

Qty	Part	Eagle Part	Description
250	0.1µF ceramic capacitor	C-EU025-024X044	0.1µF ceramic capacitor
137	330Ω resistor, 0.25W	R-EU_0204/7	330Ω resistor, 0.25W
107	5mm red LED	LED-5MM-RED	5mm red LED
53	1µF capacitor	C-EU025-024X044	1µF capacitor
52	74HC541N Octal 3-state buffer	74HC541N	74HC541N Octal 3-state buffer
44	4.7kΩ resistor, 0.25W	R-EU_0204/7	4.7kΩ resistor, 0.25W
39	5mm amber/orange/yellow LED	LED-5MM-AMBER	5mm amber/orange/yellow LED
34	5mm green LED	LED-5MM-GREEN	5mm green LED
29	1 µF electrolytic capacitor	CPOL-EUE2.5-5	1 µF electrolytic capacitor
22	8x1 pin 2.54mm centre header	22-23-2081	8x1 pin 2.54mm centre header
22	74HC138N 3-to-8 line Decoder	74HC138N	74HC138N 3-to-8 line Decoder
20	On-On toggle switch	TL36PO	On-On toggle switch
17	8×4.7kΩ resistor network	G08R	8×4.7kΩ resistor network
16	1µF electrolytic capacitor	CPOL-EUE1.8-4	1µF electrolytic capacitor
15	100nF Ceramic Capacitor	C-EU025-024X044	100nF Ceramic Capacitor
15	74HC574 8-bit D Flip Flop bus driver	74HC574N	74HC574 8-bit D Flip Flop bus driver
14	3-pin 2.54mm header	JP2E	3-pin 2.54mm header
14	74HC193N	74HC193N	
12	10k	R-EU_0204/7	
11	29x040 4 MBit (512k x 8) Flash RAM	29F040PLCC32	29x040 4 MBit (512k x 8) Flash RAM
10	Mom-Off-Mom toggle switch	TL37PO	Mom-Off-Mom toggle switch
10	Mom-Off-Mom toggle switch	TL47PO	Mom-Off-Mom toggle switch
9	10 µF electrolytic capacitor	CPOL-EUE2.5-5	10 µF electrolytic capacitor
9	74HC00 4× NAND gate	74HC00N	74HC00 4× NAND gate
9	74HC04N Hex inverter	74HC04N	74HC04N Hex inverter
8	74HC32 4× OR gate	74HC32N	74HC32 4× OR gate
8	74HC112N	74HC112N	
8	LM556N Dual timer	LM556N	LM556N Dual timer
7	2-pin 2.54mm header	JP1E	2-pin 2.54mm header
7		MA04-2	
7	8×10kΩ resistor, DIL packaged	8R-N	8×10kΩ resistor, DIL packaged
7	74HC08 4× AND gate	74HC08N	74HC08 4× AND gate
7	74HC74N	74HC74N	
7	20-pin shrouded header	2540-	20-pin shrouded header
5	6x1 2.54mm female wirewrap header	FE06-1	6x1 2.54mm female wirewrap header
5	1kΩ resistor, 0.25W	R-EU_0204/7	1kΩ resistor, 0.25W
5	74HC05 6× open drain inverter	74HC05N	74HC05 6× open drain inverter
5	74HC14N Hex inverting Schmitt trigger	74HC14N	74HC14N Hex inverting Schmitt trigger

source

5 74HC245 Octal bus transceiver, 3-state	74HC245N	74HC245 Octal bus transceiver, 3-state
5 74HC374 Octal D-type transparent latch, positive edge triggered	74HC374N	74HC374 Octal D-type transparent latch, positive edge triggered
5 74HC540N Octal 3-state inverting buffer	74HC540N	74HC540N Octal 3-state inverting buffer
5 74HC688 8-bit magnitude/identity comparator	74HC688N	74HC688 8-bit magnitude/identity comparator
4	MA06-1	
4 2k2	R-EU_0204/7	
4 22 pF ceramic capacitor	C-EU025-024X044	22 pF ceramic capacitor
4 74HC273N	74HC273N	
4 8×330Ω resistor network	G08R	8×330Ω resistor network
4 330R	R-EU_0207/7	
4 BC548 NPN Transistor	BC548	BC548 NPN Transistor
4 On-Off-On toggle switch	TL49PO	On-Off-On toggle switch
3	MA09-2	
3	PINHD-1X2	
3 1MΩ resistor 0.25W	R-EU_0204/7	1MΩ resistor 0.25W
3 1N4148 diode	1N4148DO35-7	1N4148 diode
3 3.9kΩ, ¼W Resistor	R-EU_0207/7	3.9kΩ, ¼W Resistor
3 33pF ceramic capacitor	C-EU025-024X044	33pF ceramic capacitor
3 8×50kΩ resistor network	8R-N	8×50kΩ resistor network
3 74HC253 Dual 4:1 multiplexer, 3-state	74HC253N	74HC253 Dual 4:1 multiplexer, 3-state
3 74HCT00N Quad 2-input NAND gate	74HCT00N	74HCT00N Quad 2-input NAND gate
3 MAX-232 RS-232 transceiver	MAX232	MAX-232 RS-232 transceiver
3 MCP23016	MCP23016	
2 Double-pole 3-position key switch	320-938	Double-pole 3-position key switch
2 8x1 2.54mm female wirewrap header	FE08-1	8x1 2.54mm female wirewrap header
2 DB9 male or 2×5 pin header	M09HP	DB9 male or 2×5 pin header
2	PINHD-1X5	
2	PINHD-1X8	
2 2×20-pin shrouded/keyed header	PINHD-2X20	2×20-pin shrouded/keyed header
2 8-way DIP switch	SW_DIP-8	8-way DIP switch
2 Tactile switch	TAC_SWITCHPTH	Tactile switch
2 96-pin (A+B+C) DIN-41612 Bauform 'C' plug	VG96-3K	96-pin (A+B+C) DIN-41612 Bauform 'C' plug
2 1k	R-EU_0207/7	
2 3×4.7kΩ resistor network	G03R	3×4.7kΩ resistor network
2 7×4.7kΩ resistor network	G06R	7×4.7kΩ resistor network
2 4k7	R-EU_0207/7	
2 10MΩ resistor, 0.25W	R-EU_0204/7	10MΩ resistor, 0.25W
2 10Ω, ¼W Resistor	R-EU_0204/7	10Ω, ¼W Resistor
2 8×10kΩ resistor network	G08R	8×10kΩ resistor network
2 27kΩ, ¼W Resistor	R-EU_0204/7	27kΩ, ¼W Resistor

