Overview

Amphus VG230 firmware is available to support all the features of the VG230 single-chip PC platform including power management and PCMCIA 2.1 (JEIDA 4.1). Available options include a LIM 4.0 EMS driver. The field-proven VG230 BIOS contains standard and enhanced PC-XT functionality. The binary size is under 40KBytes.

OEMs are provided with a configuration utility which allows easy configuration of BIOS options. For OEMs with applications that require extensive BIOS modifications or rebuilding the BIOS for any reason, an optional BIOS Adaptation Kit is available including object code, build tools and selected source code. If modifications to the keyboard scanner routines are the only adaptation requirements, OEMs may contact Vadem for this optional service.

VG230 Firmware Map

Key Features

Standard, field-proven compatible XT BIOS functionality
- Full BIOS support for standard devices
- Power-On self test with automatic memory sizing
- Installation ROM scan for OEM installed options
- Floppy support

Advanced power management
- Microsoft® APM ver. 1.0 BIOS Support
- DOZE mode saves power while user is active
- SUSPEND mode saves power while user is inactive
- All devices can be power managed

PCMCIA 2.1 (JEIDA 4.1) support
- Socket Services ver. 2.1 BIOS level driver
- Card Services ver. 2.1 driver

Real-time clock support

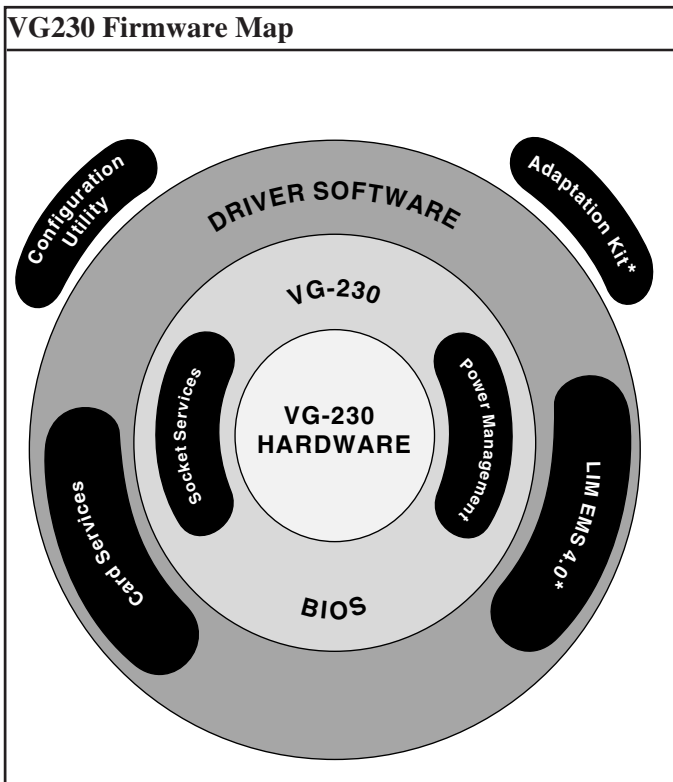BIOS configuration utility allows enabling/disabling of features
- Edit sign-on message, version no., ROM date
- Set initialization parameters
- 640 x 400 LCD controller mode
- Multi-density floppy option
- Advanced ROM support
- Other configurations

Optional BIOS Adaptation Kit allows further customization
- BIOS object code
- Build tools (e.g. EXE2ROM.COM)
- Selected source code (e.g. keyboard scanner, initialization)
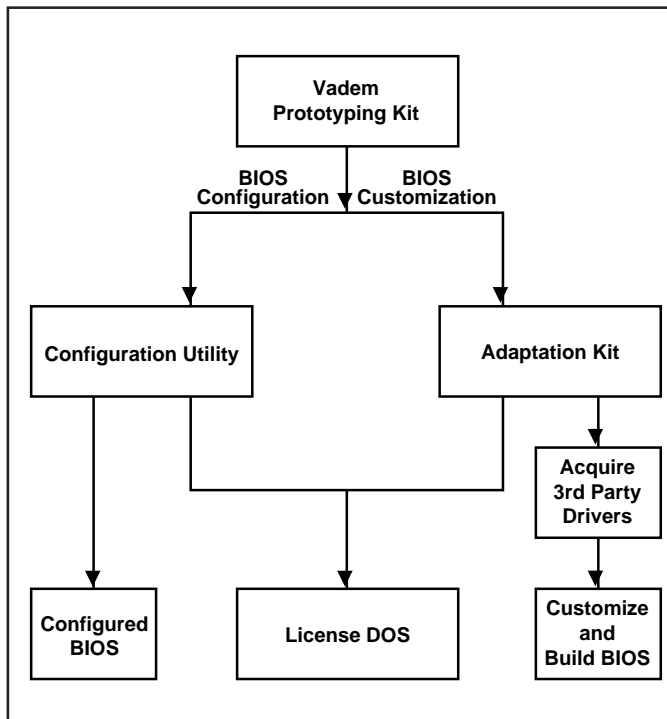- ROM-resident debugger

