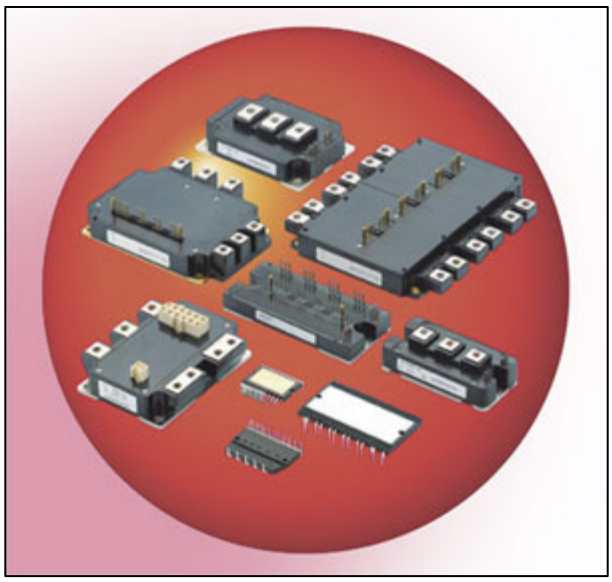
GLYN Newsletter
High-Tech Distribution

News Highlights – Issue 32:

Mitsubishi Electric Promotes its IGBT and Intelligent Power Modules for Inverters and Other Power Applications



Over 15 years have now passed since the IGBT (Insulated Gate Bipolar Transistor) was first developed and produced as industrial power semiconductor switch. During these years, its performance has been greatly improved and its utilisation has become widespread in most industrial application fields. Mitsubishi Electric, available through GLYN High-Tech Distribution, is introducing its 5th generation IGBT modules developed using the latest CSTBT™ chips, which combines the advantages of trench IGBT with its low loss and planar IGBT with its versatility.

IGBT modules have taken applications away from both MOSFET Modules and Bipolar Darlington Modules as they operate in hard switching applications upwards of 20kHz and higher in soft switching applications. Also they serve the lower 1 - 10kHz range previously dominated by Bipolar Transistor modules, up to 1MW applications.

The development of the IGBT has allowed a long desire for the peripheral circuits to be built into power modules to be realized in a cost effective manner through the development of the IPM (Intelligent Power Module). Mitsubishi Electric IPMs are advanced hybrid power devices that combine high speed, low loss IGBTs with optimized gate drive and protection circuitry. Highly effective over-current and short-circuit protection is realized through the use of advanced current sense IGBT chips that allow continuous monitoring of power device current. System reliability is further enhanced by the IPM's integrated over temperature and under voltage lock out protection. Compact, automatically assembled IPMs are designed to reduce system size, cost, and time to market.

IGBT and IPM have been developed to satisfy particular customer needs for higher frequency operation to provide a "noiseless" inverter, operating above the audible range. Additional requirements include more precise servo motor controllers, higher efficiency, compact, low noise UPS systems, etc. Mitsubishi Electric's 5th generation IPM have also

been developed for renewable energy systems such as photovoltaic generation, wind power generation and fuel cells.

Mitsubishi Electric has also developed DIP-IPM (Dual In-Line Intelligent Power Module) including the Super Mini DIP-IPM Ver. 4 line-up which is ideal for household electric appliances, such as air conditioners, washing machines, refrigerators and low power industrial motor drives.

The new IGBT module series line up covers the range from 50A to 1400A, 250V to 1700V. IPM series covers the range from 25A to 800A, 600V to 1200V. DIP-IPM series covers the range from 3A to 50A, 600V/1200V.

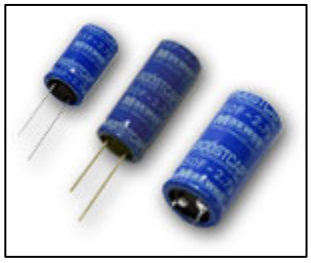
Typical applications for Mitsubishi IGBT and IPM include:
- General purpose inverters
- UPS
- Power converters/conditioners for solar power, wind power and fuel cell
- AC servo amplifier
- Motor control
- Welder
- Medical equipment (CT scanners, MRI)
- Air conditioner
- Refrigerator
- Washing machine
- Electric train
- Electric cars

The Mitsubishi Electric IGBT and IPM have been designed to exacting standards for the key ratings and characteristics required to provide optimum performance for switching operation. These key parameters have been determined and understood well by the technical experts at Mitsubishi Electric, the recognized world leader in Power Transistor Modules.

