	Suspend			
Device Status alert (Suspend/Stop/Ignore)	Suspend	Suspend			
Clam shell close (Suspend/Stop/Ignore)	send the "clam shell close" event to application	send the "clam shell close" event to application			
Application execution during a voice call	O	R			
Shared Directory Support	M	M			
Ringer directory shared by native ringer manager and BREW	M	M			
Addressbook Directory	M	M			
Events generated during a key press					
EVT_KEY_PRESS event	M	M			
EVT_KEY_RELEASE event	M	M			
EVT_KEY event	M	M			
EVT_KEY_HELD event	M	M			
Simultaneous Keypress detection	at least 2	at least 2			
Display Management					
Annunciators (Displayed while in BREW on main display)	Reference Unicom handset spec section 4.1.1				
Annunciators Controlled through BREW application	not allowed	not allowed			
Backlight controlled through BREW application	O	R			
Brew Device Datasheet and Skin	M	M			
Addressbook/Ringer Categories	O	O			
Friends					
Family					
Business					
Other					
Addressbook Record Fields on handset (not RUIM)	Reference Unicom handset spec section 4.1.4				
Integration of BREW addr book and native addr book	M	M			
Association of Addressbook and Ringer	O	R			
Association of Addressbook and Picture	O	R			
File System					
Maximum number of characters in filename	128	128			
Maximum size of file in /brew dir	maximum available in EFS	maximum available in EFS			
Maximum number of files in /brew dir	maximum available in EFS	maximum available in EFS			
<b>Data Calls, Voice Calls, SMS</b>					
Support for dormancy event notification	R	R			
Privacy Check					
Privacy check before making voice call	O	Recommend at least the first time the app makes a voice call			
Privacy check before getting GPS Fix	O	Recommend at least the first time the app makes a GPS request			
Linger Time (default 30 sec)	suggest 180 sec	suggest 180 sec			
Support for SMS					
BREW directed SMS with //BREW prefix	M	M			
BREW directed SMS with custom prefix	O	R			
Registering for SMS of Certain Teleservice ID	O	R			
Mobile Originated SMS	O	R			
<b>Language Support</b>					
English	M	M			
Spanish	O	O			
Portuguese	O	O			
Chinese	M	M			
Korean	O	O			
Japanese	O	O			

Product Specifications M = Mandatory, R = Recommended, O = Optional/Suggested, S= OEM Supported, U= OEM Unsupported		Minimum BREW Config.	Recommended BREW Config.	Unicom Comments	OEM Response	OEM Comments
Hindi		O	O			
French		O	O			
Other						
Text Entry						
Numbers		0-9	0-9			
Symbols		- . & ' ( ) _ ! ? { } [ ] ^ ; > < / \ @ ~ * # % " ' : + =	- . & ' ( ) _ ! ? { } [ ] ^ ; > < / \ @ ~ * # % " ' : + =			
Character Set		GB2312 (simplified Chinese)	GB2312 (simplified Chinese)			
Character Encoding						
Unicode						
ISOLATIN1						
KSC5601						
GB2312						
S-JIS						
GB13000		M	M			
Predictive Text Entry		M	M			
Font						
Size				CU will not specify the exact size of font		
BREW Font (Normal)		M	M	If memory is a concern, Bold and Large font can have the same effect as Normal font.		
