

### Note concerning the Rocket-I/O (RIO) Labs

Usually engineers testing a communication link send a PRBS and check that data was received correctly on the other end. Most of the labs of the RIO class we simulate such an environment by having an initialization sequence (INIT\_00) and (INIT\_01) that is sent once, followed by a packet (INIT\_02). A suitable method to access the data in a simulation environment is in BRAM, as the BRAM can be configured as 2Kx9 (the data is 8 bits plus one conventional parity bit (9<sup>th</sup> bit)) of the BRAM to distinguish between control characters 9 (K-characters) and data characters (D-characters).

A Sample of the the Data Characters (Appendix B, pg 129 of the user guide)

BC	101 11100	D28.5	001110 1010	
95	100 10101	D21.4	101010 1101	101010 0010
B5	101 10101	D21.5	101010 1010	
37	001 10111	D32.1	111010 1001	000101 1001
D5	110 10101	D21.6	101010 0110	
24	001 00100	D4.1	1101011001	0010101001

A sample of the Control Characters (Appendix B, pg 137 of the user guide)

BC	101 11100	K28.5	001111 1010	110000 0101
1C	000 11100	K28.0	001111 0100	110000 1011
3C	001 11100	K28.1	001111 1001	110000 0110
FC	111 11100	K28.7	001111 1000	110000 0111