source

2 47nF ceramic capacitor	C-EU025-024X044	47nF ceramic capacitor
2 47µF electrolytic capacitor	CPOL-EUE2.5-5	47µF electrolytic capacitor
2 74HC02N	74HC02N	
2 74HC03N Quad 2-input NAND gate, open collector output	74HC03N	74HC03N Quad 2-input NAND gate, open collector output
2 74HC21N	74HC21N	
2 74HC125N	74HC125N	
2 74HC153N	74HC153N	
2 74HC164N	74HC164N	
2 74HC166N	74HC166N	
2 74HC174N	74HC174N	
2 74HC251N	74HC251N	
2 82C54	82C54	
2 100kΩ linear Trimmer/Potentiometer	TRIM_EU-CT6	100kΩ linear Trimmer/Potentiometer
2 220µF electrolytic capacitor	CPOL-EUE2.5-5	220µF electrolytic capacitor
2 470Ω resistor, 0.25W	R-EU_0204/7	470Ω resistor, 0.25W
2 Speaker, 8 ohm	AL11P	Speaker, 8 ohm
2 4 MBit (512k x 8) Static RAM	29F040DIP32	4 MBit (512k x 8) Static RAM
2 2x20 pin shrouded header	IDE-CONNECTOR	2x20 pin shrouded header
2 LM386N-1	LM386N-1	
2 LM555N Timer	LM555N	LM555N Timer
2 16C2550 Dual 16550 UART	16C2550	16C2550 Dual 16550 UART
1 DB9 female or 2×5-pin header	F09VP	DB9 female or 2×5-pin header
1	JP5Q	
1	MA03-1	
1	MA05-1	
1	MA10-2	
1 Mini DIN socket, 6-pin (PS/2 keyboard), chassis-mount	MINI_DIN_6	Mini DIN socket, 6-pin (PS/2 keyboard), chassis-mount
1	PINHD-1X3	
1	PINHD-1X9	
1 3x dip switch or 2x3 pin header	SW_DIP-3	3x dip switch or 2x3 pin header
1	W237-102	
1 100nF electrolytic capacitor	CPOL-EUE2.5-5	100nF electrolytic capacitor
1 1.8432 MHz Oscillator	XO2-08-14-SOCKET	1.8432 MHz Oscillator
1 1N4002 diode	DIODE-DO41-10	1N4002 diode
1 1N5817 Schottky barrier rectifier	1N5817-B	1N5817 Schottky barrier rectifier
1 3x2 pin header	MA03-2	3x2 pin header
1 4 MHz crystal	XTAL/S	4 MHz crystal
1 4k7	G04R	
1 5×4.7kΩ resistor network	G05R	5×4.7kΩ resistor network
1 4.7kΩ linear potentiometer	TRIM_EU-CT6	4.7kΩ linear potentiometer

source

1 10kΩ 6x bussed SIL resistor	G06R	10kΩ 6x bussed SIL resistor
1 10k log	3RP/1610G	
1 10μF/10V Electrolytic capacitor	CPOL-EUE2.5-7	10μF/10V Electrolytic capacitor
1 14.7456 MHz Crystal	CRYSTALHC49U-V	14.7456 MHz Crystal
1 16 MHz Crystal	XO2-08-14-SOCKET	16 MHz Crystal
1 9x1 pin 2.54mm centre header	22-23-2091	9x1 pin 2.54mm centre header
1 32.768 kHz Crystal	CRYSTALTC38H	32.768 kHz Crystal
1 50kΩ resistor, 0.25W	R-EU_R0805	50kΩ resistor, 0.25W
1 50k log	TRIM_EU-CT6	
1 74HC85N 4-bit Magnitude Comparator	74HC85N	74HC85N 4-bit Magnitude Comparator
1 74HC86N	74HC86N	
1 74HC139N	74HC139N	
1 74HC161	4161P	
1 74HC373 Octal D-type transparent latch, negative edge triggered	74HC373N	74HC373 Octal D-type transparent latch, negative edge triggered
1 74HC590 8-bit registered binary counter	74HC590N	74HC590 8-bit registered binary counter
1 74HCT253N	74HCT253N	
1 100Ω resistor, 0.25W	R-EU_0204/7	100Ω resistor, 0.25W
1 240Ω, ¼W Resistor	R-EU_0207/7	240Ω, ¼W Resistor
1 300kΩ resistor, 0.25W	R-EU_0204/7	300kΩ resistor, 0.25W
1 8×330Ω resistor network	GE08R	8×330Ω resistor network
1 390Ω ¼W Resistor	R-EU_0207/7	390Ω ¼W Resistor
1 470Ω linear potentiometer	TRIM_EU-CT6	470Ω linear potentiometer
1 560Ω, ¼W Resistor	R-EU_0204/7	560Ω, ¼W Resistor
1 680Ω, ¼W Resistor	R-EU_0204/7	680Ω, ¼W Resistor
1 1503_09	1503_09	
1 ATMEGA168	MEGA8-P	
1 AY-3-8910	AY-3-8910	
1 5V, 16 kbit (2k×8) NVRAM & RTC	M48T02	5V, 16 kbit (2k×8) NVRAM & RTC
1 SPEAKJET	SPEAKJET	
1 WIZ812MJ Ethernet module	WIZ812MJ	WIZ812MJ Ethernet module