BREW Font (Bold)		M	M			
BREW Font (Large)		M	M			
Chinese Font		Song	Song			
BREW Provisioning						
BREW ADS URL		brew.uni-info.com.cn, brew2.uni-info.com.cn		Please use the values for production (values in test environment may be different)		
Primary DNS IP		IPCP protocol	IPCP protocol			
Secondary DNS IP		IPCP protocol	IPCP protocol			
Carrier ID		53		Please use the values for production (values in test environment may be different)		
Bkey		0				
Akey/Bkey specifier		Bkey				
User Authorization Flag (AEEAuthPolicy)		APOLICY_SID				
Application Execution Policy		TrueBREW or Carrier				
BREW Test Enable		no				
Subscriber Id (SID)						
Use Min for SID		use IMSI				
BREW Porting Verification						
BREWStone (OEM Benchmarking Tool)		M	M			
DMI Test (Diagnostic Monitor Interface)		M	M			
OAT (OEM Acceptance Test Tool)		M	M			
BREW Interfaces						
IAddrBook - AEEAddrBk.lib - OEMAddr		M	M			
IAddrRec - AEEAddrBk.lib - OEMAddr		M	M			
IApplet- AEE.lib		M	M			
IStream - AEEUnzip.lib - z.lib		M	M			
IBase- AEE.lib		M	M			
Ibitmap - AEE.lib - OEMBitmap		M	M			



Product Specifications M = Mandatory, R = Recommended, O = Optional/Suggested, S= OEM Supported, U= OEM Unsupported	Minimum BREW Config.	Recommended BREW Config.	Unicom Comments	OEM Response	OEM Comments
IBTAG - AEEBT.lib	O	O			
IBTDSDP - AEEBT.lib	O	O			
IBTSIOPORT - AEEBT.lib	O	O			
IClipboard - AEE.lib	M	M			
ICipher - AEESecurity.lib - OEMMD5	M	M			
IControl- AEE.lib	M	M			
IDatabase - AEEDB.lib - OEMDB	M	M			
IDateCtl - AEEControls.lib	M	M			
IDBMgr - AEEDB.lib - OEMDB	M	M			
IDBRecord - AEEDB.lib - OEMDB	M	M			
IDialog - AEEDialog.lib	M	M			
IDIB - AEE.lib	M	M			
IDisplay - AEE.lib - IOEMDisp - OEMFont - OEMBitmap	M	M			
IDNS - AEE.lib	M	M			
IFile - AEE.lib - OEMFS	M	M			
IFileMgr - AEE.lib - OEMFS	M	M			
IFont - AEEFont.lib Ifont	M	M			
IGetLine - AEEWEB.lib	O	R			
IGraphics - AEEMM.lib - OEMBitmap - IOEMDisp - OEMFont	O	R			
IHash - AEESecurity.lib - OEMMD5	M	M			
IHeap - AEE.lib	M	M			
IHtmlViewer- AEE.lib	O	R			
Image - AEE.lib - OEMBitmap - IOEMDisp	M	M			
ImageCtl -	M	M			
ILicense - BREW.lib	M	M			
IMedia - AEEMM.lib	M	M	required for media playback (CMX, Yamaha)		
<del>IMediaMidi - AEEMM.lib</del>	<del>R</del>	<del>R</del>	see in "BREW2.0 OEM Interfaces"		
<del>IMediaMidiOutMsg - AEEMM.lib</del>	<del>R</del>	<del>R</del>			
<del>IMediaMidiOutQCP - AEEMM.lib</del>	<del>R</del>	<del>R</del>			
<del>IMediaMP3 - AEEMM.lib</del>	<del>O</del>	<del>R</del>			
<del>IMediaQCP - AEEMM.lib</del>	<del>M</del>	<del>M</del>			
<del>IMediaPMD - AEEMM.lib</del>	<del>R</del>	<del>R</del>			
IMemAStream - AEE.lib - AEEUnzip.lib - z.lib	M	M			
IMenuCtl - AEEMenu.lib - IOEMDisp - OEMBitmap - OEMFont	M	M			
IModule- AEE.lib	M	M			
INetMgr - AEE.lib - OEMSock - OEMNet	M	M			
INotifier - AEE.lib	M	M			
IPeek - AEEWEB.lib	O	R			
IPosDet - OEMPosDet	O	R			
IQuery- AEE.lib	M	M			
IRingerMgr - OEMRinger	M	M			
IRSA - AEESecurity.lib	M	M			
IShell - AEE.lib - OEMOS	M	M			
ISocket - AEENet.lib - OEMSock	M	M			
ISound - AEE.lib - OEMSound	M	M			
ISoundPlayer - OEMSoundPlayer.lib - OEMSoundPlayer	O	R			
ISource - AEEWEB.lib	O	R			
ISourceUtil - AEEWEB.lib	O	R			
ISprite - AEE.lib	M	M			
ISSL - AEESecurity.lib	O	R			
IStatic - AEEDialog.lib - OEMFont - IOEMDisp - OEMBitmap	M	M			
ITAPI - OEMTapi	M	M			
ITextCtl - OEMText	M	M			
ITimeCtl - AEEControls.lib	M	M			
ITransform - AEE.lib	M	M			
IUnzipAStream - AEEUnzip	O	R			
IViewer- AEE.lib	M	M			
IVocoder - AEE.lib	M	M	Required for EVRC and Voice Over IP apps such as Qchat.		
