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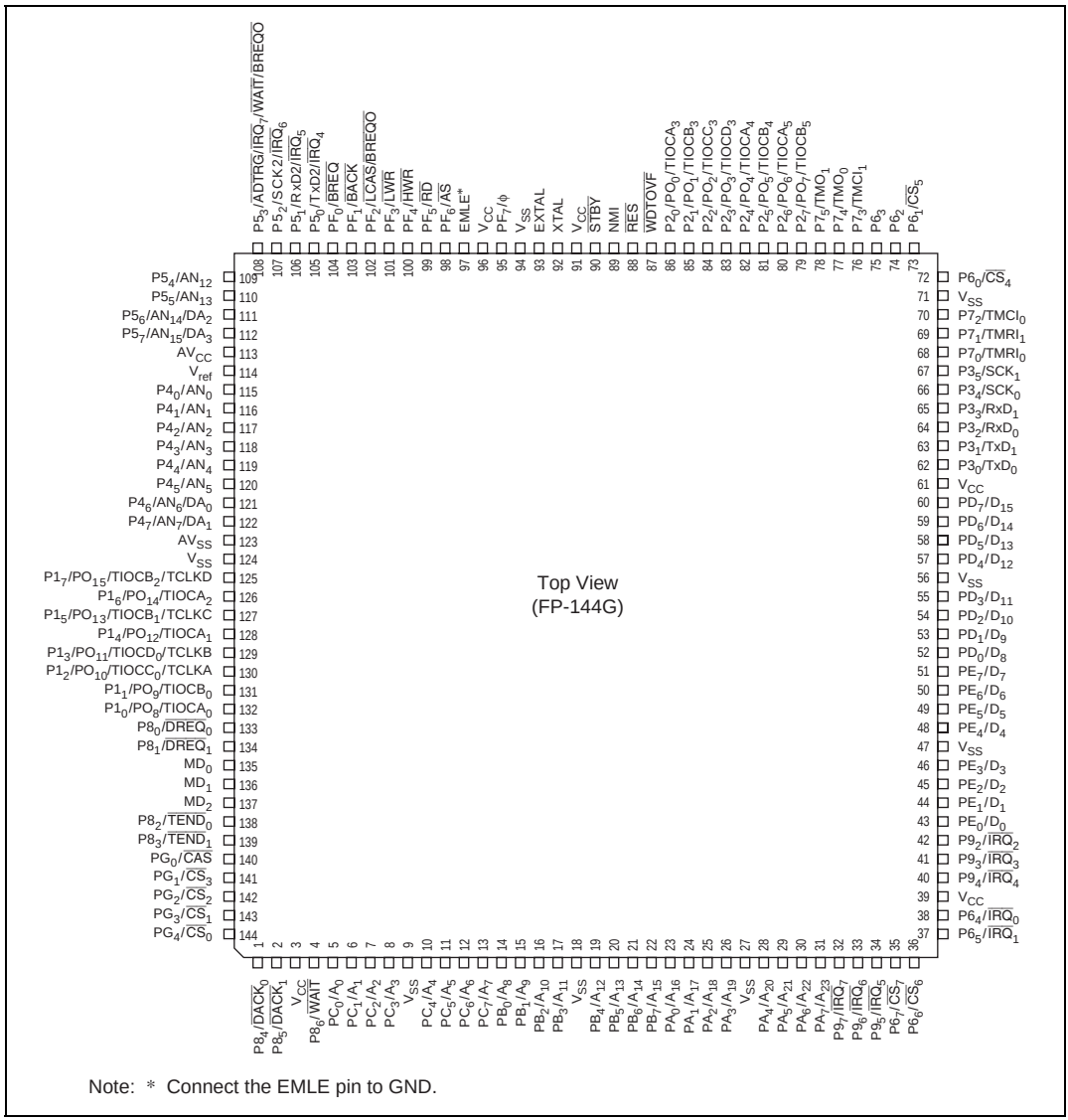
What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Active
Core Processor	H8S/2000
Core Size	16-Bit
Speed	20MHz
Connectivity	SCI, SmartCard
Peripherals	DMA, POR, PWM, WDT
Number of I/O	106
Program Memory Size	-
Program Memory Type	ROMless
EEPROM Size	-
RAM Size	8K x 8
Voltage - Supply (Vcc/Vdd)	2.7V ~ 3.6V
Data Converters	A/D 12x10b; D/A 4x8b
Oscillator Type	Internal
Operating Temperature	-20°C ~ 75°C (TA)
Mounting Type	Surface Mount
Package / Case	144-BFQFP
Supplier Device Package	144-QFP (20x20)
Purchase URL	https://www.e-xfl.com/product-detail/renesas-electronics-america/d12332vfc20v



Note: * Connect the EMLE pin to GND.

Figure 1.3 HD64F2339 Pin Arrangement (TFP-144G: Top View)

6.6.2 When DDS = 0

When DRAM space is accessed in DMAC single address mode, full access (normal access) is always performed. With the DRAM interface, the $\overline{\text{DACK}}$ output goes low from the T_r state.

