

4. Schematic Diagrams

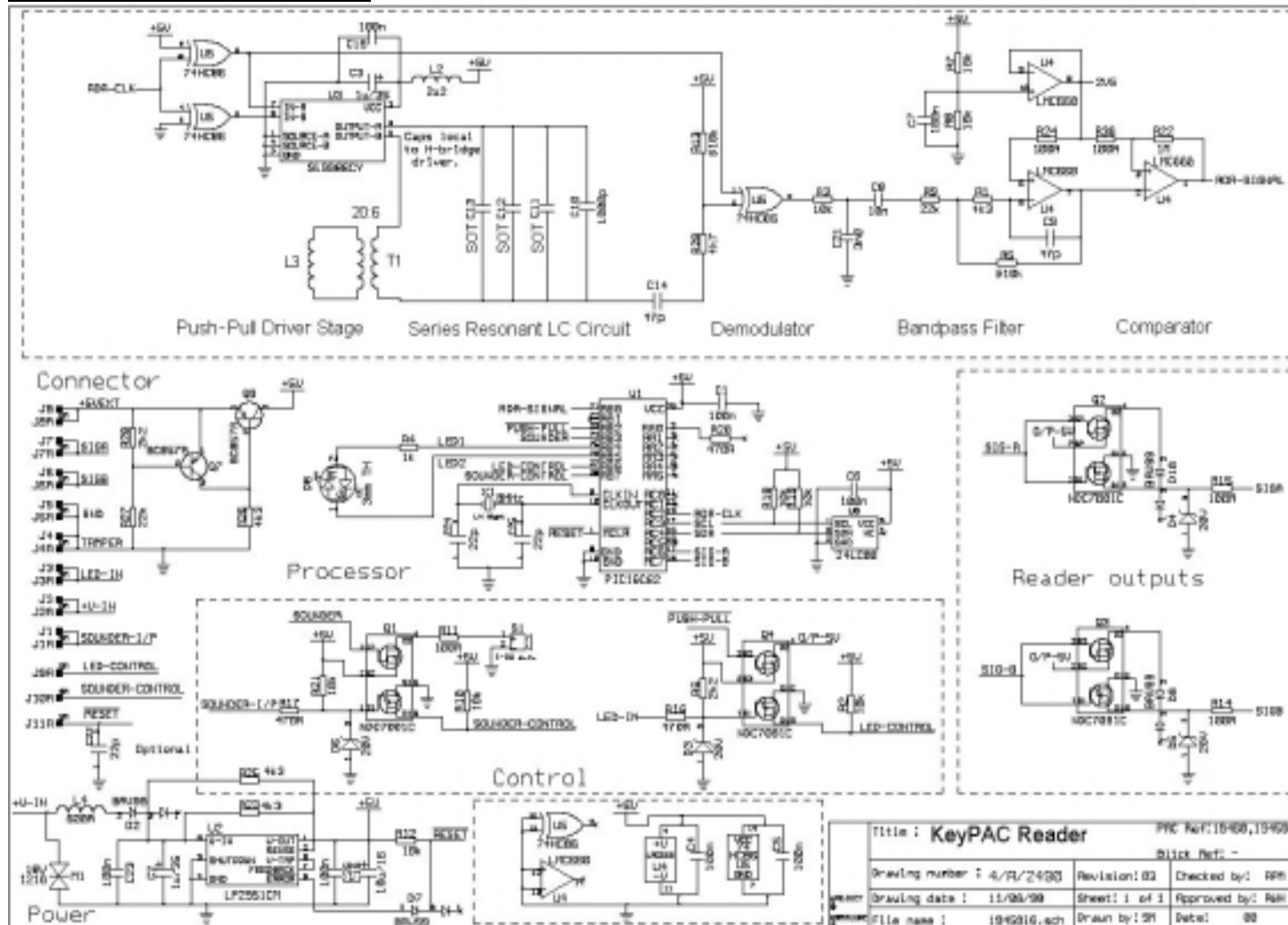
