VP-601
VP-611

ASCII Keyboards Parallel Output

INSTRUCTION MANUAL

L-982

RCA MicroComputer Products

Key / Output Character Table

Keyboard Key	0 0 *	0 1 X	0 X #	1 X X Control Shift U&L Case
A	a	A	A	SOH
B	b	B	B	STX
C	c	C	C	ETX
D	d	D	D	EOT
E	e	E	E	ENQ
F	f	F	F	ACK
G	g	G	G	BEL
H	h	H	H	BS
I	i	I	I	HT
J	j	J	J	LF
K	k	K	K	VT
L	l	L	L	FF
M	m	M	M	CR
N	n	N	N	SO
O	o	O	O	SI
P	p	P	P	DLE
Q	q	Q	Q	DC1
R	r	R	R	DC2
S	s	S	S	DC3
T	t	T	T	DC4
U	u	U	U	NAK
V	v	V	V	SYN
W	w	W	W	ETB
X	x	X	X	CAN
Y	y	Y	Y	EM
Z	z	Z	Z	SUB

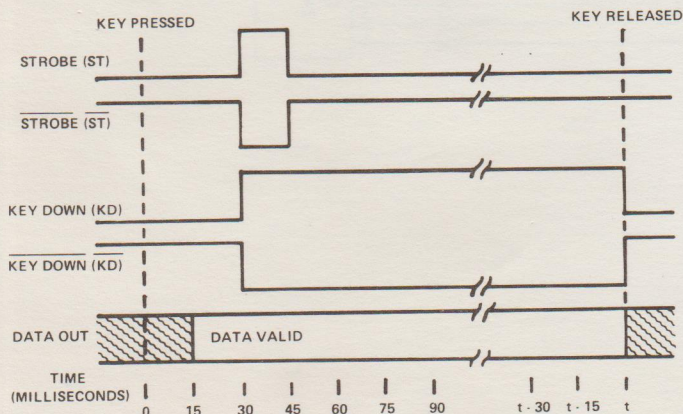| Keyboard Key	0 0 X	0 1 X	1 X X	Control Shift U&L Case
0	0	0	NUL	
1	1	!	NUL	
2	2	"	NUL	
3	3	#	NUL	
4	4	$	NUL	
5	5	%	NUL	
6	6	¢	NUL	
7	7	'	NUL	
8	8	(	NUL	
9	9	)	NUL	
			NUL	
:	:	*	NUL	
;	;	+	NUL	
,	,	<	FS	
-	-	=	GS	
.	.	>	RS	
/	/	?	US	
[	[	{	ESC	
\	\	¦	NUL	
]	]	}	NUL	
∧	∧	~	NUL	
DEL	DEL	_	DEL	
@	@	`	NUL	
SP	SP	SP	SP	
CR	CR	CR	CR	
LF	LF	LF	LF	
+	+	+	+	
*	*	*	*	
=	=	=	=	
ESC	ESC	ESC	ESC	
BS	BS	BS	BS	

1 - Key Pressed
0 - Key Not Pressed
X - Don't Care
* - Pin 4 Connected to Ground
# - Pin 4 Open

Timing Diagram

VP-601/VP-611 TIMING DIAGRAM
t = TOTAL TIME OF KEY PRESS
TIME SCALE APPROXIMATE

Connector — Rear View

MATING CONNECTOR: 3M PART
No. 3421-6020 OR EQUIVALENT

CAUTION: Inserting cable connector with power applied may cause permanent damage.

Character Set 128-character ASCII (102-character alphabetical upper-case-only selectable by user).

Keyboard:

VP-601 – 58-key typewriter format. Includes two user-definable keys (switch closures).

VP-611 – Same as above plus 16-key numeric entry keypad.

Rollover Two-key.

User Definable Keys Two. SPST (30 V, 0.1 A, 1 W max.)

Audio 1 kHz nom. 8-ohm speaker and volume control.

Power +5 VDC ± 5%, 85 mA nom.

Data 7-bit parallel ASCII, buffered.

Parity Bit Even, unbuffered.

Handshake:

KD (Key Down), $\overline{KD}$. Signal remains until key is released.

Strobe, $\overline{Strobe}$. 15 ms nom. pulse duration after key activation.

LED Power-on indicator.

Connector – 20-pin PC board header connector mates with 3M, 3421-6020 ribbon cable connector or equivalent.

Documentation: Instruction Manual.

Size:

VP-601 – 13.1 " L x 7" D x 2" H (333 x 178 x 51 mm).

