

UPDATE INFORMATION

These adapter cables allow easy connection between Leonardo and most computers, terminals and printers equipped with RS-232C interfaces. They fit nicely in Leonardo's OSA compartment and require no battery as they draw power from the Leonardo.

Adapter Ia is suitable for most printers and computers not in the list for Adapter II and Adapter III. It may be connected to non-standardised RS-232C interfaces with suitable modifications as necessary.

Adapter II is ready to connect with any Apple II series computer. Just plug in.

Adapter III connects and runs with an IBM PC or XT or AT immediately. It is specially designed for IBM. It is also suitable for the Atari ST and the Amstrad/Schneider CPC 464 and 6128.

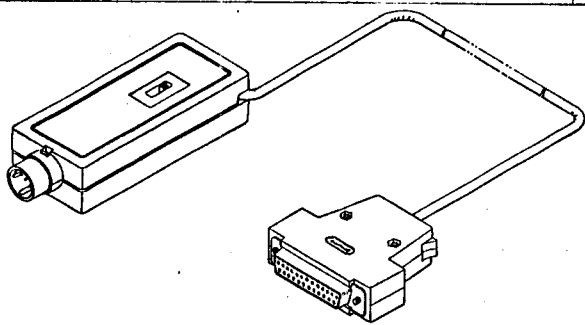
Adapter IV is a special cable to connect a Leonardo to the Commodore C-64, C-128 and VIC 20.

Adapter I model a

590

(Universal model with TxD/RxD reverse switch).

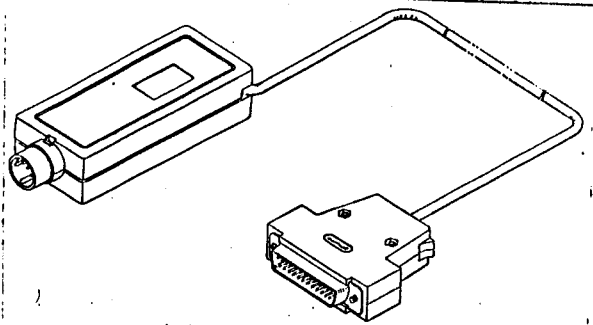
For most serial printers, other computers/terminals, typewriters equipped with RS-232C serial interfaces.



Adapter II

592

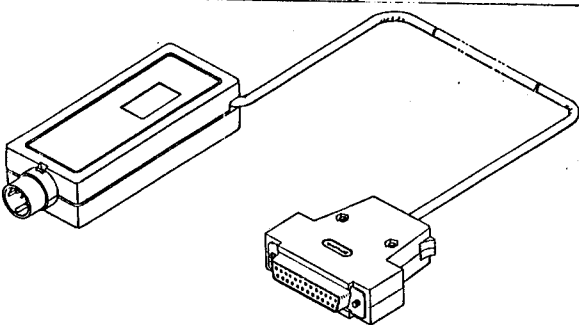
Directly usable with Apple II Series with Super Serial Card.



Adapter III

593

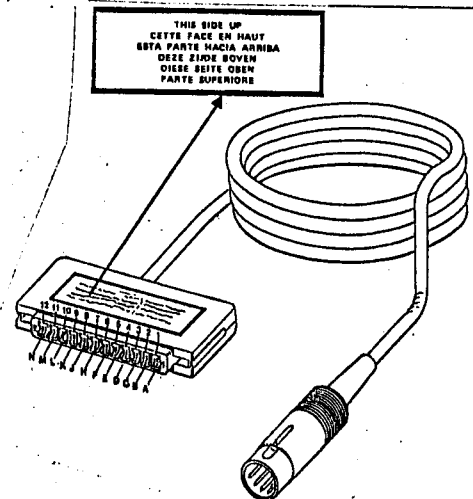
Directly usable with IBM PC series and compatibles, Amstrad/Schneider Atari ST Series.



Adapter IV

591

Directly usable with Commodore C-64, C-128, VIC-20 computers.