source

Notes	Farnell			Farnell US			RS Online	
	Order Code	Price	Unit	Order Code	Price	Unit	Order Code	Price
Through hole Molex KK® series header	1694337	0,019	100	1694337	0,019	100	721-5240	0,051
	9339418	0,011	50				707-7622	0,014
	1581217	0,165	1				228-5988	0,042
	3322210	0,148	1	1600879	0,041	25	538-1578	0,292
	1470755	0,25	10				714-0953	0,18
	9339540	0,011	50				131-334	0,014
	1142581	0,21	1				228-6010	0,042
	1855549	0,42	1				228-6004	0,042
	1236655	0,034	1					
	1826779	0,29	1	1318508	0,172	10	663-0036	0,267
Switch body and separate black/red actuators				1602072	0,036	10	522-4289	0,31
	1236655	0,034	1					
	9411852	0,059	25	1694335	0,016	10		
	380830	0,42	10				714-0950	0,18
							251-8092	0,078
	1470793	0,34	1				527-372	0,29
	9339060	0,011	50					
	1565992	1,18	10					
10kΩ, ¼W Resistor Socket: Farnell 1103872 (£0.48@10)	1902928	0,033	1				440-6547	0,026
	9590889	0,38	1				169-6012	0,26
	9590951	0,23	10	2374080	0,086	1	662-9997	0,233
	1739939	0,27	10				709-3021	0,201
	1749804	0,39	1				663-1893	0,219
	9488260	1,18	1				536-0947	0,77
							251-8086	0,046
May replace with 2×555 + 1×decoupling cap	9339418	0,011	50				707-7622	0,014
	9665803	0,22	10				709-2845	0,201
	1013916	0,103	1				714-0975	0,15
	1099261	1,07	1	1258972	0,66	1	670-1825	0,972
Discretes used for prototyping	9339051	0,011	50				131-255	0,014
	1470855	0,54	1				442-921	0,52
	7455513	0,133	10				714-0899	0,164
Or other stackable								

	source					
	380714	0,49	1		169-6113	0,38
	380763	0,57	1		169-6141	0,38
	1753515	0,6	1	1163595 0,482	1 443-249	0,61
	9591672	0,67	10		709-2179	0,168
2.2kΩ, ¼W resistor	9339302	0,011	50			
	9411674	0,035	25			
	9591397	0,34	1		714-0925	0,175
	9356975	0,3	5			
330Ω, ¼W Resistor	9339418	0,011	50			
	9558586	0,07	5			
Also add lever actuator						
	9339086	0,011	50		131-615	0,014
Or any fast signal diode	9565124	0,011	1		436-7341	0,003
	9339485	0,011	50			
	9411682	0,04	25			
Uses 47kΩ discretes for prototyping.	9339558	0,011	50		131-457	0,014
	1753491	0,28	1		709-3046	0,147
	9591745	0,24	1	2373749 0,125	1 217-5702	0,14
	1648737	0,73	1		660-8613	0,68
	1439389	1,31	1			
Make-before-break						
Or other stackable	1099289	0,48	5			
	1099261	1,07	1		670-1825	0,972
Through hole	9471596	0,66	1		712-2576	0,5
	1813689	0,185	1			
Right angle through hole	1656159	1,84	1			
	9339051	0,011	50			
	9356347	0,24	5			
	1973129	0,085	10			
4.7kΩ, ¼W Resistor	9339540	0,011	50			
	1186248	0,012	50		135-667	0,014
	9339035	0,011	50			
	1973130	0,085	10			
	9339370	0,011	50			

source

1100530	0,055	5				
1902909	0,041	10				
9665781	0,33	1	1163587	0,322	1	
1282849	0,17	1				
1740011	0,23	1			709-2665	0,163
9591036	0,48	1			169-7403	0,32
1753485	0,56	1			443-075	0,5
1201282	0,46	1				
1287502	0,39	1				
1287531	0,32	1				
9591320	0,22	1			663-0203	0,423
1018175	6,69	1			496-688	6,71
9609849	0,58	1	1837190	0,473	1	
1902883	0,042	10				
9339531	0,011	50			131-211	0,014
599256	0,91	1				
1562900	4,71	1				
1099261	1,07	1	1258972	0,66	1	670-1825
9488340	0,48	1				0,972
1564692	0,52	10			534-3469	0,62
1294794	4,21	1				
1099294	0,48	5				

Any 8 ohm speaker will do (e.g. from old PC cases)

IDE socket
Any LM386N-x will work

1280671	0,72	1
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1902938	0,033	10			
4666483	2,24	1			
1651083	0,056	1	1924512	0,022	10
1843507	0,023	1			

18pF
Using 5-element (G05R) part.

1611758	0,148	1	1701127	0,129	1
1973120	0,065	10			
1973120	0,065	10			
1227523	0,23	1			

source

[illegible]

