How many clock cycles of the 100 MHz clock used on the FPGA board does it take to provide one bit of data using this baud rate?

10ns/bit 19200bits/sec 100,000,000clocks/sec

5.2083e-5sec

How many bits are needed to count the clock cycles for each bit of data?

5208 ns

What is the maximum number of 8-bit ASCII characters that can be transmitted per second using your transmitter at a baud rate of 19,200?

1745.45455 characters

LUTs - 40

IO - 25