



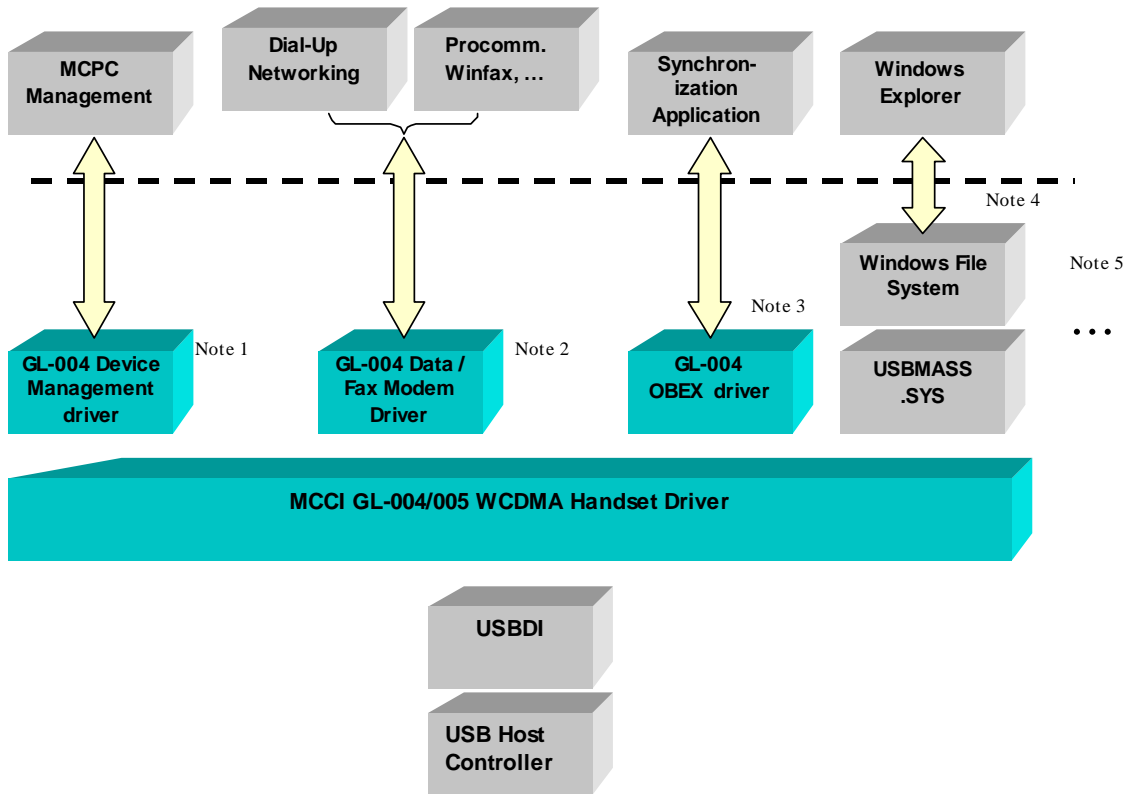
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PRODUCT INFORMATION:

MCCI® Drivers for MCPC-compatible WCDMA Handsets

An Integrated Solution for Wireless Communication

Based on MCCI's experience in developing USB technology for PCs, MCCI's MCPC GL-004/005 drivers provide compatibility and flexibility to the designer of USB-based WCDMA terminal equipment.



As shown in the block diagram, the MCCI driver set consists of a central driver, which provides device-level management services for the handset. In addition, the handset driver identifies the Terminal Adapters (TAs) and other functions present in the phone. The handset driver identifies the appropriate link and mode to be used based on the phone's USB descriptors. It also identifies non-MCPC functions, such as Mass Storage class, and arranges for the appropriate function drivers to be loaded by Windows. In the above example, the handset provides four functions, three of which are supported by MCCI drivers, and one by Microsoft-supplied drivers.

*The information in this document is subject to change without notice.
 Contact MCCI for current information.*

MCCI MCPC GL-004/005 USB Drivers

The Handset Driver is an advanced WDM bus driver, which performs two functions:

1. It identifies the individual functions available on the phone, and provides enumeration and multiplexing services for the individual function drivers. It simplifies installation on multiple Windows systems, by generating operating-system-specific device IDs..

MCCI further provides function drivers that support AT-command-based device management, data/fax modem emulation, OBEX synchronization, and special purpose diagnostic management.

Notes to block diagram:

1. The Device Management driver provides a separate API to the handset via a simulated serial port.
2. One copy of the data/fax driver is loaded for each Mobile Abstract Control logical terminal adapter that is to be used for data services. In addition to supporting high-speed data transfer via dial-up networking, MCCI's drivers support legacy switched-circuit data communication applications such as WinFax and Procomm Plus.
3. The OBEX driver provides a separate API to the synchronization interface of the handset. At the OEM's option, this interface may be accessed either as a simulated serial port or as a special OBEX device class.
4. In this example, the handset exports a USB Mass-Storage Class interface, for access to MP-3 files stored on the handset. The MCCI Handset Driver automatically arranges to load the Microsoft Mass Storage class driver on Windows ME, 2K and XP.
5. Additional standard USB class drivers (for example, HID, audio class, vendor-specific functions) will be handled automatically, by parsing the descriptors. Mobile Direct Line control devices will be correctly enumerated but must be handled via a separate driver (not included in the base kit).