VP-611 – 16.5" L x 7" D x 2" H (419 x 178 x 51 mm).

Shipping Weight:

VP-601 – 3 lbs. (1.4 kG) approx.

VP-611 – 3.5 lbs (1.6 kG) approx.

Environmental:

Temperature:

Operating: 0 to 50° C.

Storage: -40 to +85° C.

Humidity: 90% RH @ 30° C, non-condensing.

Vibration, 3 Axes – 0.3" p-p, 5 to 14 Hz – 3 g, 14 Hz to 2 kHz.

Shock, 3 Axes – 50 g, 11 msec, half sine.

Optional Accessories

Interface Cable. 36" flat ribbon cable with mating connector and unterminated end – VP-623.
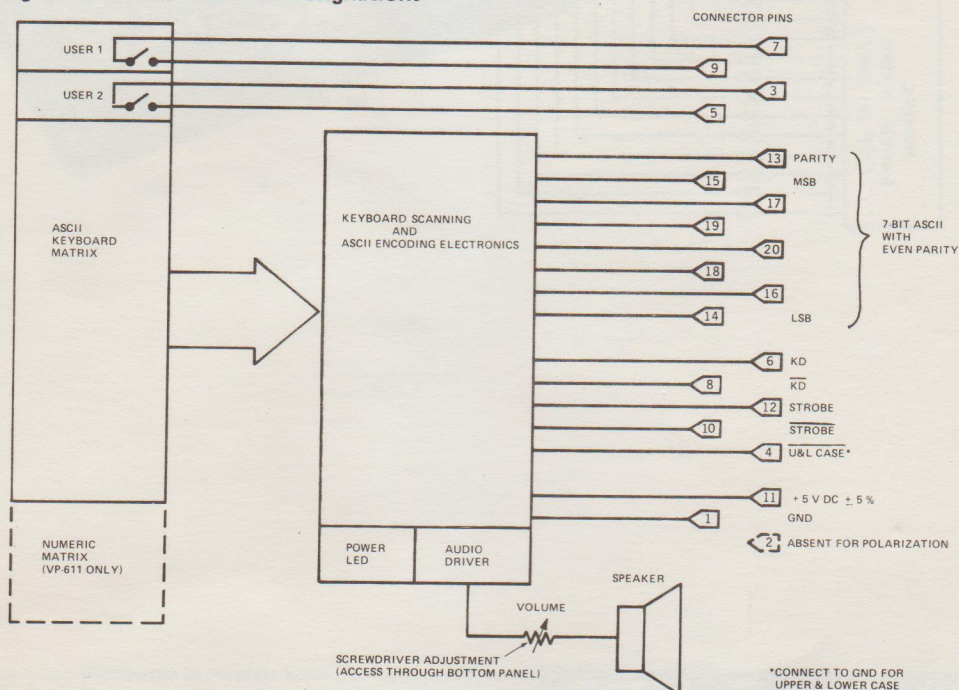
VP-604 Equivalent to VP-601 less case.

VP-614 Equivalent to VP-611 less case.