source

Unit

50

10

25

1

20

10

1

1

10

25

20

25

25

50

1

10

10

10

10

25

10

10

20

5

10

1

20

source

1
1
1
5

20

10
100

10
10
1
5

5
1

10

source

20
1
1

10
1

10

5

1

source

1

10

25

1

10

20

5

10

10

25

Part	Eagle Part	Description
0.1µF ceramic capacitor	C-EU025-024X044	0.1µF ceramic capacitor
330Ω resistor, 0.25W	R-EU_0204/7	330Ω resistor, 0.25W
5mm red LED	LED-5MM-RED	5mm red LED
1µF capacitor	C-EU025-024X044	1µF capacitor
74HC541N Octal 3-state buffer	74HC541N	74HC541N Octal 3-state buffer
4.7kΩ resistor, 0.25W	R-EU_0204/7	4.7kΩ resistor, 0.25W
5mm amber/orange/yellow LED	LED-5MM-AMBER	5mm amber/orange/yellow LED
5mm green LED	LED-5MM-GREEN	5mm green LED
1 µF electrolytic capacitor	CPOL-EUE2.5-5	1 µF electrolytic capacitor
8x1 pin 2.54mm centre header	22-23-2081	8x1 pin 2.54mm centre header
74HC138N 3-to-8 line Decoder	74HC138N	74HC138N 3-to-8 line Decoder
On-On toggle switch	TL36PO	On-On toggle switch
8×4.7kΩ resistor network	G08R	8×4.7kΩ resistor network
1µF electrolytic capacitor	CPOL-EUE1.8-4	1µF electrolytic capacitor
74HC574 8-bit D Flip Flop bus driver	74HC574N	74HC574 8-bit D Flip Flop bus driver
100nF Ceramic Capacitor	C-EU025-024X044	100nF Ceramic Capacitor
74HC193N	74HC193N	
3-pin 2.54mm header	JP2E	3-pin 2.54mm header
10k	R-EU_0204/7	
29x040 4 MBit (512k x 8) Flash RAM	29F040PLCC32	29x040 4 MBit (512k x 8) Flash RAM
Mom-Off-Mom toggle switch	TL37PO	Mom-Off-Mom toggle switch
Mom-Off-Mom toggle switch	TL47PO	Mom-Off-Mom toggle switch
74HC112N	74HC112N	
74HC00 4× NAND gate	74HC00N	74HC00 4× NAND gate
74HC32 4× OR gate	74HC32N	74HC32 4× OR gate
74HC04N Hex inverter	74HC04N	74HC04N Hex inverter
10 µF electrolytic capacitor	CPOL-EUE2.5-5	10 µF electrolytic capacitor
LM556N Dual timer	LM556N	LM556N Dual timer

20-pin shrouded header	MA04-2	20-pin shrouded header
74HC08 4× AND gate	2540-	74HC08 4× AND gate
2-pin 2.54mm header	74HC08N	2-pin 2.54mm header
74HC74N	JP1E	
8×10kΩ resistor, DIL packaged	74HC74N	
6x1 2.54mm female wirewrap header	8R-N	8×10kΩ resistor, DIL packaged
74HC05 6× open drain inverter	FE06-1	6x1 2.54mm female wirewrap header
74HC374 Octal D-type transparent latch, positive edge triggered	74HC05N	74HC05 6× open drain inverter
74HC245 Octal bus transceiver, 3-state	74HC374N	74HC374 Octal D-type transparent latch, positive edge triggered
74HC540N Octal 3-state inverting buffer	74HC245N	74HC245 Octal bus transceiver, 3-state
74HC14N Hex inverting Schmitt trigger	74HC540N	74HC540N Octal 3-state inverting buffer
1kΩ resistor, 0.25W	74HC14N	74HC14N Hex inverting Schmitt trigger
BC548 NPN Transistor	R-EU_0204/7	1kΩ resistor, 0.25W
74HC688 8-bit magnitude/identity comparator	BC548	BC548 NPN Transistor
22 pF ceramic capacitor	74HC688N	74HC688 8-bit magnitude/identity comparator
74HC273N	C-EU025-024X044	22 pF ceramic capacitor
2k2	74HC273N	
	R-EU_0204/7	
8×330Ω resistor network	MA06-1	
330R	G08R	8×330Ω resistor network
On-Off-On toggle switch	R-EU_0207/7	
	TL49PO	On-Off-On toggle switch
MCP23016	MA09-2	
MAX-232 RS-232 transceiver	MCP23016	
8×50kΩ resistor network	MAX232	MAX-232 RS-232 transceiver
74HC253 Dual 4:1 multiplexer, 3-state	8R-N	8×50kΩ resistor network
3.9kΩ, ¼W Resistor	74HC253N	74HC253 Dual 4:1 multiplexer, 3-state
1N4148 diode	R-EU_0207/7	3.9kΩ, ¼W Resistor
74HCT00N Quad 2-input NAND gate	1N4148DO35-7	1N4148 diode
	74HCT00N	74HCT00N Quad 2-input NAND gate

33pF ceramic capacitor
1MΩ resistor 0.25W
Double-pole 3-position key switch
8x1 2.54mm female wirewrap header

100kΩ linear Trimmer/Potentiometer
4 MBit (512k x 8) Static RAM
16C2550 Dual 16550 UART
96-pin (A+B+C) DIN-41612 Bauform 'C' plug
2×20-pin shrouded/keyed header
Speaker, 8 ohm
DB9 male or 2×5 pin header
2x20 pin shrouded header
LM555N Timer
82C54
8-way DIP switch
74HC153N
LM386N-1
74HC164N
3×4.7kΩ resistor network
74HC166N
74HC02N
74HC125N
74HC174N
7×4.7kΩ resistor network
8×10kΩ resistor network
74HC21N
74HC251N