Specifications

	Adapter Ia	Adapter II	Adapter III	Adapter IV
Input/Output Leonardo end	Leonardo-type 5 pin DIN plug pin 1. TxD 2. GND 3. RxD 4. V+ 5. +5V V+ : unregulated voltages from Leonardo's adapter.	Leonardo-type 5 pin DIN plug pin 1. TxD 2. GND 3. RxD 4. V+ 5. +5V	Leonardo-type 5 pin DIN plug pin 1. TxD 2. GND 3. RxD 4. V+ 5. +5V	Leonardo-type 5 pin DIN plug pin 1. TxD 2. GND 3. RxD
Computer/printer end	DB-25S socket pin 2. RxD 3. TxD 7. GND	DB-25P plug pin 2. RxD 3. TxD 7. GND	DB-25S socket pin 2. RxD 3. TxD 7. GND pin 4-5 shorted pin 6-8-20-22 shorted together	Card-edge socket (12x2 circuit) B-C. RxD M. TxD N. GND
Voltage swing	+/- 8V	+/- 8V	+/- 8V	TTL compatible levels
Weight	0.25 kg	0.25 kg	0.25 kg	0.15 kg
Cabinet size	95x40x23mm	95x40x23mm	95x40x23mm	—

For IBM users, you will need a communication program such as COMM. BAS. In some cases, this has been superseded by new program. If you cannot obtain this program from your DOS disk then the following program should be used.

```

10      REM      TERMINAL PROGRAM FOR IBM-LEONARDO COMMUNICATION
20      REM
30      DEFINT A-Z
40      KEY OFF
50      CLS
60      CLOSE
70      OPEN "COM1:1200,N,8,1,CD" AS #1
80      OPEN "SCRN:" FOR OUTPUT AS #2
90      LOCATE ,,1
100     B$ = INKEY$
110     IF B$ <> "" THEN PRINT #1,B$; : PRINT #2,B$;
120     IF EOF(1) THEN 100
130     A$ = INPUT$(LOC(1),#1)
140     LF = 0
150     LF = INSTR(LF+1,A$,CHR$(10))
160     IF LF > 0 THEN MID$(A$,LF,1) = " " : GOTO 150
170     PRINT #2,A$;
180     GOTO 100

```

Doc. No. : VCON-PG-022

Rev. : 0

Date : 25 September 1987

RS-232C ADAPTER IA, II, III GENERAL PRODUCT SPECIFICATION

A. Current Consumption : At V+ terminal with V+ = 8.0V
10.0mA typical
12.5mA max.

B. Power Consumption : 80mW typical
100mW max.

ORIGINAL

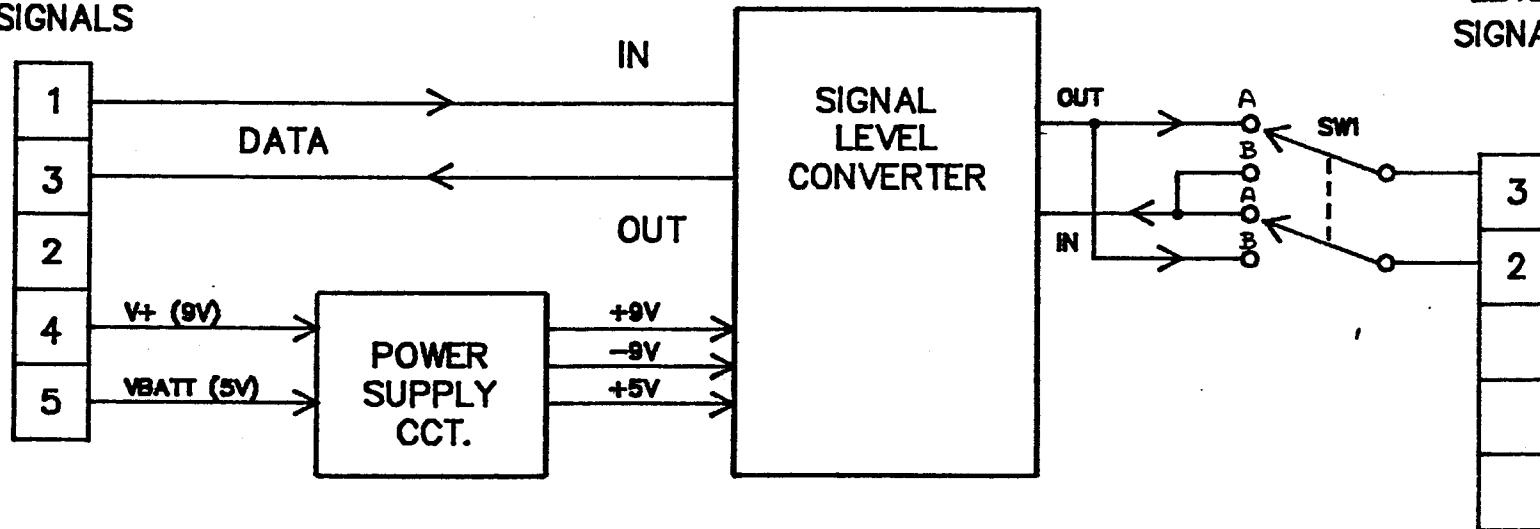
REVISIONS		
DATE	DESCRIPTION	ECN NO.

