

NanoArc ACE RevA - Missing Items BOM (Linked) - Revision 2

Adds removable DIP sockets, correctly sized perfboards, and lead-free solder to the previously issued missing-items list. Prices are planning snapshots in CAD and should be rechecked at checkout.

Planning total: CAD \$113.70 before tax; CAD \$128.48 after 13% HST. Conditional items are excluded.

Pri.	Supplier	Qty	Part / listing	SKU / ASIN	Description	Ext. CAD	Action
Required	DigiKey	2	CD74HC221E	296-9187-5-ND	Dual non-retriggerable monostable, 16-PDIP; independent maximum pulse clamp fixture	\$3.46	Add new line
Required	DigiKey	10	OBL7IW60D-WW	1516-QBL7IW60D-WW-ND	3 mm white diffused through-hole talkback LED; 8 fitted + 2 spares	\$6.81	Change existing qty 1 to qty 10
Required	DigiKey	10	MFR-25FBF52-1K	1.00KXBK-ND	1 kOhm, 1%, 1/4 W axial metal-film resistor	\$0.63	Add new line
Required	DigiKey	10	MFR-25FBF52-4K7	MFR-25FBF52-4K7-ND	4.7 kOhm, 1%, 1/4 W axial metal-film resistor; I2C pull-ups and logic pull resistors	\$0.63	Add new line
Required	DigiKey	10	MFR-25FBF52-100K	100KXBK-ND	100 kOhm, 1%, 1/4 W axial metal-film resistor	\$0.63	Add new line
Required	DigiKey	20	SR205C104KAR	478-3187-ND	100 nF, 50 V, X7R radial ceramic; local IC decoupling	\$12.20	Add new line
Required	DigiKey	10	860020472003	732-8820-1-ND	10 uF, 25 V radial aluminum electrolytic; local rail bulk/branch decoupling	\$1.50	Add new line
Required	DigiKey	5	ECA-1EM101B	10-ECA-1EM101BCT-ND	100 uF, 25 V radial aluminum electrolytic; board-level bulk capacitance	\$2.40	Add new line
Required	DigiKey	20	1N4148	1N4148FS-ND	100 V, 200 mA DO-35 through-hole small-signal switching diode	\$1.66	Add new line
Recommended	DigiKey	1	JWS11RCA	JWS11RCA-ND	Red maintained SPST panel rocker for HARD SAFE; distinct from the on-hand MTS-1 ARM toggle	\$12.99	Add new line; check lead time
Required	Amazon.ca	1	ELEGOO 120-piece Dupont jumper-wire kit	ASIN B01EV70C78	40 male-male, 40 male-female and 40 female-female, 20 cm	\$12.99	Add to Amazon list
Convenience	DigiKey	1	ICS-314-T	2057-ICS-314-T-ND	14-pin DIP socket for MCP6004-I/P	\$0.86	Add new line
Convenience	DigiKey	2	ICS-316-T	2057-ICS-316-T-ND	16-pin DIP sockets for MCP3208-CI/P and CD74HC221E	\$3.18	Add new line
Convenience	DigiKey	1	ICS-318-T	2057-ICS-318-T-ND	18-pin DIP socket for ULN2803A	\$1.47	Add new line
Convenience	DigiKey	1	ICS-320-T	2057-ICS-320-T-ND	20-pin DIP socket for SN74HC573AN fault latch	\$1.95	Add new line
Convenience	DigiKey	3	ICS-628-T	2057-ICS-628-T-ND	28-pin, 0.6-inch DIP sockets for the three MCP23017-E/SP expanders	\$3.78	Add new line
Required for soldered prototype	Amazon.ca	1	ELEGOO 32-piece double-sided perfboard kit	ASIN B072Z7Y19F	FR4, plated-through 2.54 mm pads; sizes 2x8, 3x7, 4x6, 5x7 and 7x9 cm	\$17.99	Add to Amazon list
Required for soldered prototype	DigiKey	1	SMDSWLF.031 2OZ	SMDSWLF.0312OZ-ND	Lead-free SAC305, 0.79 mm, no-clean flux-core solder wire, 56.7 g spool	\$28.57	Add new line

Perfboard allocation

Board size	Planned RevA use
7 x 9 cm (2 included)	Machine I/O / analog board; panel I/O board
5 x 7 cm (7 included)	Nano Every carrier; safety/fault board; power/protection board
4 x 6, 3 x 7, 2 x 8 cm	Small interface fixtures, SOIC-adaptor carriers, loopback boards, and test jigs

Notes

- The sockets are low-cost open-frame, through-hole parts. They make the expensive or easily damaged ICs removable during perfboard development.

- The perfboard kit is preferred over one large board because RevA is explicitly modular. Separate boards make debugging, rework, and later PCB replacement easier.
- The selected solder is lead-free SAC305, 0.79 mm diameter, with an internal no-clean flux core. It is suitable for through-hole work and the SOIC-to-DIP adapters already on the Amazon list.
- The Antec PSU remains uncredited salvage until each recovered part is identified and tested.

Conditional items

Condition	Part	Qty	Link
Only if blue 1J63 parts are not 1 uF	SR305E105MAR / 478-3195-ND	5	OPEN
Only if PSU salvage does not provide enough wire	CBAZY 22 AWG solid hookup-wire kit	1	OPEN