

System	Part Description	Manufacturer	MFG Part #	Distributor	Cost/Unit	System Quantity	Redundancy Quantity	Total Cost	Datasheet/Notes
Friendly Interrogator Unit	MSP430F2274IDAR Microcontroller	Texas Instruments	MSP430F2274IDAR	Digi-Key Electronics	\$5.36	1	1	\$10.72	http://www.digikey.com/product-detail/en/MSP430F2274IDAR/296-21439-1-ND/1287966
	KH3 315MHz R.F. Receiver/Decoder	Linx	RXM-315-KH3	Digi-Key Electronics	\$14.43	1	1	\$28.86	http://www.digikey.com/product-detail/en/RXM-315-KH3/RXM-315-KH3-ND/5019820
	Splatch Planar PCB Mount Antenna	Linx	ANT-315-SP	Digi-Key Electronics	\$2.26	1	1	\$4.52	http://www.digikey.com/product-detail/en/ANT-315-SP/ANT-315-SP-ND/340125
	5mW 650nm Red TTL Laser	Civil Laser	N/A	Civil Laser	\$39.00	1	0	\$39.00	http://www.civillaser.com/635nm-5mw-red-laser-module-focusable-dot-td-laser-module-locator-16x60mm-p-276.html
	AAT1217 Voltage Boost Converter	Skyworks	AAT1217ICA-3.3-T1	Digi-Key Electronics	\$0.49	1	2	\$1.47	http://www.digikey.com/product-detail/en/AAT1217ICA-3.3-T1/863-1496-1-ND/4246188
	8-Pin DIP Switch	TE Connectivity Alcoswitch Switches	1-1825058-9	Digi-Key Electronics	\$0.89	1	1	\$1.78	http://www.digikey.com/product-detail/en/te-connectivity-alcoswitch-switches/1-1825058-9/1-1825058-9-ND/1021551
	32.768 kHz Crystal Oscillator	ECS Inc.	ECS-3X8	Digi-Key Electronics	\$0.42	1	1	\$0.84	http://www.digikey.com/product-detail/en/ECS-3X8/X801-ND/17116
	Indicator LED	Lite-On Inc.	LTL-1BEHJ	Digi-Key Electronics	\$0.36	1	1	\$0.72	http://www.digikey.com/product-detail/en/lite-on-inc/LTL-4221N/160-1139-ND/214530
	Surface Mount AA Battery Holder	MPD (Memory Protection Devices)	BK-53-TR	Digi-Key Electronics	\$0.83	2	2	\$3.32	http://www.digikey.com/product-detail/en/mpd-memory-protection-devices/BK-53-TR/BK-53-TR-ND/3029218
	Slider Switch	C&K Components	JS202011CQN	Digi-Key Electronics	\$0.41	1	1	\$0.82	http://www.digikey.com/product-detail/en/c-k-components/JS202011CQN/401-2001-ND/1640097
	130 Resistor	-	-	-	\$0.05	10	20	\$1.50	Can get parts from ECE Shop, cost calculated based on new components
	33k Resistor	-	-	-	\$0.10	1	2	\$0.30	Can get parts from ECE Shop, cost calculated based on new components
	100M Resistor	-	-	-	\$0.10	2	4	\$0.60	Can get parts from ECE Shop, cost calculated based on new components
	10k Resistor	-	-	-	\$0.10	2	4	\$0.60	Can get parts from ECE Shop, cost calculated based on new components
	1.02M Resistor	-	-	-	\$0.10	1	2	\$0.30	Can get parts from ECE Shop, cost calculated based on new components
	604k Resistor	-	-	-	\$0.10	1	2	\$0.30	Can get parts from ECE Shop, cost calculated based on new components
	4.7 u Capacitor	-	-	-	\$0.10	2	4	\$0.60	Can get parts from ECE Shop, cost calculated based on new components
	22 p Capacitor	-	-	-	\$0.10	2	4	\$0.60	Can get parts from ECE Shop, cost calculated based on new components
	4.7 u Inductor	-	-	-	\$0.10	1	2	\$0.30	Can get parts from ECE Shop, cost calculated based on new components
Total Friendly Interrogator System Cost:								\$97.15	
