Design Challenge

Use ADC over I2C to CPLD to drive LED's

CoolRunner II CPLD can drive 8mA per pin as per app note:

https://www.xilinx.com/support/documentation/application_notes/xapp805.pdf

All prices are in USD.

Index	Quantity	Image	Part Number	Description	Customer Reference	Available Quantity	Backorder Quantity	Unit Price	Extended Price
☒ 1	1		DSC6111CI1A-016.0000-ND	ULTRA-LOW POWER,MEMS OSCILLATOR,		1 Immediate	0	0.87000	$0.87
☒ 2	1		122-1412-ND	IC CPLD 32MC 5.5NS 32QFN		1 Immediate	0	1.40000	$1.40
☒ 3	1		576-3193-1-ND	IC REG LDO 3.3V 0.15A SC70-5		1 Immediate	0	0.12000	$0.12
☒ 4	1		576-3181-1-ND	IC REG LDO 1.8V 0.15A SC70-5		1 Immediate	0	0.12000	$0.12
☒ 5	1		MCP3021A5T-E/OTCT-ND	IC ADC 10BIT 2.7V 1CH SOT23-5		1 Immediate	0	1.10000	$1.10
☒ 6	16		SML-D12U1WT86CT-ND	MINI-MOLD CHIP LED (IVRANK REDUC		16 Immediate	0	0.16200	$2.59
☒ 7	16		311-1.0KGRCT-ND	RES SMD 1K OHM 5% 1/10W 0603		16 Immediate	0	0.01100	$0.18
☒ 8	1		PTV112-4420A-B103-ND	POT 10K OHM 1/20W CARBON LINEAR		0 Immediate	1 Lead Time	1.26000	$1.26
							Subtotal		$7.64
							Shipping		Estimate
							Total		unknown

CONN_01X05
P1
+5V
GND
+5V
C1
U1
3V3
TO_SOT_Packages_SMD LP2951-33
VIN
GND
OUT
GND
C2
+3.3V

DUAL_POT
RV1
+3.3V
GND
C
C4
GND
+3.3V

MCP3021
U3
VDD
VSS
A_IN
SCL
SDA

+5V
U2
1V8
TO_SOT_Packages_SMD LP2951-33
VIN
GND
OUT
GND
C6
C5
+3.3V
C6
GND
+1V8
+1V8

L1
L3
L5
L7
L2
L4
L6
L8

IO
IO
VAUX
IO
IO
GND
VCCIO1
+3.3V
TDI
TMS
TCK
GND
VCC
INPUT
XC2C32A
U4
IO
IO
IO
IO
VCCIO2
GND
TDO
L9
L10
L11
L12
L13
+3.3V
GND
TDO
TDI
TMS
TCK

IO
IO
IO
IO
IO
IO

+1V8
CLK
L14
GND
L16
L15

GND
DSC61xxx
U5
STBY
VDD
GND
OUT
CLK
+3.3V

+3.3V
D16
LED
RL6
R
L16
R15
L15
RL4
L14
RL3
L13
RL2
L12
RL1
L11
R10
L10
R9
L9
R8
L8
R7
L7
R6
L6
R5
L5
R4
L4
R3
L3
R2
L2
R1
L1