PINHD-1X2

C-EU025-024X044

R-EU_0204/7

320-938

FE08-1

PINHD-1X5

PINHD-1X8

TRIM_EU-CT6

29F040DIP32

16C2550

VG96-3K

PINHD-2X20

AL11P

M09HP

IDE-CONNECTOR

LM555N

82C54

SW_DIP-8

74HC153N

LM386N-1

74HC164N

G03R

74HC166N

74HC02N

74HC125N

74HC174N

G06R

G08R

74HC21N

74HC251N

33pF ceramic capacitor

1MΩ resistor 0.25W

Double-pole 3-position key switch

8x1 2.54mm female wirewrap header

100kΩ linear Trimmer/Potentiometer

4 MBit (512k x 8) Static RAM

16C2550 Dual 16550 UART

96-pin (A+B+C) DIN-41612 Bauform 'C' plug

2×20-pin shrouded/keyed header

Speaker, 8 ohm

DB9 male or 2×5 pin header

2x20 pin shrouded header

LM555N Timer

8-way DIP switch

3×4.7kΩ resistor network

7×4.7kΩ resistor network

8×10kΩ resistor network

Sheet2

Tactile switch	TAC_SWITCHPTH	Tactile switch
1k	R-EU_0207/7	
4k7	R-EU_0207/7	
10Ω, ¼W Resistor	R-EU_0204/7	10Ω, ¼W Resistor
27kΩ, ¼W Resistor	R-EU_0204/7	27kΩ, ¼W Resistor
74HC03N Quad 2-input NAND gate, open collector output	74HC03N	74HC03N Quad 2-input NAND gate, open collector output
220µF electrolytic capacitor	CPOL-EUE2.5-5	220µF electrolytic capacitor
47µF electrolytic capacitor	CPOL-EUE2.5-5	47µF electrolytic capacitor
47nF ceramic capacitor	C-EU025-024X044	47nF ceramic capacitor
10MΩ resistor, 0.25W	R-EU_0204/7	10MΩ resistor, 0.25W
470Ω resistor, 0.25W	R-EU_0204/7	470Ω resistor, 0.25W
3x dip switch or 2x3 pin header	SW_DIP-3	3x dip switch or 2x3 pin header
3x2 pin header	MA03-2	3x2 pin header
10kΩ 6x bussed SIL resistor	G06R	10kΩ 6x bussed SIL resistor
10k log	3RP/1610G	
10µF/10V Electrolytic capacitor	CPOL-EUE2.5-7	10µF/10V Electrolytic capacitor
9x1 pin 2.54mm centre header	22-23-2091	9x1 pin 2.54mm centre header
50k log	TRIM_EU-CT6	
240Ω, ¼W Resistor	R-EU_0207/7	240Ω, ¼W Resistor
300kΩ resistor, 0.25W	R-EU_0204/7	300kΩ resistor, 0.25W
AY-3-8910	AY-3-8910	
5V, 16 kbit (2k×8) NVRAM & RTC	M48T02	5V, 16 kbit (2k×8) NVRAM & RTC
SPEAKJET	SPEAKJET	
	JP5Q	
	MA03-1	
	MA05-1	
	MA10-2	
	PINH-1X3	

	PINHD-1X9	
	W237-102	
WIZ812MJ Ethernet module	WIZ812MJ	WIZ812MJ Ethernet module
1.8432 MHz Oscillator	XO2-08-14-SOCKET	1.8432 MHz Oscillator
74HC373 Octal D-type transparent latch, negative edge triggered	74HC373N	74HC373 Octal D-type transparent latch, negative edge triggered
16 MHz Crystal	XO2-08-14-SOCKET	16 MHz Crystal
DB9 female or 2×5-pin header	F09VP	DB9 female or 2×5-pin header
Mini DIN socket, 6-pin (PS/2 keyboard), chassis-mount	MINI_DIN_6	Mini DIN socket, 6-pin (PS/2 keyboard), chassis-mount
8×330Ω resistor network	GE08R	8×330Ω resistor network
74HC85N 4-bit Magnitude Comparator	74HC85N	74HC85N 4-bit Magnitude Comparator
74HC590 8-bit registered binary counter	74HC590N	74HC590 8-bit registered binary counter
74HC161	4161P	
74HCT253N	74HCT253N	
74HC139N	74HC139N	
4k7	G04R	
5×4.7kΩ resistor network	G05R	5×4.7kΩ resistor network
560Ω, ¼W Resistor	R-EU_0204/7	560Ω, ¼W Resistor
1503_09	1503_09	
ATMEGA168	MEGA8-P	
680Ω, ¼W Resistor	R-EU_0204/7	680Ω, ¼W Resistor
4.7kΩ linear potentiometer	TRIM_EU-CT6	4.7kΩ linear potentiometer
74HC86N	74HC86N	
100nF electrolytic capacitor	CPOL-EUE2.5-5	100nF electrolytic capacitor
4 MHz crystal	XTAL/S	4 MHz crystal
14.7456 MHz Crystal	CRYSTALHC49U-V	14.7456 MHz Crystal
32.768 kHz Crystal	CRYSTALTC38H	32.768 kHz Crystal
390Ω ¼W Resistor	R-EU_0207/7	390Ω ¼W Resistor
50kΩ resistor, 0.25W	R-EU_R0805	50kΩ resistor, 0.25W
100Ω resistor, 0.25W	R-EU_0204/7	100Ω resistor, 0.25W
1N4002 diode	DIODE-DO41-10	1N4002 diode

470Ω linear potentiometer

1N5817 Schottky barrier rectifier

TRIM_EU-CT6

1N5817-B

470Ω linear potentiometer

1N5817 Schottky barrier rectifier

Pin headers, 72pin (2x36), 2.54mm pitch

Ribbon Cable, 40-way, 1.27mm pitch

Roth Elektronik RE840-LF PCB, 233×160mm (53×89)

Roth Elektronik RE320-HP PCB, 160×100mm (37×53)

DIN 41612 connector type 063515

2.54mm,pin,DIN 41612,solder,PCB,90°,96w

VeroWire Combs (from RS)

VeroWire Gold/Pink spooled wire for PCB

Wiring pen for PCB

DIP 8 socket

DIP 14 socket

Pin headers, 72pin (2x36), 2.54mm pitch

Bauform C, rows A+C, 64 pin, right angle (card)

Bauform C, rows A+B+C, 64 pin, right angle (card)

