



IOT7210™

Low-Power CMOS IEEE 488 Controller Device

Features

- 98% less power consumption
- 100% NEC μ PD7210 compatible
- Completely meets IEEE Standard 488-1978
- Easily attaches to any microprocessor data bus
- Programmable data transfer rate
- End-of-string (EOS) message automatic detection
- Automatic (IEEE Standard 488-1978) command processing and undefined command read capability
- DMA-capable
- 1-MHz to 8-MHz clock range
- TTL-compatible & CMOS
- +5V single power supply
- 40-pin plastic DIP or 44-pin plastic TQFP
- 8080/85/86-compatible

The IOT7210™ low-power CMOS intelligent IEEE 488 controller meets all the functional requirements for talkers, listeners, and controllers as specified by the IEEE Standard 488-1978. It completely duplicates the NEC μ PD7210's function and provides enhancements such as lower power consumption and increased speed. Fully compatible with most processor architectures, the IOT7210 requires only the addition of the bus driver/receiver components to implement any IEEE 488 interface.

In its 40-pin plastic DIP package, the IOT7210P™ provides users with a drop-in replacement for the μ PD7210 and eliminates the need for either software or hardware modifications in properly designed systems. It is also available in a 44-pin, 1.27 mm thick plastic TQFP package for surface-mount applications, the IOT7210T™.



The IOT7210 is an enhanced replacement for the NEC μ PD7210 IEEE 488 controller device

IOT7210 Operation on the IEEE 488 Bus

Since its introduction in the 1970s, the IEEE 488 standard has become the most popular means of interconnecting instruments and controllers. This highly sophisticated standard has been refined over the years to provide a great degree of flexibility, permitting it to meet most instrumentation requirements. The IEEE 488 bus uses a common set of data and control lines to interconnect up to 15 devices. The devices' capabilities are classified as a combination of talker, listener, and/or controller. Devices that incorporate the IOT7210 can perform all three of these functions.

Data is transferred on the IEEE 488 bus in a bit-parallel, byte-serial fashion over eight bidirectional data lines. A 3-wire handshake ensures synchronization of transmission and reception, and allows more than one device to receive data at the same time, with the slowest device controlling the data rate. Other control lines perform a variety of functions, such as device addressing and interrupt generation. In addition to providing all the control and data lines necessary for IEEE 488 operation, the IOT7210 provides a flexible interface to the standard IEEE 488 transceivers.

The IOT7210 implements all the functions (including timing) that are required to interface to the IEEE 488 bus, and provides high-level bus protocol management, which frees the host processor for other tasks. By performing these functions in dedicated hardware, the IOT7210 ensures bus compatibility with other IEEE 488 devices.

The IOT7210 is controlled by its 16 internal registers. To reduce CPU overhead, bus data bytes can be transferred to and from the IOT7210 using DMA. The IOT7210's DMA feature is generic enough that it can be used to interface to most processors and buses.

Ordering Information

Description	Part No.
Low-power CMOS IEEE 488 controller device in a 40-pin plastic DIP	IOT7210P
Low-power CMOS IEEE 488 controller device in a 44-pin plastic TQFP	IOT7210T

For complete information on accessories and cables, visit www.iotech.com/acc