(5 PINS
DIN PLUG)

(DB-25S
SOCKET)

TTL
LEVEL
SIGNALS

RS232C
LEVEL
SIGNALS



APPROVALS	DATE	SciSys-W Ltd.	
DRAWN Ed.W	9/9/87	SCHEMATIC DRAWING	
R.E. <i>Ed.W.</i>	24.9.87	TITLE:	RS-232C ADAPTOR IA
P.I.E. <i>Ed.W.</i>	25.9.87	590	BLOCK DIAGRAM
Q.A. <i>Ed.W.</i>	25.9.87	DWG. NO. VCON - PE - 021	REV. 0

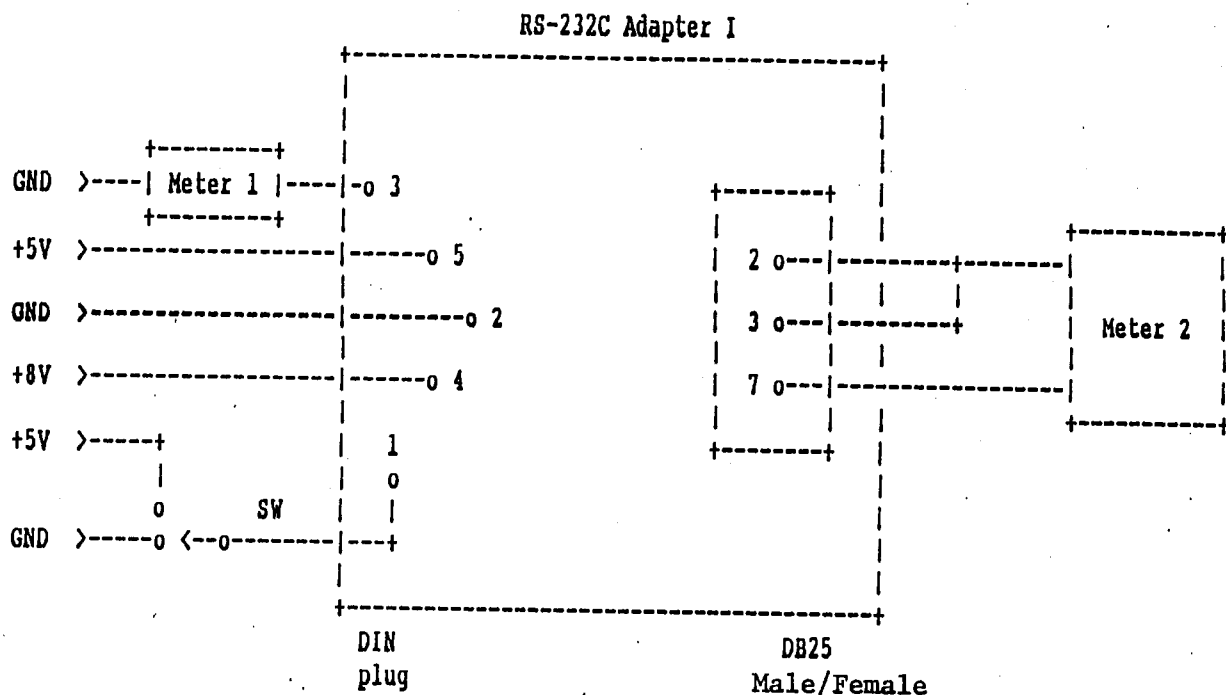
VCON
IN CIRCUIT TEST (Troubleshooting)