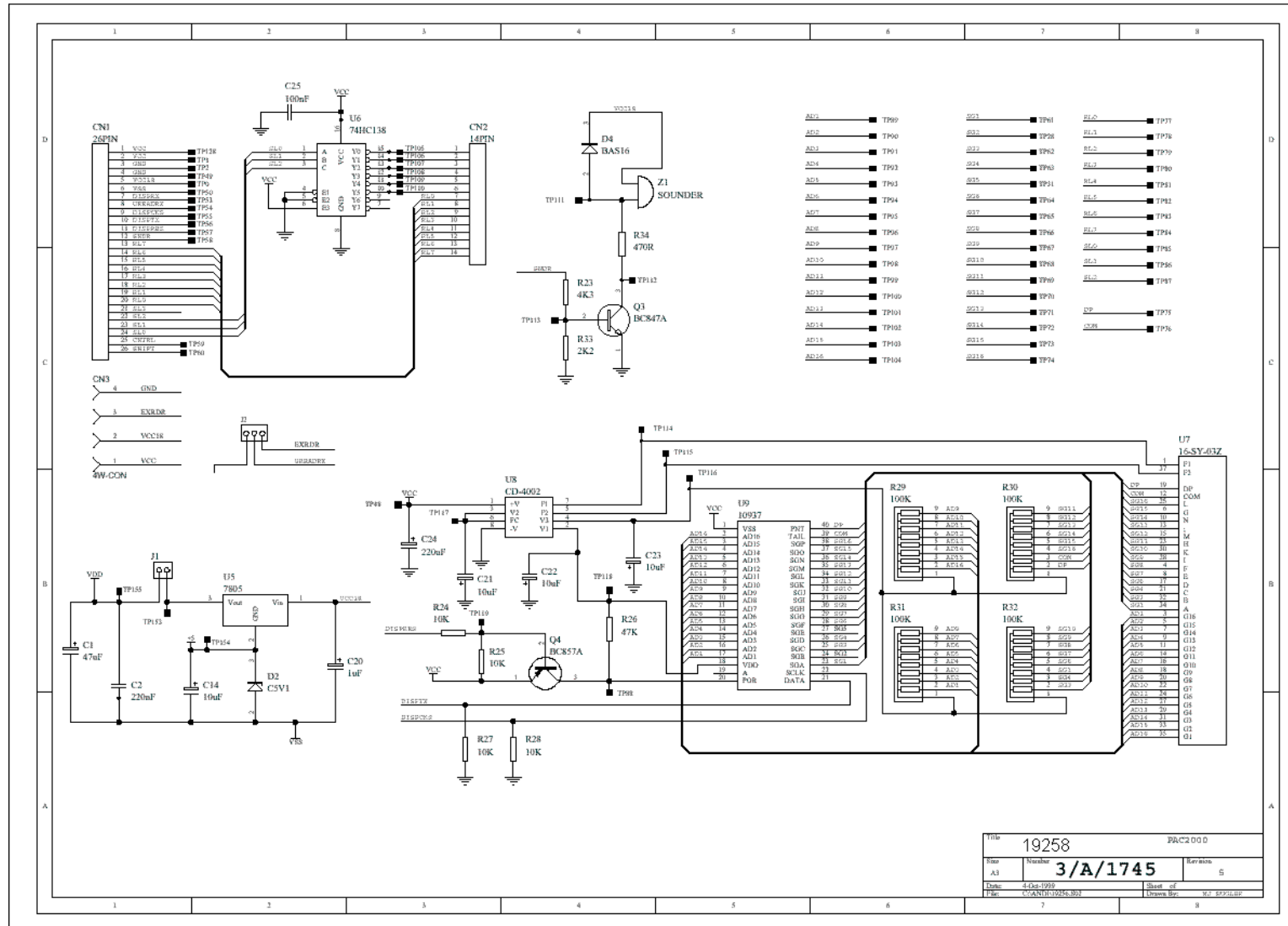