For more information on Mitsubishi Electric power devices, please send us an email at sales@glyn.com.au

Maxwell Technologies Introduces New BOOSTCAP® Ultracapacitor Energy Storage Products for Industrial and Consumer Electronics Applications

New HC Product Family Includes Compact, Cost-Effective, 25- 50- and 150-Farad Cells



Today more than ever, system designers recognise that ultracapacitors enhance energy efficiency and functionality and provide 'life of the application' durability for virtually any electronic device or system. The new HC product family responds to growing demand by delivering Maxwell's industry-leading technology in new form factors that are suitable for a broader range of electronic applications.

Maxwell Technologies, available through GLYN High-Tech Distribution, introduces the new HC family of ultracapacitors which includes compact, cost-effective, 25-, 50- 150-farad cells, all rated at 2.7 volts. Typical applications benefiting from ultracapacitor cells in the 25-to-150-farad range include:

- Robotics and factory automation
- Uninterruptible power supply (UPS) systems for industrial and telecommunications installations

- Renewable energy systems, including solar and wind energy generation systems
- Cordless power tools
- Consumer electronics

Key features and benefits include:

- Reliable performance for 500,000 or more charge/discharge cycles
- Zero maintenance over estimated 10-year operating lifetime
- Broad operational temperature range (-40 to +65C)
- High power and energy density in low-volume, lightweight package
- Two-pin radial design for easy mounting
- Resistant to reverse polarity
- Scalable to higher voltages via multi-cell configurations

For pricing or more information on Maxwell Technologies ultracapacitors, please send us an email at sales@glyn.com.au

FTDI Releases Single Chip Hi-Speed USB 2.0 Solutions to Ease Serial and Parallel Interfacing

Future Technology Devices International Limited (FTDI), available through GLYN High-Tech Distribution, recently announced the availability of their 5th generation of USB to UART/FIFO ICs. The two new devices support the 480 Mb/s USB 2.0 Hi-Speed specification. The FT2232H and FT4232H devices have the capability of being configured in a variety of industry standard serial or parallel interfaces such as UART or FIFO.

The FT4232H offers four configurable interfaces and the FT2232H two configurable interfaces. Two of the FT4232H's interfaces and both of the FT2232H's interfaces can be configured as UART, JTAG, SPI, I2C or bitbang mode serial interfaces with independent baud rate generators. The additional two interfaces of the FT4232H offer UART or bitbang options. In addition, the FT2232H can be configured as a dual FT245 FIFO, a host bus emulation mode, a CPU interface FIFO mode or a fast opto-isolated serial interface mode.

Both devices support a data transfer rate up to 12 Mbaud when configured as an RS232/RS422/RS485 UART interface and > 25 Mbytes/second over a parallel FIFO interface (FT2232H only).

A USB protocol engine controls the physical Universal Transceiver Macrocell Interface (UTMI) and handles all aspects of the USB 2.0 Hi-Speed interface. Both ICs integrate a Low Drop-Out (LDO) regulator, an internal 12MHz to 480MHz PLL and interface to an external EEPROM.

These devices integrate the entire USB protocol on a single chip and provide extremely flexible interface configuration options. They provide a flexible method of interfacing to FPGAs and microcontrollers as well as upgrading legacy designs to accommodate USB communication.

Features of the Hi-speed USB 2.0:

• FT2232H (Dual Hi-Speed USB to Multipurpose UART/FIFO IC) has 4k bytes Tx and Rx data buffers per interface
• FT4232H (Quad Hi-Speed USB to Multipurpose UART/MPSSE IC) has 2k bytes Tx and Rx buffers
• Multi-Protocol Synchronous Serial Engines (MPSSE) and such as I2C, JTAG and SPI bus, capable of speeds up to 30Mbits/s, provide flexible interface configurations
• Entire USB protocol on a chip with integrated LDO regulator and PLL
• Extended temperature range (-40ºC to +85ºC)

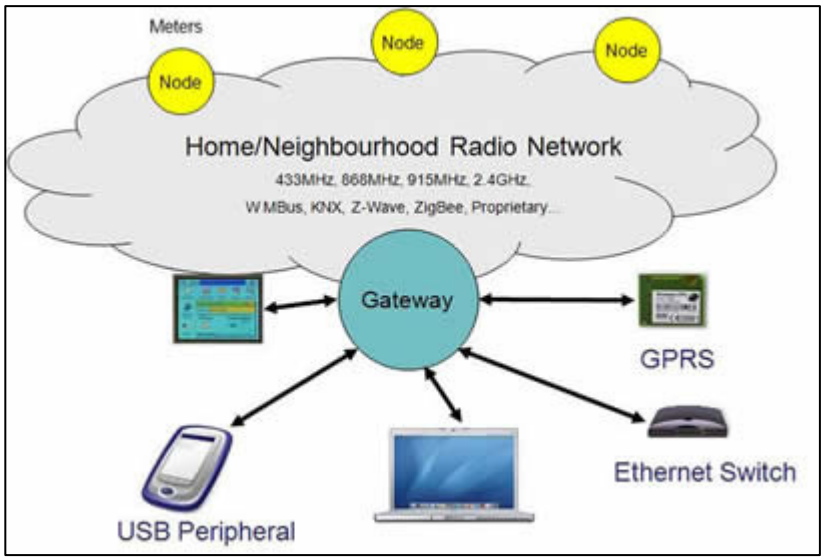
For more information on the new FTDI chips:
FT2232H - http://www.ftdichip.com/Products/FT2232H.htm
FT4232H - http://www.ftdichip.com/Products/FT4232H.htm