IWeb - AEEWEB.lib - AEENet.lib - AEEEncoding.lib	M	M			
IWebOpts - AEEWEB.lib	M	M			

Product Specifications M = Mandatory, R = Recommended, O = Optional/Suggested, S= OEM Supported, U= OEM Unsupported	Minimum BREW Config.	Recommended BREW Config.	Unicom Comments	OEM Response	OEM Comments
IWebResp - AEEWEB.lib	M	M			
IWebUtil - AEEWEB.lib - AEEEncoding.lib	M	M			
IX509Chain - AEESecurity.lib	O	R			

## BREW Handset Options Checklist

### BREW 2.0

Product Specifications Key: M = Mandatory, N=Not Allowed ,S= OEM Supported, U= OEM Unsupported	Minimum BREW Config.	Recommended BREW Config.	Unicom Comments	OEM Response	OEM Comments
<b>Phone Specifications - OEM Libraries</b>					
OEM Address Book Interface					
OEMAddrBook_Exit()	M	M			
OEMAddrBook_GetCatCount()	M	M			
OEMAddrBook_Init()	M	M			
OEM Address Interface	M	M			
OEMAddr_EnumNextRec()	M	M			
OEMAddr_EnumReclnit()	M	M			
OEMAddr_GetCatList()	M	M			
OEMAddr_GetFieldInfo()	M	M			
OEMAddr_GetFieldInfoCount()	M	M			
OEMAddr_GetNumRecs()	M	M			
OEMAddr_RecordAdd()	M	M			
OEMAddr_RecordDelete()	M	M			
OEMAddr_RecordGetByID()	M	M			
OEMAddr_RecordUpdate()	M	M			
OEMAddr_RemoveAllRecs()	N	N	Unicom prohibit		
AEEBitFont Interface					
AEEBitFont_NewFromBBF()	M	M			
OEM AEE Interface					
AEE_Active()	M	M			
AEE_AutoInstall()	M	M			
AEE_BuildPath()	M	M			
AEE_CheckPtr()	M	M			
AEE_CheckStack()	M	M			
AEE_CreateControl()	M	M			
AEE_Dispatch()	M	M			
AEE_EnumRegHandlers()	M	M			
AEE_EnumRegHandlers()	M	M			
AEE_Exception()	M	M			
AEE_Event()	M	M			
AEE_Exit()	M	M			
AEE_FreeMemory()	M	M			
AEE_GetAppContext()	M	M			
AEE_GetClassInfo()	M	M			
AEE_GetShell()	M	M			
AEE_Init()	M	M			
AEE_IsInitialized()	M	M			
AEE_IsTestDevice()	M	M			
AEE_Key()	M	M			
AEE_KeyHeld()	M	M			
AEE_KeyPress()	M	M			
AEE_KeyRelease()	M	M			
AEE_NetEventOccurred()	M	M			
AEE_RegisterForDataService()	M	M			
AEE_RegisterForValidTime()	M	M			
AEE_Resume()	M	M			
AEE_ResumeEx()	M	M			
AEE_SetAppContext()	M	M			
AEE_SetEventHandler()	M	M			
AEE_SetSysTimer()	M	M			
AEE_SocketEventOccurred()	M	M			
AEE_StartDeferredApplet()	M	M			
AEE_Suspend()	M	M			
AEE_TimerExpired()	M	M			
OEM Application Interface					
OEM_AppClose()	M	M			
OEM_AuthorizeDownload()	M	M			
OEM_CheckPrivacy()	M	M			
OEM_ForceExit()	M	M			
OEM_GetItemStyle()	M	M			
OEM_GetMIFPath()	M	M			
OEM_IsNativeImage()	M	M			
OEM_IsValidPtr()	M	M			
OEM_LockMem()	M	M			
OEM_Notify()	M	M			
OEM_SimpleBeep()	M	M			
OEM_SetupNativeImage()	M	M			
OEM_UnlockMem()	M	M			

