

Potential Failure Mode	Potential Failure Effect	Severity (1-10)	Potential Cause	Occurrence (1-10)	Controls	Detection (1-10)	Risk Priority Number
PC Connection Disrupted	Lost information while connection not established	8	Sudden physical impact on cord by outside force, cord unplugged, port failure	5	Using a shorter cord in a well protected environment	3	120
Interrupt Generated During Buffer Update (critical section protection in place)	Lost data from missed interrupt (probably not a lot of data though)	3	Data coming across UART connection very quickly	3	Interrupts are disabled for as short a time as possible	9	81
Improper PC Terminal Program Settings	Bidirectional communications will be interpreted as garbage characters	8	Wrong baud rate, wrong start/stop/parity bits set	5	UART settings in README, relative ease of detection and adjustment of settings on PC or in code	2	80
Transmit Buffer Overflow	Code should wait until space is available, but will probably slow down	2	Sending report - sending a lot of data in a short span of time	7	Add report to queue in segments	4	56
Character Count Overflow	Inaccurate character counts in report	5	The same character fed to program repeatedly, program run on a huge amount of text	2	Size of character count variables, recommendation not to run program on extremely large text sections	5	50
Receive Buffer Overflow	Lost data (any beyond what could fit in the buffer)	6	Data coming across UART connection very quickly	5	Throwing an overflow error	1	30
Massive Power Surge	PC and board are irrevocably damaged	10	Lightning strike, major power supply malfunction	1	Surge protection built into PC power supply (and board power supply by extension)	1	10
Unexpected Characters in PC Terminal	May depend on character, may be interpreted as two separate 8 bit characters	2	Special keyboard (for a language which uses alternate characters)	2	Limits on what characters can be put in via keyboard; Terminal program should be set up to only send 8-bit	2	8