Available driver options for specific configurations
- LIM 4.0 EMS driver

Additional Information

▌ Vadem's standard, field-proven BIOS and associated firmware for the VG230 provides the standard industry compatible interfaces (BIOS calls) for video output, polled serial communications, keyboard input, parallel printer port output and floppy disk input/output. Industry standard DOS operating systems can run without modification on top of the Vadem firmware layers.

▌ OEMs incorporating Vadem firmware in their products must first purchase the VG230 Prototyping Kit (VG230-PROT). This kit includes a VG230-based hardware environment, firmware and a BIOS configuration utility. This utility allows straightforward enabling and disabling of BIOS options. For keyboard scan configuration, LCD configuration, etc., the Prototyping Kit BIOS and configuration utility are sufficient to develop a production BIOS. Some applications require an additional level of BIOS customization. OEMs may purchase the BIOS Adaptation Kit (VG230-ADPT) for such tasks. The following "road map" illustrates alternative approaches to developing production VG230 firmware:

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        ┌─────────────────────┐
        │       Vadem         │
        │  Prototyping Kit     │
        └─────────────────────┘
      BIOS              BIOS
  Configuration  ▼  Customization
     ┌──────────────────┐      ┌──────────────────┐
     │  Configuration   │      │  Adaptation Kit  │
     │     Utility      │      │                  │
     └──────────────────┘      └──────────────────┘
                                        │
                               ┌──────────────────┐
                               │     Acquire      │
                               │    3rd Party     │
                               │     Drivers      │
                               └──────────────────┘
     ┌───────────┐  ┌───────────┐  ┌───────────┐
     │ Configured│  │License DOS│  │ Customize │
     │   BIOS    │  │           │  │    and    │
     │           │  │           │  │ Build BIOS│
     └───────────┘  └───────────┘  └───────────┘
```

▌ The standard VG230 BIOS supports PCMCIA 2.1 (JEIDA 4.1) specifications for Socket Services 2.1 and Card Services 2.1. These specifications describe the interface through which device drivers and utility applications configure and access PC Card memory and I/O cards (miniature peripherals). After PC Cards are "enabled" in the system by initialization software available from card manufacturers, applications can access cards through standard PC peripheral interfaces, as though the cards (memory or I/O) were standard PC sub-systems.

▌ The VG230 BIOS incorporates advanced power management firmware to save power in idle sub-systems, which are detected by activity monitoring. Whenever the user is active, but the CPU is inactive for a programmed amount of time, the system will enter DOZE mode to save power. If the system and the user are inactive for a programmed period of time, the system will enter SUSPEND mode to maximize battery life. System data contents will not be lost. "Hooks" are supplied to control power management of external devices. Microsoft APM 1.0 is supported in the BIOS.

▌ Most VG230-based products use DOS in ROM, which must be licensed from the operating system provider. Vadem's VG230 Prototyping Kit supplies VG230 modifications to the Microsoft POWER.EXE and CMCDD drivers. OEMs must license Microsoft's OEM Adaptation Kit (OAK) to make use these modifications. There are non-Microsoft choices for DOS. OEMs must contact these providers directly for information regarding power management and file-system driver development.

WARRANTY

Vadem warrants for a period of twelve months from date of license agreement, that its development tools, BIOS and associated firmware are free of coding errors. Should a customer discover a coding error, Vadem will correct the error for the customer in response to a documented description of the error. Additionally, from time to time, Vadem may issue updates for Vadem development tools, BIOS and/or associated firmware to customers under warranty.

ADDITIONAL INFORMATION

Additional information regarding VG230 hardware and additional documentation regarding VG230 firmware may be obtained from Vadem.

ORDER NUMBERS

Prototyping Kit: VG230-PROT
BIOS Adaptation Kit: VG230-ADPT
LIM EMS 4.0 Driver: VG230-LIM4