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OEM BT SDP Interface					
OEMBTSDP_CancelDiscovery()	O	O			
OEMBTSDP_CloseLib()	O	O			
OEMBTSDP_DiscoverDevices()	O	O			
OEMBTSDP_GetDeviceName()	O	O			
OEMBTSDP_GetServerChannel()	O	O			
OEMBTSDP_Init()	O	O			
OEMBTSDP_OpenLib()	O	O			
OEMBTSDP_Shutdown()	O	O			
OEM BT SIO Interface					
OEMBTSIO_Close()	O	O			
OEMBTSIO_DataAvailable()	O	O			
OEMBTSIO_Init()	O	O			
OEMBTSIO_Open()	O	O			
OEMBTSIO_ProcessEvents()	O	O			
OEMBTSIO_Read()	O	O			
OEMBTSIO_Write()	O	O			
OEMDatabase Interface					
OEM_DBClose()	M	M			
OEM_DBCreate()	M	M			
OEM_DBDelete()	M	M			
OEM_DBFree()	M	M			
OEM_DBInit()	M	M			
OEM_DBMakeReadOnly()	M	M			
OEM_DBOpen()	M	M			
OEM_DBRecordAdd()	M	M			
OEM_DBRecordCount()	M	M			
OEM_DBRecordDelete()	M	M			
OEM_DBRecordGet()	M	M			
OEM_DBRecordNext()	M	M			
OEM_DBRecordUpdate()	M	M			
OEM Display Interface					
IOEMDISP_Backlight()	M	M			
IOEMDISP_GetDefaultColor()	M	M			
IOEMDISP_GetDeviceBitmap()	M	M			
IOEMDISP_GetPaletteEntry()	M	M			
IOEMDISP_GetSymbol()	M	M			
IOEMDISP_GetSystemFont()	M	M			
IOEMDISP_MapPalette()	M	M			
OEMLDisp_New()	M	M			
IOEMDISP_SetAnnunciators()	N	N	should consistent with "Annunciators Controlled through BREW application"		
IOEMDISP_SetPaletteEntry()	M	M			
IOEMDISP_Update()	M	M			
OEM File System Interface					
OEMFS_Close()	M	M			
OEMFS_EnumNext()	M	M			
OEMFS_EnumStart()	M	M			
OEMFS_EnumStop()	M	M			
OEMFS_GetDirInfo()	M	M			
OEMFS_GetFileAttributes()	M	M			
OEMFS_GetLastError()	M	M			
OEMFS_GetOpenFileAttributes()	M	M			
OEMFS_Mkdir()	M	M			
OEMFS_Open()	M	M			
OEMFS_Read()	M	M			
OEMFS_Remove()	M	M			
OEMFS_Rename()	M	M			
OEMFS_Rmdir()	M	M			
OEMFS_Seek()	M	M			
OEMFS_SpaceAvail()	M	M			
OEMFS_SpaceUsed()	M	M			
OEMFS_Tell()	M	M			
OEMFS_Test()	M	M			
OEMFS_Truncate()	M	M			
OEMFS_Write()	M	M			
OEM SMS Interface					
OEM_extract_SMS_text()	M	M			
OEM_format_SMS_msg()	M	M			
OEM_format_SMS_txt()	M	M			

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OEM_uasms_config_listeners()	M	M			
OEM Socket Interface					
OEMNet_CloseNetlib()	M	M			
OEMNet_MyIPAddr()	M	M			
OEMNet_NameServers()	M	M			
OEMNet_OpenNetlib()	M	M			
OEMNet_PPPOpen()	M	M			
OEMNet_PPPOpen()	M	M			
OEMNet_PPPState()	M	M			
OEMSocket_AsyncSelect()	M	M			
OEMSocket_Bind()	M	M			
OEMSocket_Close()	M	M			
OEMSocket_Connect()	M	M			
OEMSocket_GetNextEvent()	M	M			
OEMSocket_GetPeerName()	M	M			
OEMSocket_Open()	M	M			
OEMSocket_Read()	M	M			
OEMSocket_Readv()	M	M			
OEMSocket_RecvFrom()	M	M			
OEMSocket_SendTo()	M	M			
