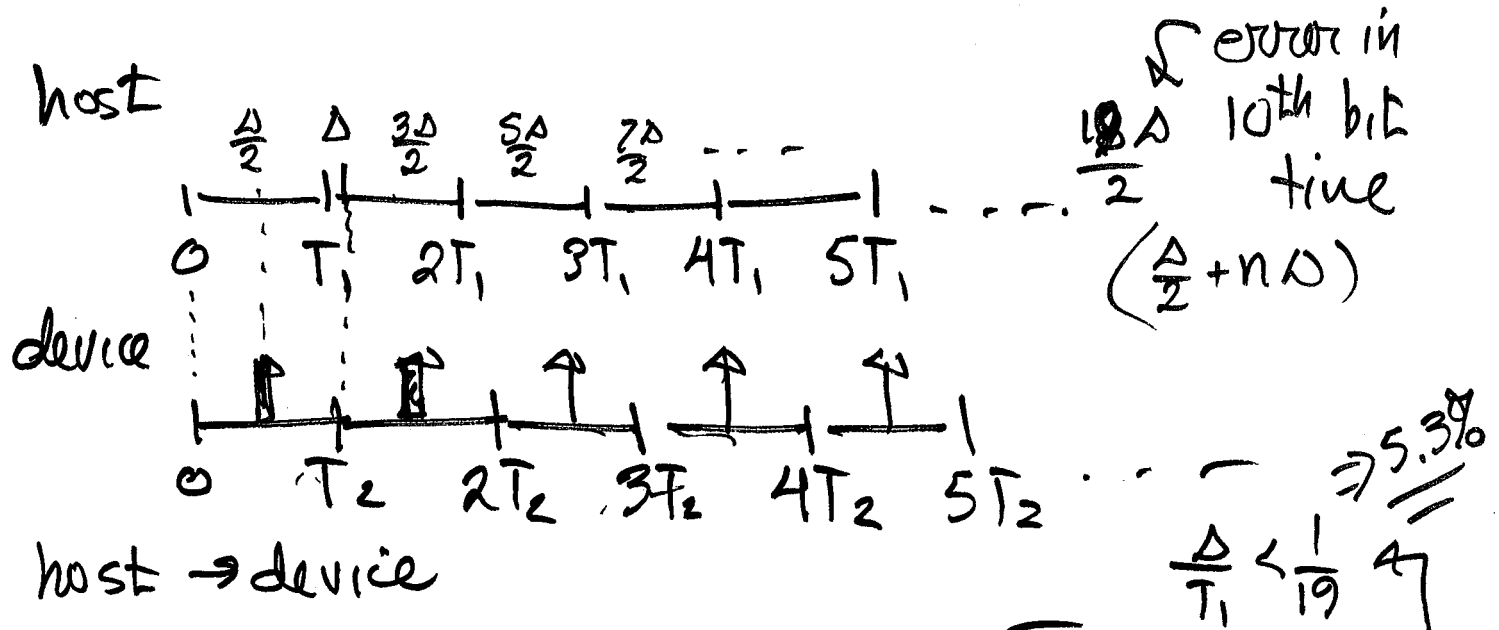


EE2361-lecture 20

10/24/16

Homework 3?

due next Monday



$\Delta$  is the error  $T_1 + \Delta = T_2$

For 10 bits, what error can we tolerate?

Require  $\frac{19\Delta}{2} < \frac{T_1}{2}$   $\Delta < \frac{1}{19} T_1$  for 10 bits

$\Rightarrow 5.3\%$

$\frac{\Delta}{T_1} < \frac{1}{19}$

Classical Asynchronous protocol is RS-232  
(serial port on PCs)

RS-232 standard defines

- signaling protocols ✓
- external cabling ✓
- handshaking protocols ✓

External cables use DB-9, DB-25

Signal levels

logic one	-3V to -25V
logic zero	+3V to +25V

RS-232 is intended for data rates up to 20kbs and cable lengths up to 50ft. Another standard, RS-422 was developed for longer cable lengths and faster data rates. RS-422 uses differential signaling.

What are cable wires?

- signals w/ Flow control
- interface chips, cables

PIC24F UART?

PIC24F Family Reference Manual