Specifications:

Table 1. MCCI GL-004/005 WCDMA Handset Driver

<i>Operating systems</i>	Win98, 98SP1, 98SE, ME; Windows 2000, XP (remote wakeup only supported on ME, 2000 and XP)
<i>Installation</i>	Plug and Play (INF based)
<i>Device Classes Supported for enumeration</i>	CDC, MCPC GL-004/005, Audio, plus all single-interface classes
<i>API</i>	No specific API. Functionality can be tailored at runtime using SetupDI and the registry.
<i>Number of simultaneous cell phones supported</i>	Limited only by system resources.
<i>Device Requirements</i>	MCPC GL-004/005; Audio class; CDC 1.1; any Audio Class interfaces must be compatible with the limitations of the underlying operating system. Other single interface functions will also be enumerated correctly.
<i>Number of Data Class Interfaces Supported</i>	Up to 14 (due to limited number of endpoints in real USB silicon)
<i>Language support and localization</i>	Provided by customer
<i>Technical Documentation</i>	<ul style="list-style-type: none"> • Functional Specification, including descriptor requirements and INF-based options. • SetupDI interfacing document, for writing programs to manage the handset driver directly.

Table 2. MCCI Enhanced GL-004/005 WCDMA Data/Fax Port Drivers

<i>Operating systems</i>	Win98, 98SP1, 98SE, ME, Windows 2000, XP
<i>Installation</i>	Plug and Play (INF based) or optional installer
<i>Number of ports supported</i>	Up to 128 (limited by Windows)
<i>API</i>	<p>Standard UNIMODEM COM-port based interface. Windows 98 family includes support for most 16-bit Windows apps and real-mode DOS apps via a port-mapping VxD. (Timing differences may uncover bugs in the applications.)</p> <p>SET_LINK and ACTIVATE_MODE are handled automatically at OPEN/CLOSE time, in accordance with MCPC recommendations.</p>

MCCI MCPC GL-004/005 USB Drivers

<i>Device Requirements</i>	Mobile Abstract Control Model. Device must support AT commands over data class pipe, as well as supporting encapsulated commands. COMM class notifications must correctly indicate the associated DATA class interface.
<i>Language support and localization</i>	Provided by customer
<i>Technical Documentation</i>	<ul style="list-style-type: none"> • Functional Specification, including descriptor requirements and INF-based options.
<i>INF File Customization for AT Command Set</i>	Provided by customer. MCCI provides an INF file based on a standard modem model

Table 3. MCCI Enhanced GL-004/005 WCDMA Device Management and OBEX Port Drivers

<i>Operating systems</i>	Win98, 98SP1, 98SE, ME; Windows 2000, XP
<i>Installation</i>	Plug and Play (INF based), or optional MCCI installer
<i>Number of ports supported</i>	Up to 128 (limited by Windows)
<i>API</i>	Standard COMM port, including support for most 16-bit Windows apps and real-mode DOS apps via a port-mapping VxD. (Timing differences may uncover bugs in the applications.)
<i>Device Requirements</i>	Mobile Abstract Control Model. AT Command Device and OBEX devices must match MCPC recommendations.
<i>Language support and localization</i>	Provided by customer
<i>Technical Documentation</i>	<ul style="list-style-type: none"> • Functional Specification, including descriptor requirements and INF-based options.
<i>INF File Customization</i>	Normally not required

MCCI MCPC GL-004/005 USB Drivers

Table 4. MCCI InstallRight Plus Device Install/Uninstall Support

<i>Operating systems</i>	Win98, 98SP1, 98SE, ME, 2000, XP
<i>Installation</i>	Three modes: install before plug; plug before install; install while plug
<i>Uninstallation</i>	Via Add/Remove Programs, or an icon.
<i>Integration With Larger Installs</i>	InstallRight-Plus can be launched as a captive .exe by a larger application install/uninstall application
<i>Language support and localization</i>	Provided by OEM

Table 5. General Information

<i>Basic Delivery Format</i>	Binary plus INF files, as drivers in checked and free format; via download from MCCI's secure web site.
<i>Warranty</i>	90 days
<i>Source Licenses</i>	Available at extra fee.
<i>Pass-through rights</i>	Available at extra fee.
<i>Branding</i>	Drivers will bear MCCI's copyright, but will be rebranded using MCCI's standard rebranding technology for customer, for one device. Additional rebranding available at extra fee.
<i>End-user Documentation</i>	Customer's responsibility
<i>Support</i>	MCCI supports its direct customers via telephone and email. Resellers or manufacturers of products incorporating MCCI technology are responsible for supporting their own customers.

MCCI Products:

Drivers	MCCI USB Class Drivers for Windows and MacOS	UMTS, CDMA-One, CDMA-2000, GPRS, EDGE, and MCPC GL-004/005 or WMC WCDMA cell phones
		Ethernet devices
		Cable Modems
		Analog (POTS) modems and ISDN TAs
		Serial port Migration
		ADSL modems
		Device Firmware update
Firmware	MCCI USB DataPump® portable firmware environment	Silicon, operating system and CPU independent. Can be run in simulated environments on Windows
	MCCI USB DataPump Device Class modules	WMC and MCPC GL-004/005 cell phones
		Ethernet devices (CDC and Remote NDIS)
		Serial port migration
		Device Firmware Update
		HID class (keyboard/mouse)
Mass Storage class		
	MCCI TrueCard FTL	Patented NAND-flash file system
USB Development Tools	MCCI Catena® Firmware Development Platforms for Windows 2000/XP	Model 1610 – USB Device module. Optional OSE or Nucleus integration Model 1620 – USB On-The-Go module. Optional OSE or Nucleus integration
	MCCI Wombat™ ARM-based Firmware Development Platforms	Model 1510 – development platform including GDB, GCC, USS820 USB device, 100BT Ethernet, NAND flash

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All specifications and prices were correct as of the time of writing, but are subject to change without notice. Although every effort is taken to ensure accuracy, MCCI assumes no responsibility for any errors in this document.

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