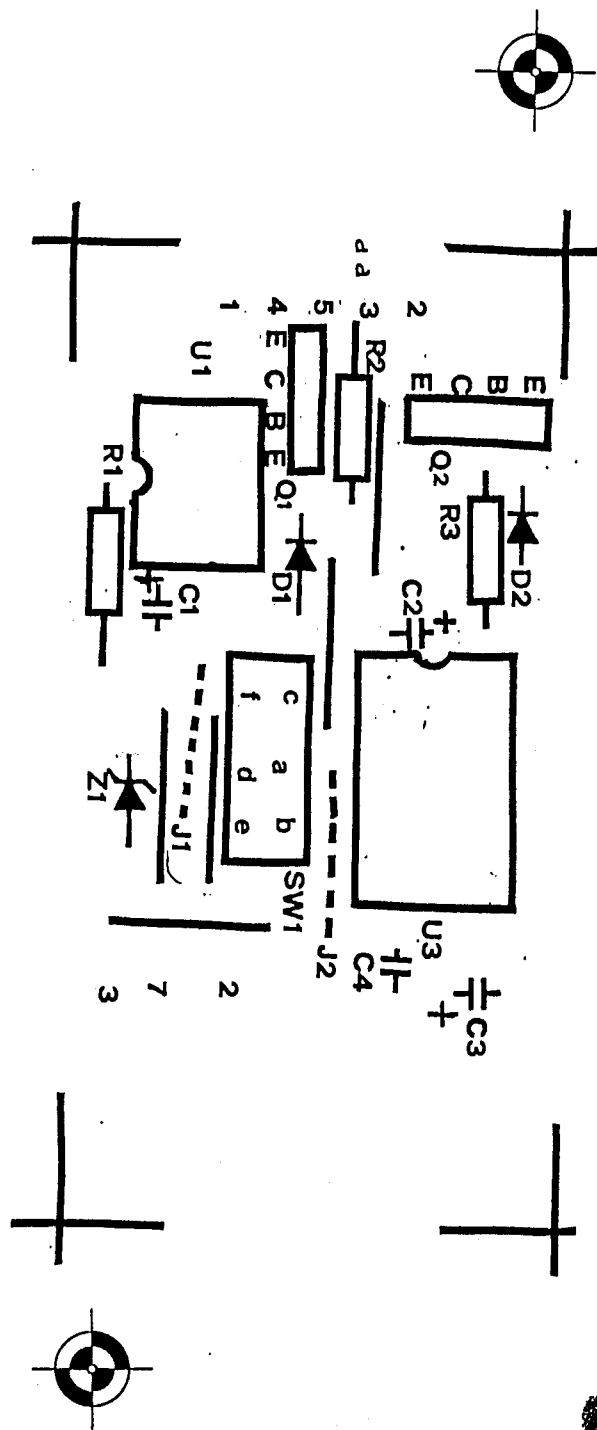
1. Purpose: To test the voltage conversion.
2. Testing procedure:
 - Toggle SW to +5V.
 - Note down meter 1 and 2 readings.
 - Toggle SW to GND.
 - Note down meter 1 and 2 readings
 - All readings should confirm to the following table.