DIP 16 socket

DIP 18 socket

DIP 20 socket

DIP 24 socket

DIP 32 socket

DIP 40 socket

PLCC 32 socket

PLCC 44 socket

IDC 40-pin cable-side socket with relief

40-pin right angle header, shrouded

VAT	20,00%
Farnell US Surcharge	£15.95
Extra Quantity	10,00%
Grand Total	

Notes						Farnell		
	Qty	Qty + extra	Min Qty+	Bought	Remaining	Order Code	Price (£)	Unit
	250	275	275	250	25	1694337	0.019	100
	137	151	151	50	101	9339418	0.011	50
	107	118	118	10	108	1581217	0.165	1
	53	58	58	30	28	3322210	0.148	1
	52	57	57	40	17	1470755	0.250	10
	44	48	48	48	0	9339540	0.011	50
	39	43	43	10	33	1142581	0.210	1
	34	37	37	10	27	1855549	0.420	1
Through hole	29	32	32		32	1236655	0.034	1
Molex KK® series header	22	24	24		24		0.000	0
	22	24	24	12	12	1826779	0.290	1
Switch body and separate black/red actuators	20	22	22		22		0.000	0
	17	19	19	19	0		0.000	0
	16	18	18		18	1236655	0.034	1
	15	17	17		17	380830	0.420	10
	15	17	17	40	-23	9411852	0.059	25
	14	15	15	15	0	1470793	0.340	1
	14	15	15		15		0.000	0
10kΩ, ¼W Resistor	12	13	13	13	0	9339060	0.011	50
Socket: Farnell 1103872 (£0.48@10)	11	12	12	12	0	1565992	1.180	10
	10	11	11		11		0.000	0
	10	11	11		11		0.000	0
	8	9	9	9	0	1749804	0.390	1
	9	10	10	5	5	9590889	0.380	1
	8	9	9	9	0	1739939	0.270	10
	9	10	10	10	0	9590951	0.230	10
	9	10	10	20	-10	1902928	0.033	1
May replace with 2×555 + 1×decoupling cap	8	9	9	9	0	9488260	1.180	1

Sheet2

	7	8	8		8		0.000	0
	7	8	8		8	1099261	1.070	1
	7	8	8	8	0	9665803	0.220	10
	7	8	8		8		0.000	0
	7	8	8	8	0	1013916	0.103	1
Discretes used for prototyping	7	8	8		8	9339418	0.011	50
Or other stackable	5	6	6		6		0.000	0
	5	6	6	3	3	1470855	0.540	1
	5	6	6	2	4	380763	0.570	1
	5	6	6	3	3	380714	0.490	1
	5	6	6	3	3	1753515	0.600	1
	5	6	6	6	0	7455513	0.133	10
	5	6	6		6	9339051	0.011	50
	4	4	5		5	9558586	0.070	5
	5	6	6	6	0	9591672	0.670	10
	4	4	5	0	5	9411674	0.035	25
	4	4	5	5	0	9591397	0.340	1
2.2kΩ, ¼W resistor	4	4	5		5	9339302	0.011	50
	4	4	5		5		0.000	0
	4	4	5		5	9356975	0.300	5
330Ω, ¼W Resistor	4	4	5		5	9339418	0.011	50
Also add lever actuator	4	4	5		5		0.000	0
	3	3	4		4		0.000	0
	3	3	4	4	0	1439389	1.310	1
	3	3	4	4	0	1648737	0.730	1
Uses 47kΩ discretes for prototyping.	3	3	4		4	9339558	0.011	50
	3	3	4	4	0	1753491	0.280	1
	3	3	4	4	0	9339485	0.011	50
Or any fast signal diode	3	3	4		4	9565124	0.011	1
	3	3	4		4	9591745	0.240	1

Sheet2

	3	3	4		4		0.000	0
	3	3	4	4	0	9411682	0.040	25
	3	3	4		4	9339086	0.011	50
Make-before-break	2	2	3		3		0.000	0
Or other stackable	2	2	3		3		0.000	0
	2	2	3		3		0.000	0
	2	2	3		3		0.000	0
	2	2	3		3	9609849	0.580	1
	2	2	3	3	0	1562900	4.710	1
	2	2	3		3	1294794	4.210	1
Right angle through hole	2	2	3		3	1656159	1.840	1
	2	2	3	3	0	1099261	1.070	1
Any 8 ohm speaker will do (e.g. from old PC cases)	2	2	3		3	599256	0.910	1
	2	2	3		3	1099289	0.480	5
IDE socket	2	2	3		3	1099261	1.070	1
	2	2	3	3	0	1564692	0.520	10
	2	2	3		3	1018175	6.690	1
Through hole	2	2	3		3	9471596	0.660	1
	2	2	3		3	1753485	0.560	1
Any LM386N-x will work	2	2	3		3	9488340	0.480	1
	2	2	3		3	1201282	0.460	1
	2	2	3	3	0	9356347	0.240	5
	2	2	3		3	1287502	0.390	1
	2	2	3		3	9665781	0.330	1
	2	2	3		3	9591036	0.480	1
	2	2	3		3	1287531	0.320	1
	2	2	3	3	0	1973129	0.085	10
	2	2	3	3	0	1973130	0.085	10
	2	2	3		3	1740011	0.230	1
	2	2	3	3	0	9591320	0.220	1

Sheet2

4.7kΩ, ¼W Resistor	2	2	3		3	1813689	0.185	1
	2	2	3	3	0	9339051	0.011	50
	2	2	3	0	3	9339540	0.011	50
	2	2	3		3	9339035	0.011	50
	2	2	3		3	9339370	0.011	50
	2	2	3		3	1282849	0.170	1
	2	2	3		3	1902883	0.042	10
	2	2	3		3	1902909	0.041	10
	2	2	3		3	1100530	0.055	5
	2	2	3		3	1186248	0.012	50
Molex KK® series header	2	2	3	3	0	9339531	0.011	50
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2	9341587	0.025	50
	1	1	2		2	9341714	0.025	50
SpeakJet speech synthesiser	1	1	2		2		0.000	0
	1	1	2		2	1224444	13.140	1
	1	1	2		2		0.000	0
	0	0	1		1		0.000	0
	0	0	1		1		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0
	1	1	2		2		0.000	0

Sheet2

	1	1	2	2		0.000	0
	1	1	2	2		0.000	0
	1	1	2	2		0.000	0
	1	1	2	2	4666483	2.240	1
	1	1	2	2	1607705	0.520	10
May need to reduce frequency. 4 MHz: RS 547-53	1	1	2	2	7942710	1.540	1
	1	1	2	2	1099294	0.480	5
	1	1	2	2	1280671	0.720	1
	1	1	2	2	1602072	0.041	1
	1	1	2	2	380489	0.610	1
	1	1	2	2	1652001	0.520	1
	1	1	2	2	380600	0.480	1
	1	1	2	2	1740166	0.400	1
	1	1	2	2	380556	0.350	1
Using 5-element (G05R) part.	1	1	2	2	1973120	0.065	10
	1	1	2	2	1973120	0.065	10
	1	1	2	2	9339590	0.011	50
	1	1	2	2		0.000	0
	1	1	2	2		0.000	0
	1	1	2	2	9339655	0.011	50
	1	1	2	2	1227523	0.230	1
	1	1	2	2		0.000	0
	1	1	2	2	1902938	0.033	10
18pF	1	1	2	2	1611758	0.148	1
RS-232C rate	1	1	2	2	1611751	0.175	1
	1	1	2	2	1652573	0.098	1
	1	1	2	2	9339477	0.011	50
Actually 47kΩ (cheaper)	1	1	2	2	9339558	0.011	50
	1	1	2	2	9339043	0.011	50
	1	1	2	2	1651083	0.056	1