OEMSocket_Write()	M	M			
OEMSocket_Writev()	M	M			
OEM Sound Interface					
OEMSound_GetLevels()	M	M			
OEMSound_GetVolume()	M	M			
OEMSound_Init()	M	M			
OEMSound_PlayFreqTone()	M	M			
OEMSound_PlayTone()	M	M			
OEMSound_PlayToneList()	M	M			
OEMSound_SetDevice()	M	M			
OEMSound_SetVolume()	M	M			
OEMSound_StopTone()	M	M			
OEMSound_StopVibrate()	O	R			
OEMSound_Vibrate()	O	R			
OEM SoundPlayer Interface					
OEMSoundPlayer_FastForward()	O	R			
OEMSoundPlayer_GetTotalTime()	O	R			
OEMSoundPlayer_Initialize()	O	R			
OEMSoundPlayer_Pause()	O	R			
OEMSoundPlayer_Play()	O	R			
OEMSoundPlayer_PlayRinger()	O	R			
OEMSoundPlayer_Resume()	O	R			
OEMSoundPlayer_Rewind()	O	R			
OEMSoundPlayer_Stop()	O	R			
OEMSoundPlayer_Tempo()	O	R			
OEMSoundPlayer_Tune()	O	R			
OEM String Interface					
OEM_FloatToWStr()	M	M			
OEM_GetCHType()	M	M			
OEM_vxsprintf()	M	M			
OEM_UTF8ToWStr()	M	M			
OEM_WStrLower()	M	M			
OEM_WStrToFloat()	M	M			
OEM_WStrToUTF8()	M	M			
OEM_WStrUpper()	M	M			
OEM Text Interface					
OEM_TextAddChar()	M	M			
OEM_TextCreate()	M	M			
OEM_TextDelete()	M	M			
OEM_TextDraw()	M	M			
OEM_TextEnumMode()	M	M			
OEM_TextEnumModesInit()	M	M			
OEM_TextGet()	M	M			
OEM_TextGetCurrentMode()	M	M			
OEM_TextGetMaxChars()	M	M			
OEM_TextGetModeString()	M	M			
OEM_TextGetProperties()	M	M			
OEM_TextGetRect()	M	M			
OEM_TextGetSel()	M	M			
OEM_TextKeyPress()	M	M			
OEM_TextQueryModes()	M	M			

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OEM_TextQuerySymbols()	M	M			
OEM_TextSet()	M	M			
OEM_TextSetEdit()	M	M			
OEM_TextSetMaxChars()	M	M			
OEM_TextSetProperties()	M	M			
OEM_TextSetRect()	M	M			
OEM_TextSetSel()	M	M			
OEM_TextUpdate()	M	M			
OEM Configuration Interface					
OEM_GetAddrBookPath()	M	M			
OEM_GetAppPath()	M	M			
OEM_GetConfig()	M	M			
OEM_GetDeviceInfo()	M	M			
OEM_GetDeviceInfoEx()	M	M			
OEM_GetLogoPath()	M	M			
OEM_GetMIFPath()	M	M			
OEM_GetPath()	M	M			
OEM_GetRingerPath()	M	M			
OEM_GetSharedPath()	M	M			
OEM_SetConfig()	M	M			
OEM Cyclic Redundancy Check					
OEMCRC_16_step()	M	M			
OEM Debug Interface					
OEMDebug_Printf()	M	M			
OEMDebug_VPrintf()	M	M			
OEM MD5 Interface					
OEMMD5_Final()	M	M			
OEMMD5_Update()	M	M			
OEMMD5_Init()	M	M			
OEM Operating System Interface					
OEMOS_ActiveTaskID()	M	M			
OEMOS_BrewHighPriority()	M	M			
OEMOS_BrewNormalPriority()	M	M			
OEMOS_BrewTaskStack()	M	M			
OEMOS_CancelDispatch()	M	M			
OEMOS_GetLocalTime()	M	M			
OEMOS_GetTimeMS()	M	M			
OEMOS_GetUptime()	M	M			
OEMOS_LocalTimeOffset()	M	M			