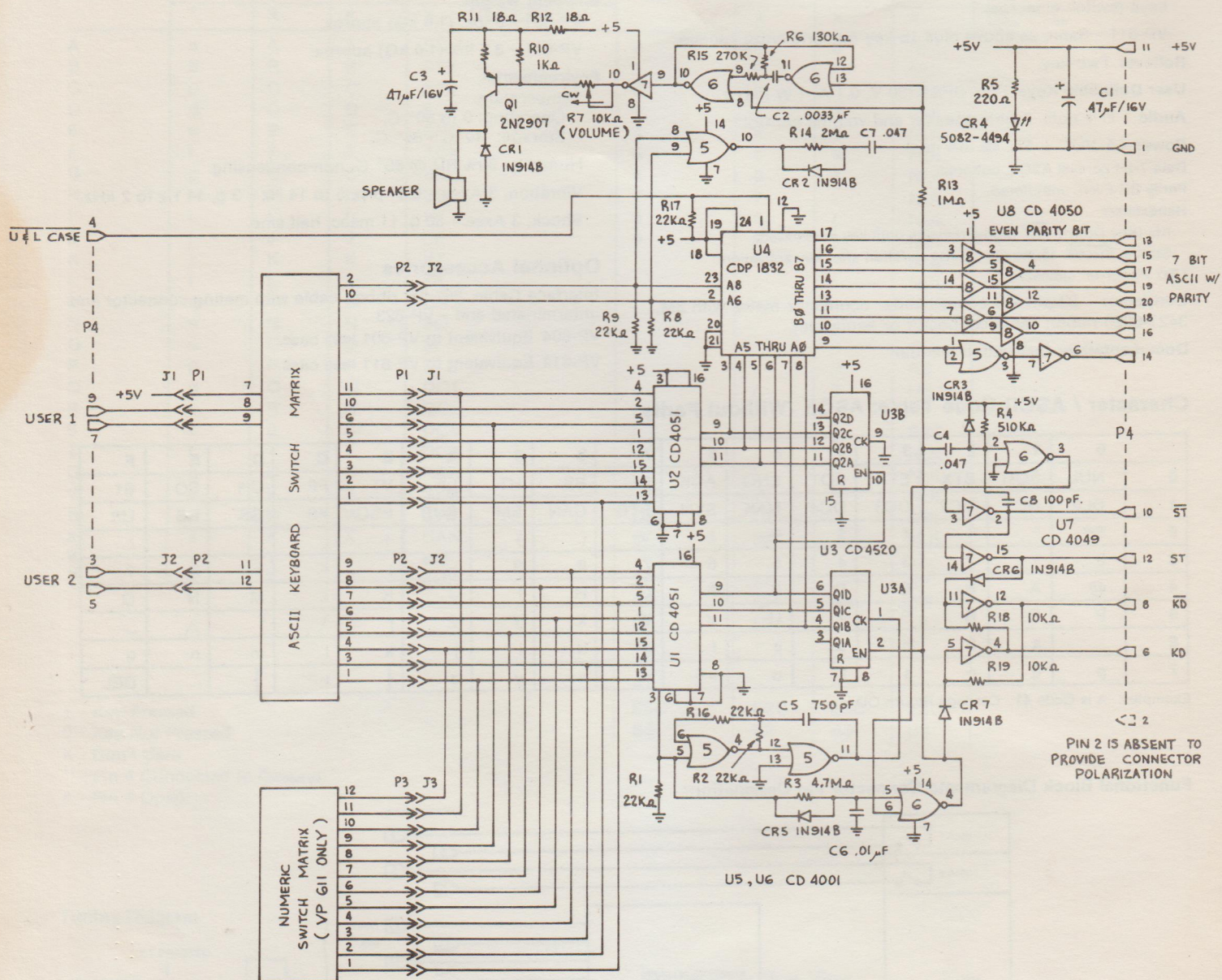## Character / ASCII Code Table: ASCII (Without Parity)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CH	SO	S1
1	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
2	SP	'	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	∧	—
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{	¦	}	~	DEL

Examples: A is Code 41. Carriage Return 0D

Functional Block Diagram and Connector Pin Designations

R11 18Ω R12 18Ω +5

R10 1kΩ

C3 + 47µF/16V

Q1 2N2907

CR1 1N914B

SPEAKER

R7 10kΩ (VOLUME)

R15 270K   R6 130kΩ

C2 .0033µF

R14 2MΩ   C7 .047

CR2 1N914B

R13 1MΩ

+5V

R5 220Ω   C1 .47µF/16V

CR4 5082-4494

GND

U8 CD 4050 EVEN PARITY BIT

7 BIT ASCII W/ PARITY

U & L CASE   4

R17 22kΩ   +5

U4 CDP 1832   B0 THRU B7   A8   A6   A5 THRU A0

R9 22kΩ   R8 22kΩ

P2 J2

P4

USER 1   9 +5V J1 P1 7 8 9

P1 J1

U2 CD 4051

Q2D Q2C Q2B Q2A R EN   U3B

U3 CD 4520

CR3 1N914B

R4 510kΩ   +5V

C4 .047

P4

C8 100 pF.

U7 CD 4049

ST   ST

CR6 1N914B

R18 10kΩ

KD   KD

R19 10kΩ

USER 2   3 J2 P2 11 12

P2 J2

U1 CD 4051

Q1D Q1C Q1B Q1A R EN   U3A

R16 22kΩ   C5 750 pF

R1 22kΩ

R2 22kΩ   R3 4.7MΩ

CR5 1N914B

C6 .01µF

U5, U6 CD 4001

CR7 1N914B

PIN 2 IS ABSENT TO PROVIDE CONNECTOR POLARIZATION

P3 J3

NUMERIC SWITCH MATRIX (VP 611 ONLY)

ASCII KEYBOARD SWITCH MATRIX