

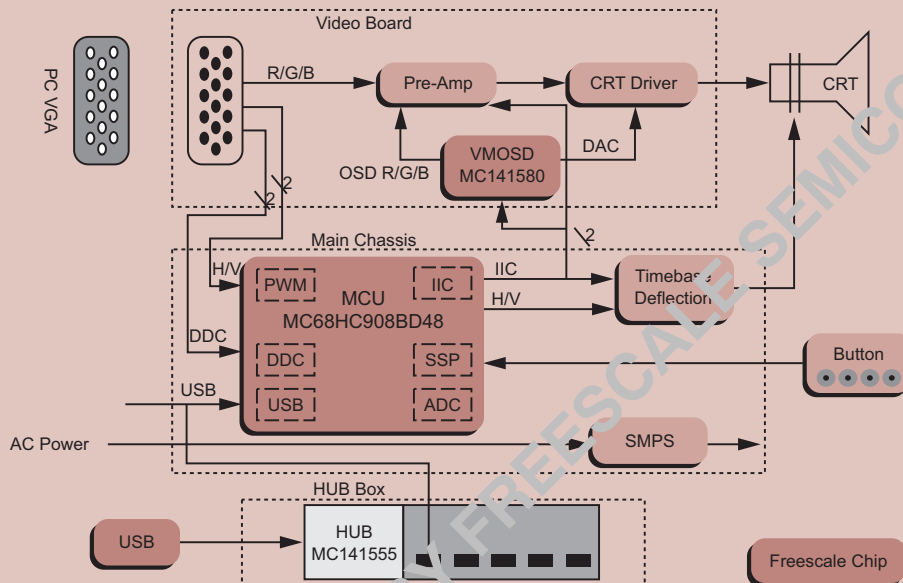
# CRT Monitor

## Overview

Over a billion PCs are sold every year, each with a visual interface for the human user. Accounting for 80 percent of these interfaces is the popular CRT monitor.

Since introducing the first dedicated monitor microcontroller unit (MCU) in 1994, Freescale Semiconductor remains the leader in MCUs designed for monitors.

CRT MONITOR SYSTEM BLOCK DIAGRAM



## Key Benefits

- > USB interface on MCU
- > Freescale Semiconductor's 68HC908BD48 8-bit MCU is a top-selling product in the CRT market
- > Flash-based MCU provides additional benefits:
  - In-application programming, reducing time-to-market
  - Faster Flash memory programming and erase times
  - End-of-line customization for regional variations in consumer demands
  - Standardized platforms, reducing product variability

## Freescale Ordering Information

Part Number	Product Highlights	Additional Information
68HC908BD48	<ul style="list-style-type: none"> <li>&gt; 48KB Flash</li> <li>&gt; 1KB RAM</li> <li>&gt; 6-channel, 8-bit ADC</li> <li>&gt; USB</li> </ul>	<a href="http://www.freescale.com">www.freescale.com</a> <sup>Note</sup>
MC141555	<ul style="list-style-type: none"> <li>&gt; One to four stand alone USB HUB</li> <li>&gt; USB 1.1 compliance</li> </ul>	<a href="http://www.freescale.com">www.freescale.com</a> <sup>Note</sup>
MC141580	<ul style="list-style-type: none"> <li>&gt; 512-fonts OSD with video measurement</li> <li>&gt; IIC control, optional 6 channel 8-bit PWM</li> </ul>	<a href="http://www.freescale.com">www.freescale.com</a> <sup>Note</sup>

Note: Search on the listed part number.

### Design Challenges

As the complexity and functionality of electronic systems continues to grow, demands for the designer to reduce cycle time and system cost are increasing. Finding an MCU that minimizes the overall cost of the system, while still fulfilling the system specifications, is one of the main challenges faced by most designers today. Freescale Semiconductor's 8- and 16-bit MCUs provide designers with the flexibility and reliability needed to get their designs into production quickly and efficiently.

### Freescale Semiconductor Solution

Freescale Semiconductor's 68HC908BD48 8-bit Flash monitor MCU (Figure 1) is a top-selling product in the CRT market. This MCU features 48KB Flash memory and a USB interface.

As the Flash industry leader, Freescale Semiconductor's Flash MCUs provide features and flexibility in new designs:

- > In-application programming, reducing time-to-market
- > Improved write/erase and data retention performance for Flash, allowing users to define their own preferred programs

- > Faster Flash memory programming and erase times
- > Flexible block protection and security
- > Flash can be used to emulate EEPROM
- > Reduced code obsolescence/scrapped product
- > End-of-line customization for regional variations in consumer demands
- > Standardized platforms, reducing product variability

## Development Tools

Tool Type	Product Name	Vendor	Description
In-System Programming	PC Software and Header Port Connection	Freescale Semiconductor	Contact your Freescale Semiconductor sales representative for more information.
C-Reference Code for CRT Monitor	CRT Monitor Demonstration Software with USB and Digital Display Channel (DDC) Control	Freescale Semiconductor	Contact your Freescale Semiconductor sales representative for more information.
Freescale Semiconductor Modular Evaluation System (MMEVS)	X68C908BD48	Freescale Semiconductor	Contact your Freescale Semiconductor sales representative for more information.

## Freescale Semiconductor Reference Designs

Part Number	Product Highlights	Additional Information
RD68HC908USB	<b>Universal Serial Bus (USB) Based Sensor-Actuator Interface Reference Design</b> Universal Serial Bus is an industry standard communications protocol between computer peripherals. Widely used to connect peripherals such as printers and scanners, USB is also a standard used in measurement, control, and e-commerce; e.g., Smartcard readers and barcode scanners.	<a href="http://www.freescale.com">www.freescale.com</a> <sup>Note</sup>

Note: Search on the listed part number.

## Related Documentation

Document Number	Description
SG1006	Microcontrollers Product Selector Guide

Notes

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