3. Readings:

Switch	Reading	
SW	meter 1	meter 2
+5V	4 to 5V.	-8 to -4.5V.
GND	0 to 0.5V.	+5.5 to +9V.

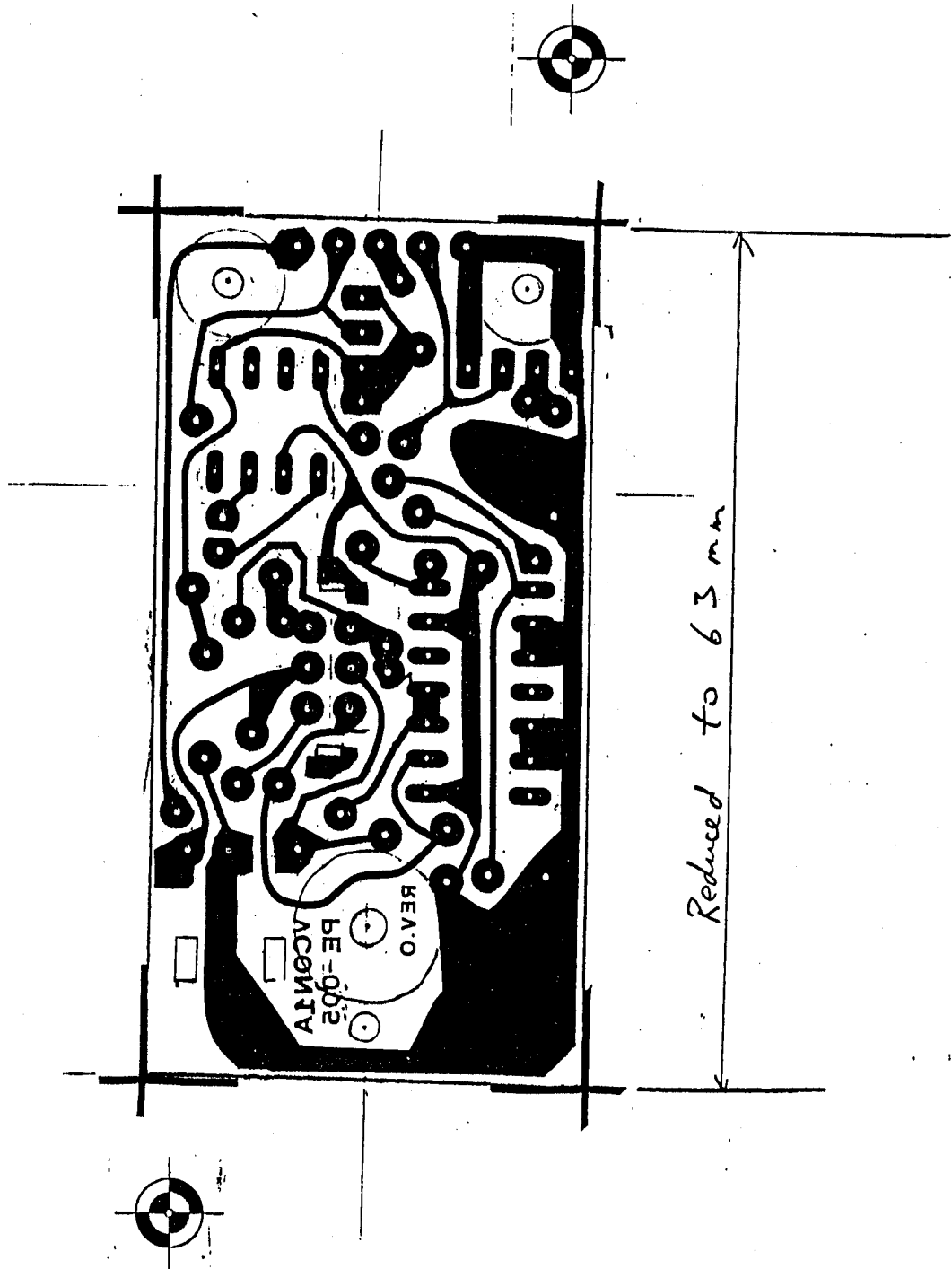
4. Connection (VCON-PE-013):