Volume production will be ready for delivery starting from 1st March 2009.

Engineering samples are available in limited quantity and customers must fully complete the customer project survey form.

To request engineering samples or a quote, please send us an email at sales@glyn.com.au

Cyan Provides Gateway Solutions for Various Wireless Technologies



Wireless technology provides solutions to many applications problems and there are many topologies and protocols that are optimised for the requirements that need to be served. However, few networks exist in isolation and it is usually necessary for control commands and data to be communicated remotely to the wireless network via a concentrator or gateway, interfacing to an entirely different protocol. The ubiquity of the Internet and PC based systems means that this is usually Ethernet or alternatively USB. Because of their ubiquity, these protocols are often viewed as a commodity product but that does not make them any less complex. However, designers may not wish to invest the effort in understanding something that is not their core expertise and diverts them from their main tasks.

The Cyan USB/Ethernet Development Kit, available through GLYN High-Tech Distribution, provides a ready-to-go solution to gateway problems.

• Interfaces with very little work USB (host or device) and / or Ethernet to any RF module that uses AT Command set, UART, SPI
• Full demo available transferring data from RF module to display on embedded webserver
• Easily create your own gateway to the RF protocol node of your choice
- Radiocrafts Wireless MBus
- ZigBee (Jennic, Ember, Radiocrafts)
- Zensys / Z-Wave

- Coronis / Wavenis
- IEEE802.15.4
- Etc.
● Schematics available for incorporation into customer's own design
● Production ready USB/Ethernet module for immediate implementation
● Drag and drop software components, including USB and Ethernet stacks
● Contact us now about planned RF/USB/Ethernet modules
● Easy customisation using free of charge CyanIDE®2 tools
● Includes unrestricted CyanIDE2 IDE, compiler, toolchain and high speed eICE dongle
● Unused MCU performance and peripherals available for customer's own use

Applications include utility metering, (AMI and AMR), home automation, security systems, industrial sensor and control, inventory control systems, environmental monitoring, vending and gaming machines.

Board features:
● Cyan eCOG1X14Z5 microcontroller
- 512KB flash
- 24KB SRAM
- 4x UART
- 12-bit 200ksps ADC
- 12-bit DAC
- 10/100 Ethernet
- USB 2.0 Compatible host/slave/OTG peripheral
● 16MB SDRAM
● Ethernet PHY and RJ45 connector
● USB connectors for use with internal PHY (Ls, FS) and external PHY (HS)
● RS 232 Buffer x 1 channel

Example Project Templates provided for:
● Webserver which serves pages over Ethernet to a standard browser that have been stored on a standard external USB memory stick. The pages can be updated remotely using FTP.
● Data logging from an analogue channel to a USB flash disc.
● DNS Resolver
● Many others...

Software Components:
● Ethernet stack, with
- TCP/IP
- UDP
- ICMP (Ping)
- DHCP Client
- DNS Client
- HTTP Web Server
- Telnet Server
- FTP Server
● USB stack, with:
- Keyboard device
- Audion device
- CDC Serial (Q4 2008)
- MSD device
● FAT File System
● CYDF Driver Framework

For pricing or more information on Cyan products, please send us an email at sales@glyn.com.au

Jennic Develops Application Case Studies for its ZigBee and JenNet Wireless Technologies

Jennic, available through GLYN High-Tech Distribution, has released several case studies and reference design for various customer applications using its ZigBee and JenNet wireless technologies.

These applications include:

- Smart energy solutions using ZigBee Pro Smart Energy Profile
- Wireless lighting control for street lighting, car park and outdoor areas
- Wireless condition monitoring and tracking in logistics applications
- Wireless audio reference design
- Wireless sensor network for building heating control system
- Wireless electronic shelf labelling for retail stores

For a copy of the Jennic customer application case studies and related documents, please send us an email at sales@glyn.com.au

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