Sheet2

[illegible]

Sheet2

[illegible]

Sheet2

74	81	81	40	41	1101347	0.147	5
1	1	2	5	-3	1101348	0.126	5
92	101	100	60	40	4285608	0.146	1
2	2	3	3	0	1103849	0.750	1
1	1	2	2	0	1654375	0.270	1
1	1	2	2	0	4285669	0.280	1
12	13	13	13	0	1103872	0.480	1
2	2	3	3	0	2097214	0.490	1
	0	10	10	0	1099242	0.670	1
	0	10	10	0	1099251	1.130	1
	0	1		1			
	0	1		1			
	0	1		1			
	0	1		1			
	0	1		1			
	0	1		1			
	0	1		1			
	0	1		1			
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	0	1		1			
	0	1		1			
	0	1		1			
	0	1		1			

Sheet2

[illegible]

		Farnell US					RS Online					Best Source
Units	Total Price	Order Code	Price (£)	Unit	Units	Total Price	Order Code	Price (£)	Unit	Units	Total Price	
300	5.70	1694337	0.019	100	300	5.70	721-5240	0.051	50	250	12.75	Farnell
50	0.55		0.000	0	0		707-7622	0.014	10	50	0.70	Farnell
10	1.65		0.000	0	0		228-5988	0.042	25	25	1.05	RS Online
30	4.44	1600879	0.041	25	50	2.05	538-1578	0.292	1	30	8.76	Farnell US
40	10.00		0.000	0	0		714-0953	0.180	20	40	7.20	RS Online
50	0.55		0.000	0	0		131-334	0.014	10	50	0.70	Farnell
10	2.10		0.000	0	0		228-6010	0.042	1	10	0.42	RS Online
10	4.20		0.000	0	0		228-6004	0.042	1	10	0.42	RS Online
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
12	3.48	1318508	0.172	10	20	3.44	663-0036	0.267	10	20	5.34	Farnell US
0			0.000	0	0			0.000	0	0		NO PRICING
0		1602072	0.036	10	20	0.72	522-4289	0.310	25	25	7.75	Farnell US
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0		714-0950	0.180	20	0		NO PRICING
50	2.95	1694335	0.016	10	40	0.64		0.000	0	0		Farnell US
15	5.10		0.000	0	0		527-372	0.290	25	25	7.25	Farnell
0			0.000	0	0		251-8092	0.078	25	0		NO PRICING
50	0.55		0.000	0	0			0.000	0	0		Farnell
20	23.60		0.000	0	0			0.000	0	0		Farnell
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
9	3.51		0.000	0	0		663-1893	0.219	10	10	2.19	RS Online
5	1.90		0.000	0	0		169-6012	0.260	1	5	1.30	RS Online
10	2.70		0.000	0	0		709-3021	0.201	10	10	2.01	RS Online
10	2.30	2374080	0.086	1	10	0.86	662-9997	0.233	10	10	2.33	Farnell US
20	0.66		0.000	0	0		440-6547	0.026	50	50	1.30	Farnell
9	10.62		0.000	0	0		536-0947	0.770	10	10	7.70	RS Online

Sheet2

0			0.000	0	0		0.000	0	0	
0		1258972	0.660	1	0	670-1825	0.972	5	0	NO PRICING
10	2.20		0.000	0	0	709-2845	0.201	10	10	2.01 RS Online
0			0.000	0	0	251-8086	0.046	25	0	NO PRICING
8	0.82		0.000	0	0	714-0975	0.150	20	20	3.00 Farnell
0			0.000	0	0	707-7622	0.014	10	0	NO PRICING
0			0.000	0	0		0.000	0	0	NO PRICING
3	1.62		0.000	0	0	442-921	0.520	1	3	1.56 RS Online
2	1.14		0.000	0	0	169-6141	0.380	1	2	0.76 RS Online
3	1.47		0.000	0	0	169-6113	0.380	1	3	1.14 RS Online
3	1.80	1163595	0.482	1	3	1.45 443-249	0.610	1	3	1.83 Farnell US
10	1.33		0.000	0	0	714-0899	0.164	20	20	3.28 Farnell
0			0.000	0	0	131-255	0.014	10	0	NO PRICING
0			0.000	0	0		0.000	0	0	NO PRICING
10	6.70		0.000	0	0	709-2179	0.168	5	10	1.68 RS Online
0			0.000	0	0		0.000	0	0	NO PRICING
5	1.70		0.000	0	0	714-0925	0.175	20	20	3.50 Farnell
0			0.000	0	0		0.000	0	0	NO PRICING
0			0.000	0	0		0.000	0	0	
0			0.000	0	0		0.000	0	0	NO PRICING
0			0.000	0	0		0.000	0	0	NO PRICING
0			0.000	0	0		0.000	0	0	NO PRICING
0			0.000	0	0		0.000	0	0	
4	5.24		0.000	0	0		0.000	0	0	Farnell
4	2.92		0.000	0	0	660-8613	0.680	5	5	3.40 Farnell
0			0.000	0	0	131-457	0.014	10	0	NO PRICING
4	1.12		0.000	0	0	709-3046	0.147	10	10	1.47 Farnell
50	0.55		0.000	0	0		0.000	0	0	Farnell
0			0.000	0	0	436-7341	0.003	100	0	NO PRICING
0		2373749	0.125	1	0	217-5702	0.140	1	0	NO PRICING