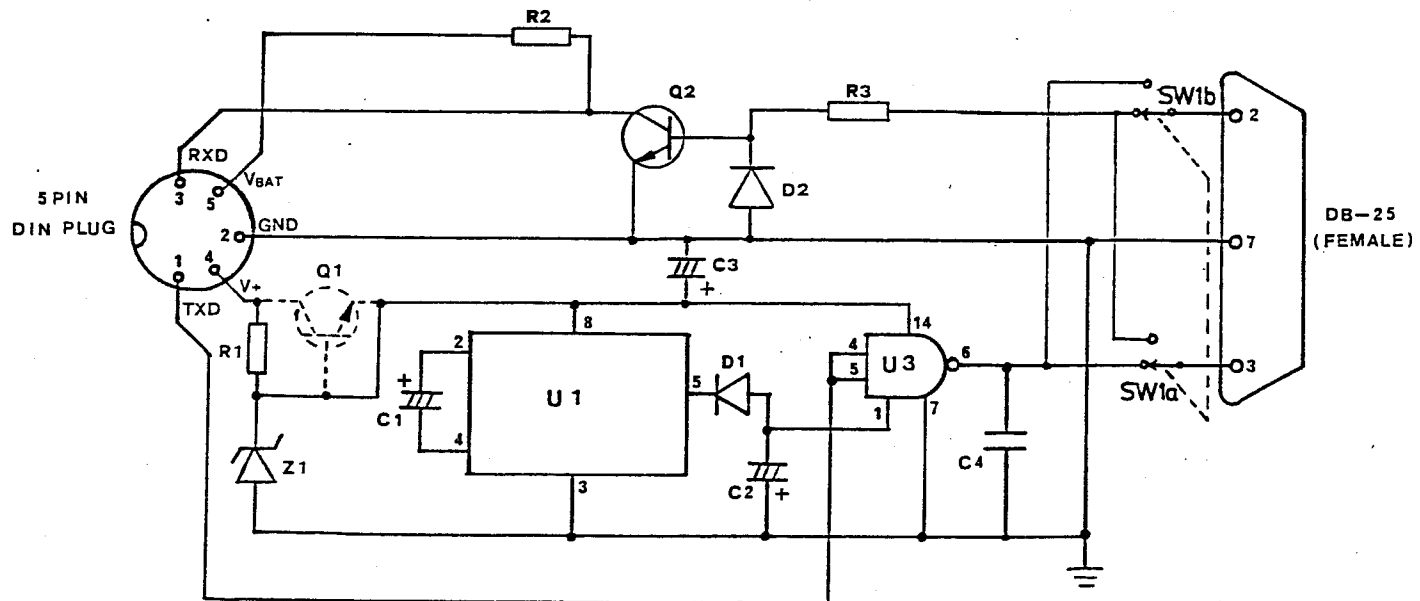
 SciSys-W Ltd.		
TITLE: VCON 1A PCB Layout (Component side)		
DWG. NO. VCON 1A-P2-007 REV. 0		
UNIT $\frac{1}{16}$	SCALE 2:1	TOL. $\frac{1}{16}$
MATERIAL $\frac{1}{16}$		DATE 17/6/87.
FINISH $\frac{1}{16}$		DRAWN <i>chem</i>
APPD. BY	ENG.	Q.A.

Component layout



 SciSys-W Ltd.		
TITLE: VCON 1A PCB layout (Component side)		
DWG. NO. VCON 1A - PE - 005	REV. ϕ	
UNIT \pm	SCALE 2 = 1	TOL. \pm
MATERIAL \pm	DATE 17/6/87	
FINISH \pm	DRAWN <i>Cham</i>	
APPD. BY	ENG.	Q.A.

