Lab4:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | Minimum | Typical | Maximum | Units | Description |
| FPGA\_C |  | 0(low) |  | V/logic | On Board Clock |
| S0 |  | 0(low) |  | V/logic | On Board Button, for reset |
| S1 |  | 0(low) |  | V/logic | On Board Button, switches to right shift |
| Seg\_1 |  | 0(low) |  | V/logic | Digit 1 select |
| Seg\_2 |  | 0(low) |  | V/logic | Digit 2 select |
| Seg\_3 |  | 0(low) |  | V/logic | Digit 3 select |
| Seg\_4 |  | 0(low) |  | V/logic | Digit 4 select |
| A |  | 0(low) |  | V/logic | A segment Out |
| B |  | 0(low) |  | V/logic | B segment Out |
| C |  | 0(low) |  | V/logic | C segment Out |
| D |  | 0(low) |  | V/logic | D segment Out |
| E |  | 0(low) |  | V/logic | E segment Out |
| F |  | 0(low) |  | V/logic | F segment Out |
| G |  | 0(low) |  | V/logic | G segment Out |

This system shifts digits left of right to create a scrolling effect; it needs to be powered via 5v to the USB port. S1 makes the digits shift right instead of left, S0 is reset.

Lab4b:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | Minimum | Typical | Maximum | Units | Description |
| FPGA\_C |  | 0(low) |  | V/logic | On Board Clock |
| S0 |  | 0(low) |  | V/logic | On Board Button, for reset |
| S1 |  | 0(low) |  | V/logic | On Board Button, X for Sequence Recogniser |
| S2 |  | 0(low) |  | V/logic | On Board Button, Clock for Sequence Recogniser |
| Seg\_1 |  | 0(low) |  | V/logic | Digit 1 select |
| Seg\_2 |  | 0(low) |  | V/logic | Digit 2 select |
| Seg\_3 |  | 0(low) |  | V/logic | Digit 3 select |
| Seg\_4 |  | 0(low) |  | V/logic | Digit 4 select |
| A |  | 0(low) |  | V/logic | A segment Out |
| B |  | 0(low) |  | V/logic | B segment Out |
| C |  | 0(low) |  | V/logic | C segment Out |
| D |  | 0(low) |  | V/logic | D segment Out |
| E |  | 0(low) |  | V/logic | E segment Out |
| F |  | 0(low) |  | V/logic | F segment Out |
| G |  | 0(low) |  | V/logic | G segment Out |

This system uses a sequence recogniser to select either Hex counting or BCD counting. If x is 0 for two clock cycles it will start counting in BCD, if x is high for two clock cycles is will start counting in hex, any other combination will end up at state 0, no counting, and any clock cycles from counting states will go to state 0. S1 controls x and S2 controls clock cycles. S0 is reset, the system requires 5v via the USB connector.