OEMOS_SetTimer()	M	M			
OEMOS_SignalDispatch()	M	M			
OEMOS_Sleep()	M	M			
OEM Random Number Generator Interface					
OEMRan_Next()	M	M			
OEMRan_Seed()	M	M			
OEM Heap Interface					
OEM_CheckMemAvail()	M	M			
OEM_Free()	M	M			
OEM_GetMemStats()	M	M			
OEM_GetRAMFree()	M	M			
OEM_InitHeap()	M	M			
OEM_Malloc()	M	M			
OEM_Realloc()	M	M			
OEM Registry					
OEMRegistry_DetectType()	M	M			
IBITMAP					
IBITMAP_AddRef()	M	M			
IBITMAP_BltIn()	M	M			
IBITMAP_BltOut()	M	M			
IBITMAP_CreateCompatibleBitmap()	M	M			
IBITMAP_DrawHScanline()	M	M			
IBITMAP_DrawPixel()	M	M			
IBITMAP_FillRect()	M	M			
IBITMAP_GetInfo()	M	M			
IBITMAP_GetPixel()	M	M			
IBITMAP_GetTransparencyColor()	M	M			
IBITMAP_NativeToRGB()	M	M			
IBITMAP_QueryInterface()	M	M			
IBITMAP_Release()	M	M			
IBITMAP_RGBToNative()	M	M			
IBITMAP_SetPixels()	M	M			

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IBITMAP_SetTransparencyColor()	M	M			
IFONT					
IFONT_AddRef()	M	M			
IFONT_DrawText()	M	M			
IFONT_GetFontInfo()	M	M			
IFONT_MeasureText()	M	M			
IFONT_QueryInterface()	M	M			
IFONT_Release()	M	M			
IRINGER					
IRINGERMGR_AddRef()	M	M			
IRINGERMGR_Create()	M	M			
IRINGERMGR_EnumCategoryInit()	M	M			
IRINGERMGR_EnumNextCategory()	M	M			
IRINGERMGR_EnumNextRinger()	M	M			
IRINGERMGR_EnumRingerInit()	M	M			
IRINGERMGR_GetFormats()	M	M			
IRINGERMGR_GetNumberFormats()	M	M			
IRINGERMGR_GetRingerID()	M	M			
IRINGERMGR_GetRingerInfo()	M	M			
IRINGERMGR_RegisterNotify()	M	M			
IRINGERMGR_Remove()	M	M			
IRINGERMGR_SetRinger()	M	M			
IRINGERMGR_Stop()	M	M			
IRINGERMGR_Play()	M	M			
IRINGERMGR_PlayEx()	M	M			
IRINGERMGR_PlayFile()	M	M			
IRINGERMGR_PlayStream()	M	M			
IRINGERMGR_Release()	M	M			
OEM_GetActiveRinger()	M	M			
OEM_SetActiveRinger()	M	M			
IPOSEDET					
IPOSEDET_AddRef()	O	R			
IPOSEDET_GetGPSCConfig()	O	R			
IPOSEDET_GetGPSInfo()	O	R			
IPOSEDET_GetSectorInfo()	O	R			
IPOSEDET_QueryInterface()	O	R			
IPOSEDET_Release()	O	R			
IPOSEDET_SetGPSCConfig()	O	R			
ITAPI					
ITAPI_AddRef()	M	M			
ITAPI_ExtractSMSText()	M	M			
ITAPI_GetCallerID()	M	M			
ITAPI_GetStatus()	M	M			
ITAPI_IsDataSupported()	M	M			
ITAPI_IsVoiceCall()	M	M			
ITAPI_MakeVoiceCall()	M	M			
ITAPI_OnCallStatus()	M	M			
ITAPI_OnCallEnd()	M	M			
ITAPI_Release()	M	M			
ITAPI_SendSMS()	M	M			
ITEXTCTL					
ITEXTCTL_AddRef()	M	M			
ITEXTCTL_EnableCommand()	M	M			
ITEXTCTL_EnumModelInit()	M	M			
ITEXTCTL_EnumNextMode()	M	M			
ITEXTCTL_GetCursorPos()	M	M			
ITEXTCTL_GetInputMode()	M	M			
ITEXTCTL_GetProperties()	M	M			