ORIGINAL



Q1 — OPTIONAL

		SciSys-W Ltd.	
TITLE: ADAPTOR 1A			
590 SCHEMATIC DIAGRAM			
DWG. NO. VCON-PE-017		REV. 0	
UNIT <i>✓</i>	SCALE <i>✓</i>	TOL. <i>✓</i>	
MATERIAL <i>✓</i>		DATE 2-6-87	
FINISH <i>✓</i>		DRAWN <i>T. Jones</i>	
REV	REVISION	DATE	APPD BY ENG. <i>T.G. Jones</i> 2.A

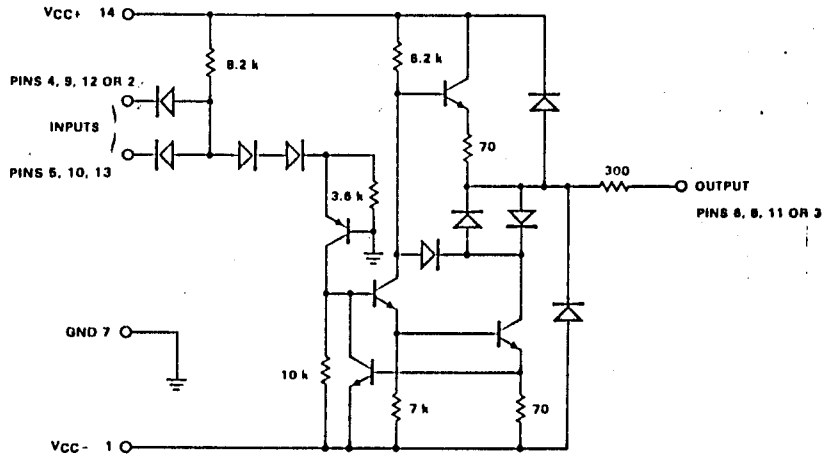
ADAPTER IA PARTLIST
 CREATED 14 MAY 87
 SCHEMATIC DWG : VCON-PE-017
 LOGIC PCB NO. : VCON1A-PE-005

REV. 4
 UPDATED 2 SEP 87
 REV. 0
 REV. 0

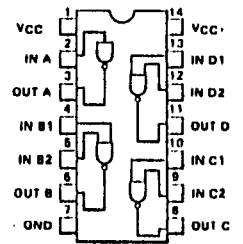
ITEM DESCRIPTION	QTY.	REFERENCE
*** LOGIC BOARD ASSEMBLY ***		
LOGIC PCB (S-SIDED, 63x32mm)	1	
1 I.C.: ICL7660	1	U1
1 1488	1	U3
1 TRANSISTOR NPN 9014	1	Q2
ZENER DIODE, 10V 1/2W	1	Z1
DIODE IN4148	2	D1,D2
RESISTOR (1/2W, +/-5%, C-FILM): 47	1	R1
RESISTOR (1/4W, +/-5%, C-FILM): 4K7	2	R2,R3
CAPACITOR:		
10uF/16V ELECT.	2	C1,C2
100uF/16V ELECT.	1	C3
0.0001uF CER.	1	C4
*** ELECTRO-MECHANICAL ACCESSORIES ***		
1 DB25 CONNECTOR (FEMALE) W/HOUSING & 1.5M 3-CORE NON-SHIELDING CABLE	1	
1 DIN PLUG (5 PIN)	1	
DIN PLUG CLAMPING PLATE	1	
STRANDED WIRE, AWG 28, 4mm STRIPPED & TINNED AT BOTH ENDS L=40mm (FOR DIN PLUG)	5	
L=30mm (FOR JUMPER)	2	
1 SWITCH INLAY	1	
CABLE TIE (4")	1	
BARE JUMPER WIRE L=12mm	3	
SCREWS (SELF-TAP, CROSS RECESS, BINDING HEAD, TYPE A):		
M2.6x8 (FOR CAB.)	1	
M2.6x8mm (FOR CLAMPING PLATE)	2	
SWITCH (2P2T) (PIC#SS22F04G5)	1	
*** PLASTIC ***		
1 PLASTIC SET:	1	
TOP CABINET	1	
BOTTOM CABINET	1	

