

An important aspect of embedded system design is being able to communicate effectively using the technical vocabulary associated with embedded systems. You should be able to define and communicate using the following terms before the end of the semester.

Embedded System, Microprocessor, Microcontroller
RAM, SRAM, DRAM, NVRAM, DDR, DMA
ROM, EPROM, EEPROM, Flash Memory, OTP
Oscillator, Crystal, Start-up Time, Clock Oscillator
Clock, Race Condition, Glitch, Jitter, Eye Diagram
Reset, Power-on, Manual, Brown-out
Noise, Ground Bounce, Noise Margin, Bus, Crosstalk
Transmission Line, Ringing, Reflections, Termination
EMI, EMC, Ground/Power Plane, Signal Integrity
CMOS, TTL, Logic Families, Switching Threshold
Totem-Pole Output, Open Collector/Open Drain Output
Fan-out, Fan-in, Pull-up/Pull-down Resistor, Floating
Contention, Drive Fight, Wire-OR/Wire-AND
Bypass/Decoupling Capacitor, ESR, ESL
In-rush Current, Voltage Droop
Transistor, MOSFET, BJT, Beta, Saturation
Diode, Switching, Power, Zener, LED
Clamping Diode, Protection Diode, Leakage Current
Interrupt, NMI, Maskable, Edge/Level Triggered
Voltage Regulator, Thermal Grease, Heat Sink
Multiplexer, Multiplexed Address/Data
Buffer, Latch, Flip-Flop, State Machine
IC, ASIC, LSI, VLSI, Integration
Propagation Delay, Setup/Hold Time
Glue Logic, Chip Selects, PLD, FPGA, PAL/GAL
Address Decoding, Complete, Incomplete
Address Space, Memory Map, Aliasing, Ghosting
EPROM Emulator, Device Programmer
In-Circuit Emulator (ICE), Breakpoints, Traces
Debugger, JTAG, Scan Chain, Boundary Scan
Logic Analyzer, Pod, Disassembler, Trigger
ESD, Antistatic, Conductive, 'Walking Wounded'
Serial/Parallel Communication, SERDES
Asynchronous/Synchronous
RS-232, RS-422, RS-423, RS-485, SPI, I2C, USB
Op-Amp, Gain-Bandwidth Product, Slew Rate
Frequency Response, Unity Gain Buffer
Reconfigurable Logic, SoC, Platform FPGA
Cache, Pipeline, Embedded Core
Peripheral (PIC, PIT, LCD, etc.)
ADC, DAC, Resolution, Monotonic
Successive Approximation, Flash Conversion
Schematic, Wiring Diagram, Block Diagram, Layout
Wire-wrapping, Soldering, Cold Solder Joint
PCB, PCA, PWB, PWA, Via, Trace
Supervisory Circuit
Watchdog Timer, Low Voltage Detector
Transient Failures, Memory Hits, Signature Byte
Error Handling, ECC, EDC
RoHS, Pb Free, Green, EuP

Exception, Trap, Interrupt
Vector Table, Reset Vector, Re-vectoring Interrupt
ISR, Interrupt Service Routine, Interrupt Handler
Build Process, Editor, Preprocessor, Compiler
Assembler, Disassembler, Inline Assembly
Linker, Linkage Editor, Resolving
Profiler, Optimizer, Types of Optimization
Simulator, Interpreter
Monitor, Debugger, Source Level Debug
Tracepoint, Trace Buffer
Target, BSP, Board Support Package, Host
IDE, Eclipse
Lint/Splint, Version Control, Code Review
Source Code, Object/Machine Code, Library
Relocatable Object Code, Reentrant
Stack, Heap, Stack Pointer, Malloc, Free
Register, Register Variable
Interrupt Masking, Priorities, Latency
OS, RTOS (VxWorks, PSOS+, etc.), Executive
Processes, Tasks, Multi-tasking, Deadline
Preemptive, Cooperative, Time Slice, Scheduling
Context Switch, Latency
Blocked, Deadlock, Priority Inversion, Round Robin
Interprocess Communication, Messages, Mailbox
Queues, Signals, Semaphores, Mutex
Critical Section, Atomic Operation/Instruction
Resource Protection
Firmware, Embedded Software, BIOS
Initialization Code, 'C Machine', Boot, Startup, POST
Memory Test, Walking 1's
Pointer, Dereferencing, Uninitialized
Main Loop, Infinite Loop
Interrupt Driven, Polling
Firmware State Machine
Big-Endian, Little Endian, Byte Order/Swapping
Native Word Size
Globals, Locals, Initialized, Uninitialized
Scoping of variables and functions
Binary, ASCII, Hex, Hex Records, Intel, Motorola
Unsigned/Signed Variables
Function Prototype
Data Structures, Linked List, Struct, Union
FIFO, Circular Buffer, Lookup Table
Condition Codes
Bandwidth, Throughput, Latency, Utilization
Floating Point, Coprocessor, Floating Point Library
Bank Switching
Switch Bounce, Software/Hardware Debouncing
Serial Interface, Bit Banging, I/O, GPIO
Testing - black box, white box, unit, regression