System	Part Description	Manufacture	MFG Part #	Distributor	Cost/Unit	System Quantity	Redundancy Quantity	Total Cost	Datasheet/Notes
Friendly Target Unit	MSP430F2274IDAR Microcontroller	Texas Instruments	MSP430F2274IDAR	Digi-Key Electronics	\$5.36	1	1	\$10.72	http://www.digikey.com/product-detail/en/MSP430F2274IDAR/296-21439-1-ND/1287966
	KH3 315 MHz R.F. Transmitter/Encoder	Linx	TXM-315-KH3	Digi-Key Electronics	\$12.16	1	0	\$12.16	http://www.digikey.com/product-detail/en/linx-technologies-inc/TXM-315-KH3/TXM-315-KH3-ND/4772472
	Splatch Planar PCB Mount Antenna	Linx	ANT-315-SP	Digi-Key Electronics	\$2.26	1	1	\$4.52	http://www.digikey.com/product-detail/en/ANT-315-SP/ANT-315-SP-ND/340125
	AAT1217 Voltage Boost Converter	Skyworks	AAT1217ICA-3.3-T1	Digi-Key Electronics	\$0.49	2	2	\$1.96	http://www.digikey.com/product-detail/en/AAT1217ICA-3.3-T1/863-1496-1-ND/4246188
	MAX680 +5V to ±10V Voltage Converter	Maxim	MAX680CSA	Digi-Key Electronics	\$5.55	1	1	\$11.10	http://www.digikey.com/product-detail/en/maxim-integrated/MAX680CSA%2B/MAX680CSA%2B-ND/948152
	Low Power, Low Noise Op Amp	ON Semiconductor	MC33178PG	ON Semiconductor	\$0.50	1	1	\$1.00	http://www.onsemi.com/PowerSolutions/product.do?id=MC33178
	PIN Photodiodes	TT Electronics/Optek Technology	365-1622-ND	Digi-Key Electronics	\$9.07	4	2	\$54.42	http://www.digikey.com/product-detail/en/tt-electronics-optek-technology/OP913WSL/365-1622-ND/1636774
	Surface Mount AA Battery Holder	MPD (Memory Protection Devices)	BK-53-TR	Digi-Key Electronics	\$0.83	2	2	\$3.32	http://www.digikey.com/product-detail/en/mpd-memory-protection-devices/BK-53-TR/BK-53-TR-ND/3029218
	32.768 kHz Crystal Oscillator	ECS Inc.	ECS-3X8	Digi-Key Electronics	\$0.42	1	1	\$0.84	http://www.digikey.com/product-detail/en/ECS-3X8/X801-ND/17116
	50 k Resistor	-	-	-	\$0.05	4	10	\$0.70	Can get parts from ECE Shop, cost calculated based on new components
	1 M Resistor	-	-	-	\$0.05	1	2	\$0.15	Can get parts from ECE Shop, cost calculated based on new components
	1.02 M Resistor	-	-	-	\$0.05	1	1	\$0.10	Can get parts from ECE Shop, cost calculated based on new components
	640 k Resistor	-	-	-	\$0.05	1	1	\$0.10	Can get parts from ECE Shop, cost calculated based on new components
	332 k Resistor	-	-	-	\$0.05	1	1	\$0.10	Can get parts from ECE Shop, cost calculated based on new components
	75 p Capacitor	-	-	-	\$0.05	4	10	\$0.70	Can get parts from ECE Shop, cost calculated based on new components
	4.7 u Capacitor	-	-	-	\$0.05	2	5	\$0.35	Can get parts from ECE Shop, cost calculated based on new components
	4.7 u Inductor	-	-	-	\$0.05	4	4	\$0.40	Can get parts from ECE Shop, cost calculated based on new components
Total Friendly Target System Cost:								\$101.19	
Name	Hourly Rate	Total Hours Invested							
Eric Meyers	\$31.25	225	\$17,578.13						
Noah Prince	\$31.25	225	\$17,578.13	Subtotal (Parts and Equipment) :					
Total Labor Cost:				\$35,156.25					
Subtotal (Labor):								\$35,156.25	
Total Cost and Labor:								\$35,455.78	