Sheet2

0			0.000	0	0			0.000	0	0		
25	1.00		0.000	0	0			0.000	0	0		Farnell
0			0.000	0	0	131-615		0.014	10	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		
0			0.000	0	0			0.000	0	0		
0		1837190	0.473	1	0			0.000	0	0		NO PRICING
3	14.13		0.000	0	0			0.000	0	0		Farnell
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
3	3.21		0.000	0	0	670-1825		0.972	5	5	4.86	Farnell
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0		1258972	0.660	1	0	670-1825		0.972	5	0		NO PRICING
10	5.20		0.000	0	0	534-3469		0.620	1	3	1.86	RS Online
0			0.000	0	0	496-688		6.710	1	0		NO PRICING
0			0.000	0	0	712-2576		0.500	1	0		NO PRICING
0			0.000	0	0	443-075		0.500	1	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
5	1.20		0.000	0	0			0.000	0	0		Farnell
0			0.000	0	0			0.000	0	0		NO PRICING
0		1163587	0.322	1	0			0.000	0	0		NO PRICING
0			0.000	0	0	169-7403		0.320	1	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
10	0.85		0.000	0	0			0.000	0	0		Farnell
10	0.85		0.000	0	0			0.000	0	0		Farnell
0			0.000	0	0	709-2665		0.163	20	0		NO PRICING
3	0.66		0.000	0	0	663-0203		0.423	10	10	4.23	Farnell

Sheet2

[illegible]

Sheet2

0			0.000	0	0			0.000	0	0		
0			0.000	0	0			0.000	0	0		
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0		714-0922	0.182	20	0		NO PRICING
2	3.08		0.000	0	0		547-5487	1.430	1	2	2.86	RS Online
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0		522-4289	0.310	25	0		NO PRICING
0		1387859	0.543	1	0		527-801	0.544	25	0		NO PRICING
2	1.04		0.000	0	0		709-2523	0.236	5	5	1.18	Farnell
2	0.96		0.000	0	0		709-2113	0.143	10	10	1.43	Farnell
2	0.80		0.000	0	0			0.000	0	0		Farnell
2	0.70		0.000	0	0			0.000	0	0		Farnell
10	0.65		0.000	0	0			0.000	0	0		Farnell
10	0.65		0.000	0	0			0.000	0	0		Farnell
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
2	0.46		0.000	0	0			0.000	0	0		Farnell
0		1075957	0.169	1	2	0.34	169-7380	0.260	1	2	0.52	Farnell US
0			0.000	0	0			0.000	0	0		NO PRICING
0		1701127	0.129	1	0			0.000	0	0		NO PRICING
5	0.88	1701136	0.118	1	5	0.59		0.000	0	0		Farnell US
0			0.000	0	0			0.000	0	0		NO PRICING
0			0.000	0	0			0.000	0	0		NO PRICING
50	0.55		0.000	0	0		131-457	0.014	10	10	0.14	RS Online
50	0.55		0.000	0	0		131-132	0.014	10	10	0.14	RS Online
0		1924512	0.022	10	0			0.000	0	0		NO PRICING

[illegible]

Sheet2

[illegible]

Sheet2

[illegible]

Order code	Units	Price (£)
1694337	300	5.70
9339418	50	0.55
228-5988	25	1.05
1600879	50	2.05
714-0953	40	7.20
9339540	50	0.55
228-6010	10	0.42
228-6004	10	0.42
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1318508	20	3.44
NO PRICING	NO PRICING	NO PRICING
1602072	20	0.72
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1694335	40	0.64
1470793	15	5.10
NO PRICING	NO PRICING	NO PRICING
9339060	50	0.55
1565992	20	23.60
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
663-1893	10	2.19
169-6012	5	1.30
709-3021	10	2.01
2374080	10	0.86
1902928	20	0.66
536-0947	10	7.70

NO PRICING	NO PRICING	NO PRICING
709-2845	10	2.01
NO PRICING	NO PRICING	NO PRICING
1013916	8	0.82
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
442-921	3	1.56
169-6141	2	0.76
169-6113	3	1.14
1163595	3	1.45
7455513	10	1.33
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
709-2179	10	1.68
NO PRICING	NO PRICING	NO PRICING
9591397	5	1.70
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1439389	4	5.24
1648737	4	2.92
NO PRICING	NO PRICING	NO PRICING
1753491	4	1.12
9339485	50	0.55
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING

9411682	25	1.00
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1562900	3	14.13
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1099261	3	3.21
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
534-3469	3	1.86
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
9356347	5	1.20
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1973129	10	0.85
1973130	10	0.85
NO PRICING	NO PRICING	NO PRICING
9591320	3	0.66

NO PRICING	NO PRICING	NO PRICING
9339051	50	0.55
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
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NO PRICING	NO PRICING	NO PRICING
131-211	10	0.14
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
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NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
547-5487	2	2.86
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1652001	2	1.04
380600	2	0.96
1740166	2	0.80
380556	2	0.70
1973120	10	0.65
1973120	10	0.65
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1227523	2	0.46
1075957	2	0.34
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
1701136	5	0.59
NO PRICING	NO PRICING	NO PRICING
NO PRICING	NO PRICING	NO PRICING
131-457	10	0.14
131-132	10	0.14
NO PRICING	NO PRICING	NO PRICING

1227517	2	0.48
NO PRICING	NO PRICING	NO PRICING

1915225	5	4.08
382-169	1	4.29
1172156	3	54.63
NO PRICING	NO PRICING	NO PRICING
454-2817	1	1.27
1656159	4	7.36
618-8780	1	25.70
105-4711	1	12.28
105-4626	1	11.71
NO PRICING	NO PRICING	NO PRICING
1183573	30	2.85

1183574	40	3.48
1183575	5	0.60
1183577	60	7.14
1157740	3	0.62
1654375	2	0.54
1183580	2	0.48
1103872	13	6.24
2078146	3	1.46
1099242	10	6.70
1099251	10	11.30

285.97
60.38
15.95
362.30