μA 1488

CIRCUIT SCHEMATIC (1/4 OF CIRCUIT SHOWN)

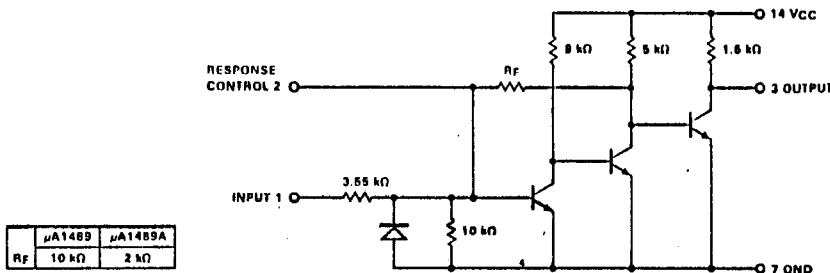


CONNECTION DIAGRAM
14-PIN DIP
(TOP VIEW)
PACKAGE OUTLINE 8A 9A
PACKAGE CODE D P

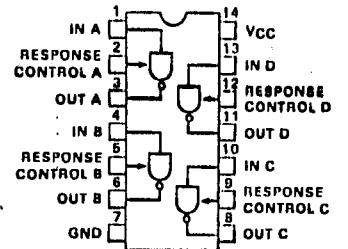


μA1489

CIRCUIT SCHEMATIC (1/4 OF CIRCUIT SHOWN)

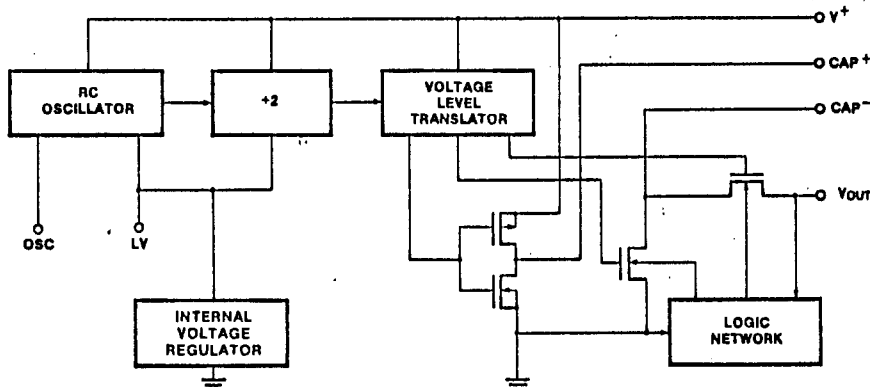


CONNECTION DIAGRAM
14-PIN DIP
(TOP VIEW)
PACKAGE OUTLINES 6A 9A
PACKAGE CODES D P

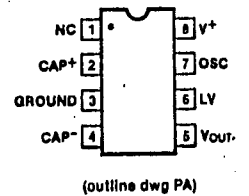


ICL 7660

BLOCK DIAGRAM



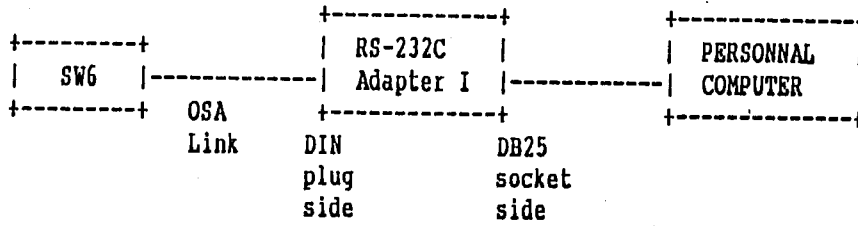
PIN CONFIGURATIONS



VC0N

Functional test procedure

1. Connect a Leonardo to a personal computer through the RS-232C adapter I as follows:



2. Open the Link with a terminal program as mentioned in Appendix A of the "The Link: Leonardo's OSA connection to computers and printers manual."
3. Type "Position" from your keyboard, you should see the initial board position on the screen if the adapter works properly.