Exhibit 4: Schematic Diagram



Reader Parts Lists

Leaded (non-surface mount) components

Ident	P/N	Description	Ident	P/N	Description
D8	8320	Bicolour LED	L3	48	Wire (2 core)
J5-8	12518	Molex Cable Assy (4 way)	L3	18699	PCB coil
T1	166	Coil	PCB	18459	KeyPAC PCB
X1	8430	8.000MHz crystal			

Surface mount components

Ident	P/N	Description	Ident	P/N	Description
R1	3090	4K3 res	C1	5653	100nF cap
R2	3006	10K res	C2	5800	1uF cap
R3	3006	10K res	C3	5800	1uF cap
R4	3008	1K res	C4	5653	100nF cap
R5	3011	510K res	C5	5653	100nF cap
R6	3004	2K2 res	C6	5653	100nF cap
R7	3006	10K res	C7	5653	100nF cap
R8	3006	10K res	C8	5664	10nF cap
R9	3003	22K res	C9	5611	47pF cap
R10	3006	10K res	C10	5662	1nF cap
R11	3091	100R res	C14	5611	47pF cap
R12	3006	10K res	C16	5803	10uF cap
R13	3011	510K res	C19	5653	100nF cap
R14	3091	100R res	C21	5644	3nF cap
R15	3091	100R res	C22	5649	22pF cap
R16	3041	470R res	C23	5653	100nF cap
R17	3041	470R res	C24	5649	22pF cap
R18	3006	10K res	C25	5649	22pF cap
R19	3006	10K res	C26	5653	100nF cap
R20	3041	470R res			
R21	3006	10K res	L2	8777	2u2 Chip Inductor
R22	3009	1M res	L4	8770	Ferrite Bead BLM32A06
R23	3090	4K3 res			
R24	3091	100R res	Q1	8591	FET NDC70001C
R25	3090	4K3 res	Q2	8591	FET NDC70001C
R26	3090	4K3 res	Q3	8591	FET NDC70001C
R27	3003	22K res	Q4	8591	FET NDC70001C
R28	3004	2K2 res	Q6	8751	PNP Trans BC857
R29	3007	4K7 res	Q7	8751	PNP Trans BC857
R36	3091	100R res			
			D2	8701	BAV99 diode
U1	7615	PIC16C62-10SS	D3	8729	20V Zener
U2	8613	Lin Reg LP2951CM	D4	8729	20V Zener
U3	8546	H-Bridge SI9986CY	D5	8729	20V Zener
U4	7621	Op amp LMC660M	D6	8729	20V Zener
U5	8505	CMOS 74HC86	D7	8701	BAV99 diode
U6	8547	128 Bit EEPROM	D9	8701	BAV99 diode

Exhibit 4: Schematic Diagram

			D10	8701	BAV99 diode
M1	8754	26V MOV			

Front Panel Parts Lists

Leaded (non-surface mount) components

Ident	P/N	Description	Ident	P/N	Description
Z1	452	Sounder, 1.5-28Vdc	J2	6163	0.1" pinstrip, 90°, qty 3
J2	1765	2 way pin jumper, 0.1"	CN3	6304	4 way molex connector
CN1	1825	Ribbon cable, 26 way	U7	8341	Vac Fluorescent display
R29	2575	Resistor array, 8way,100K	U9	8342	IC, keypad & display ctrl
R30	2575	Resistor array, 8way,100K	U8	8343	Inverter unit for VFD
R31	2575	Resistor array, 8way,100K	U5	8460	Regulator, 5v, 7805
R32	2575	Resistor array, 8way,100K	IS9	6009	IC socket, 40 way
C21	4011	Capacitor, 10uF	CN2	6163	0.1" pinstrip, 90°, qty 14
C22	4011	Capacitor, 10uF	CN2	300	Keypad, 6x8
C23	4011	Capacitor, 10uF	PCB	18256	Front panel pcb
C24	4132	Capacitor, 220uF			

Surface mount components

Ident	P/N	Description	Ident	P/N	Description
R34	3040	Resistor, 470R	C14	5803	Capacitor, 10uF
R33	3056	Resistor, 2K2	C1	5805	Capacitor, 47uF
R23	3063	Resistor, 4K3	C2	5659	Capacitor, 220nF
R24	3072	Resistor, 10K	C20	5800	Capacitor, 1uF
R25	3072	Resistor, 10K	U6	8522	IC, 74HC138
R26	3088	Resistor, 47K	D4	8700	Diode, BAS16
R27	3072	Resistor, 10K	D2	8726	Zener, 5V1
R28	3072	Resistor, 10K	Q3	8750	Transistor,BC847A, NPN
C19	5646	Capacitor, 10nF	Q4	8751	Transistor,BC857A, PNP
C25	5658	Capacitor, 100nF			