INNOVONICS TRUMPCARD - INSTRUCTIONS

Trumpcard was originally designed as a mechanical and electrical link between the Jupiter Ace and ZX peripherals. To maintain flexibility and programmability the two connecting edges are quite separate. In this way the constructor can colour code and interrupt the signal lines as he pleases, both for experimental and permanent applications.

With the exception of the chip select lines, $\overline{WE}$ on the ACE and RAM/ROM $\overline{C.S.}$ on the ZX 81, both computers share the same bus albeit in a different configuration.

STANDARD CONSTRUCTION - GENERAL PURPOSE, ALL LINES CONNECTED

Trumpcard topside - Side A has the ZX polarising slot at top left. Side B is underside.

Connector Preparation

1. Bend connector pins outwards at their midpoint approx. 30°
2. Bend pins back to centre at their base, such that pinends leave just enough room to accept the Trumpcard PCB.
3. Ensuring pin ends are flat against PCB tracks, insert card and align right most pins (adjacent to connector polarising key) with Track 2 Side A.

Assembly

0.6mm single core connecting wire is recommended. Multicore wire is prone to causing shorts after soldering but can be used if necessary. If thin telephone wire is used, all lines can be routed through holes, otherwise construct as per instructions below.

1. Slide connector pins approx. 3mm over PCB tracks on the unslotted edge of the card leaving sufficient room to solder connecting wires. Check that the top row of pins is well clear of the bottom row, particularly at their bending point.
2. Taking care that the card lies parallel to connector body, tack solder the outermost pins on both sides to the PCB. This facilitates the soldering of the remaining pins, which should be held flush to the PCB tracks for a neater finish.
3. Prepare interconnection wires by paring off 3mm insulation at both ends.
4. Following the interconnection tables, assemble the underside first, starting at ACE 2B and working thru to 22B. 15B to 19B will need to be threaded under some of the control lines, in order to work through the tracks consecutively. Leave at least 4mm of track free on the ZX side to allow the peripheral to seat properly when applied.
5. Turn the assembly over, soldering from ACE 23A to 3A consecutively. Only 10T passes through a hole. Thread the remaining wires between connector body and PCB over its edge to side B.

N.B. Check your connections and inspect work for solder splashes.

TAKE PARTICULAR CARE TO CONNECT THE 9V LINE ACE 21A/ZX 22B CORRECTLY.

TTL chips carry a maximum 7V0 rating !!

TESTING

Having checked your wiring thoroughly, attach your peripheral to the card, then holding the card attach it to the ACE's Expansion port. Ensure both peripheral and ACE are on a stable flat surface. N.B. The ACE PCB polarising slot is slightly wider than the connector key itself. With the keyboard facing you and Trumpcard attached, push the connector firmly to the right of the slot - you may hear it click home. Check this point, as a perfectly wired card may not function if connector pins and ACE PCB tracks are slightly misaligned. Screen white-outs or a scrolling cursor indicate a poor or wrong connection.

I/O boards, D/A's, A/D's etc will require homegrown software to test them.

RAMpacks of 16, 32, and 64K will return unsigned RAMTOPS of 32768, 49152 and 65536 (screen display -32768, -16384, Ø respectively) by typing 15384 @ . which is the ACE's RAMTOP system variable. If the machine crashes, switch off, make necessary adjustments and switch on again. Unless the 9V line is wrongly connected, it is very unlikely that either the ACE or your peripheral is damaged. Check your assembly closely and all should be well.

ALTERNATIVE APPLICATIONS

Trumpcard need not be used only on the ACE, similarly, the ZX tracks can be used to attach other types of connectors. E.G. Ribbon cable 0.05 and 0.1 pitch/ PCB header pins straight or right-angled on 0.1 centres/ wire wrap DIL sockets 0.3" and 0.6". Even 'D' Type subminiature Sockets/Plugs with solder bucket connectors will slip snugly over the PCB edge. The buckets themselves will have to be wired separately - they are not on the same pitch as the PCB tracks.

WIRING TABLE A = Topside B = Underside

ACE	Wire Length	ZX	Route	Signal	ACE	Wire Length	ZX	Route	Signal
3A	2¼"	7A		D6	1B		-	-	-
4A	2¼"	5A		D1	2B	2"	11A		INT
5A	2¼"	17B	Edge	AØ	3B	2"	12A		NMI
6A	2¼"	5B	"	A7	4B	2"	13A	H3	HALT
7A	2¼"	6B	"	A8	5B	2"	14A	"	MREQ
8A	2¼"	7B	"	A9	6B	2"	15A	"	IORQ
9A	2¼"	8B	"	A10	7B	2"	16A	"	RD
10A	2"	15B	H2	A2	8B	2"	17A	"	WR
11A	1¾"	8A		D5	9B	2"	18A	H2	BUSAK
12A	1¾"	9A		D3	10B	2"	19A	"	WAIT
13A	1¾"	10A		D4	11B	2"	20A	"	BUSRQ
14A	2¼"	13B	Edge	A15	12B	2"	21A	"	RESET
15A	2¼"	12B	"	A14	13B	2"	22A	H3	M1
16A	2¼"	11B	"	A13	14B	2"	23A	"	RFSH
17A	2¼"	10B	"	A12	15B	1¾"	4B		A6
18A	2¼"	9B	"	A11	16B	1¾"	3B		A5
19A	2¼"	18B	"	ØCLK	17B	1¾"	2B		A4
20A	2¼"	23B	"	5V	18B	2"	14B		A3
21A	2¼"	22B	"	9V	19B	2"	16B		A1
22A	-	-	-	-	20B	2¾"	4A	H1	DØ
23A	2¼"	19B+20B	"	0V	21B	2¾"	6A		D2
					22B	2¾"	1A		D7

Hole 1 is at left when card is viewed from top.
Trumpcard numbering system is independent of any ZX81 convention.