ITEXTCTL_GetRect()	M	M			
ITEXTCTL_GetText()	M	M			
ITEXTCTL_GetTextPtr()	M	M			
ITEXTCTL_HandleEvent()	M	M			
ITEXTCTL_IsActive()	M	M			
ITEXTCTL_Redraw()	M	M			
ITEXTCTL_Release()	M	M			
ITEXTCTL_Reset()	M	M			
ITEXTCTL_SetActive()	M	M			
ITEXTCTL_SetCursorPos()	M	M			
ITEXTCTL_SetInputMode()	M	M			
ITEXTCTL_SetMaxSize()	M	M			
ITEXTCTL_SetProperties()	M	M			

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ITEXTCTL_SetRect()	M	M			
ITEXTCTL_SetSoftKeyMenu()	M	M			
ITEXTCTL_SetText()	M	M			
ITEXTCTL_SetTitle()	M	M			
IDIB					
IDIB_AddRef()	M	M			
IDIB_FlushPalette()	M	M			
IDIB_QueryInterface()	M	M			
IDIB_Release()	M	M			
IDIB_TO_IBITMAP()	M	M			
CMediaMMLayer Interface					
CMediaMMLayer_Delete()	M	M	If OEM supports CMX,these Iterfaces are mandatory .		
CMediaMMLayer_GetMediaParm()	M	M			
CMediaMMLayer_GetTotalTime()	M	M			
CMediaMMLayer_Init()	M	M			
CMediaMMLayer_MIDIOutMsg()	M	M			
CMediaMMLayer_MIDIOutQCPPause()	M	M			
CMediaMMLayer_MIDIOutQCPPlay()	M	M			
CMediaMMLayer_MIDIOutQCPResume()	M	M			
CMediaMMLayer_MIDIOutQCPSetPan()	M	M			
CMediaMMLayer_MIDIOutQCPSetVolume()	M	M			
CMediaMMLayer_New()	M	M			
CMediaMMLayer_Pause()	M	M			
CMediaMMLayer_Play()	M	M			
CMediaMMLayer_QCPRecord()	M	M			
CMediaMMLayer_Resume()	M	M			
CMediaMMLayer_Seek()	M	M			
CMediaMMLayer_SetDevice()	M	M			
CMediaMMLayer_SetMediaParm()	M	M			
CMediaMMLayer_SetMute()	M	M			
CMediaMMLayer_SetPan()	M	M			
CMediaMMLayer_SetPath()	M	M			
CMediaMMLayer_SetTempo()	M	M			
CMediaMMLayer_SetTune()	M	M			
CMediaMMLayer_SetVolume()	M	M			
CMediaMMLayer_SoundCB()	M	M			
CMediaMMLayer_Stop()	M	M			
CMediaFormatInterface					
IMediaMIDI_Init()	M	M	If OEM supports CMX,these Iterfaces are mandatory		
IMediaMIDI_New()	M	M			
IMediaMP3_Init()	M	M			
IMediaMP3_New()	M	M			
IMediaMIDIOutMsg_Init()	M	M			
IMediaMIDIOutMsg_New()	M	M			
IMediaMIDIOutQCP_Init()	M	M			
IMediaMIDIOutQCP_New()	M	M			
IMediaPMD_Init()	M	M			
IMediaPMD_New()	M	M			
IMediaQCP_Init()	M	M			
IMediaQCP_New()	M	M			
			If OEM suppots SMAF, contact Qualcomm for reference design		
Yamaha Support					
AEEMEDIA					
AEEMedia_AddRef()	M	M			
AEEMedia_CallbackNotify()	M	M			
AEEMedia_Delete()	M	M			
AEEMedia_GetMediaParm()	M	M			
AEEMedia_GetState()	M	M			
AEEMedia_GetTotalTime()	M	M			
AEEMedia_Init()	M	M			
AEEMedia_New()	M	M			
AEEMedia_Pause()	M	M			
AEEMedia_Play()	M	M			
AEEMedia_QueryInterface()	M	M			
AEEMedia_Record()	M	M			
AEEMedia_RegisterNotify()	M	M			
AEEMedia_Release()	M	M			
AEEMedia_Resume	M	M			
AEEMedia_Seek()	M	M			