In modes other than DMAC single address mode, burst access can be used when accessing DRAM space.

Figure 6.29 shows the $\overline{\text{DACK}}$ output timing for the DRAM interface when DDS = 0.

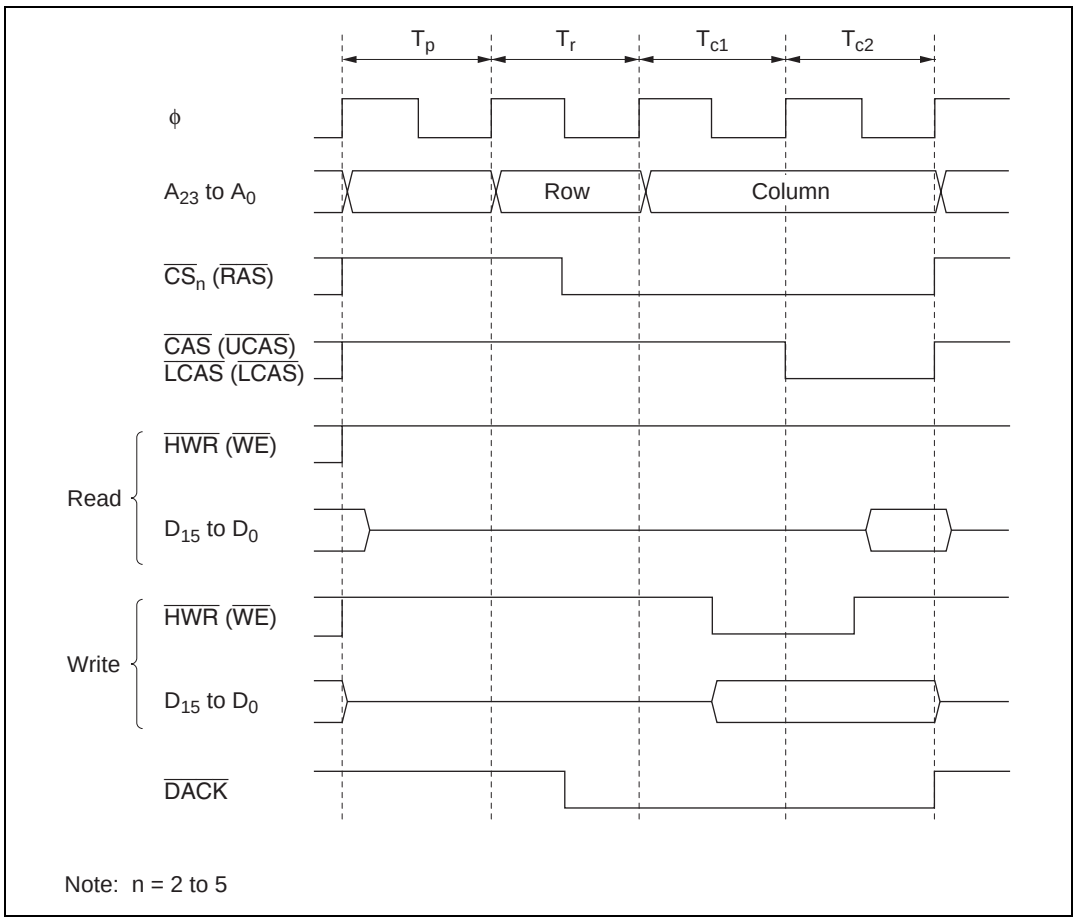


Figure 6.29 $\overline{\text{DACK}}$ Output Timing when DDS = 0 (Example of DRAM Access)

Bit 3—Flash Memory Control Register Enable (FLSHE): Controls CPU access to the flash memory control registers (FLMCR1, FLMCR2, EBR1, and EBR2). Writing 1 to the FLSHE bit enables the flash memory control registers to be read and written to. Clearing FLSHE to 0 designates these registers as unselected (the register contents are retained).

Bit 3 FLSHE	Description
0	Flash control registers are not selected for addresses H'FFFFC8 to H'FFFFCB (Initial value)
1	Flash control registers are selected for addresses H'FFFFC8 to H'FFFFCB

Bits 2 and 1—Reserved: These bits cannot be modified and are always read as 0.

Bit 0—Reserved: This bit should be written with 0.

19.5.6 RAM Emulation Register (RAMER)

Bit	:	7	6	5	4	3	2	1	0
		—	—	—	—	RAMS	RAM2	RAM1	RAM0
Initial value	:	0	0	0	0	0	0	0	0
R/W	:	—	—	—	—	R/W	R/W	R/W	R/W

RAMER specifies the area of flash memory to be overlapped with part of RAM when emulating real-time flash memory programming. RAMER is initialized to H'00 by a reset and in hardware standby mode. It is not initialized in software standby mode. RAMER settings should be made in user mode or user program mode.

Flash memory area divisions are shown in table 19.8. To ensure correct operation of the emulation function, the ROM for which RAM emulation is performed should not be accessed immediately after this register has been modified. Normal execution of an access immediately after register modification is not guaranteed.

Bits 7 to 4—Reserved: These bits cannot be modified and are always read as 0.