

PTV CPU 1 MB

Revised:03.06.2002

P4050938

(MIFARE-interface for Rados)

Revision: 3.8

REMARK !~~CON1~~ = not install

gray row = changed

or equ = or equivalent type

INTER MARKETING OY
Kreetankuja
FIN-21200 RAISIO
FINLAND

Version History

Bill Of Materials	14.8.2001	Initial version		R 3.5
Bill Of Materials	14.9.2001	Alternative types added	U1,U2,U3,U4,U5,U6,U7	R 3.5
Bill Of Materials	28.9.2001	Other components added	4, 5	R 3.5
Bill Of Materials	9.11.2001	added / changed	JP30,R102,R103,U29,U30	R 3.6
Bill Of Materials	15.05.2002	added / changed	R103, Q26	R3.7
Bill Of Materials	03.06.2002	changed	C81, C79	R3.8

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributer	Misc.	
1	1	BT1	3V	LITHIUM BATTERY	CR2430-P			3V		FDK CR2430-P	FUJI	YE	or equ	
2	59	C1	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C2	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C3	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C4	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C5	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C6	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C7	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C8	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C9	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C10	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C11	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C12	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C13	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C14	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C15	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C16	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C17	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C21	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C22	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C26	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C27	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C28	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C35	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C36	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C37	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C38	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C39	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C49	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C50	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C51	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C52	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C53	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C54	100nF	CERAMIC CAPACITOR	1206	10 %		50V						

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributer	Misc.	
		C59	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C60	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C61	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C62	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C63	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C64	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C65	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C68	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C72	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C73	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C74	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C76	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C77	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C82	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C88	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C96	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C97	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C103	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C104	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C105	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C110	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C112	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C113	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C114	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C118	100nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C121	100nF	CERAMIC CAPACITOR	L=0.508	10 %		50V						
2.1		C81	4.7uF16V	TANTALUM CAPACITOR	A	10 %	16V							
3	10	C98	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C99	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C100	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C101	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C102	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C106	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C108	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C109	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C111	150pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C120	150pF	CERAMIC CAPACITOR	L=0.508	10 %		50V						
4	4	C18	15pF	CERAMIC CAPACITOR	1206	5 %		50V						
		C19	15pF	CERAMIC CAPACITOR	1206	5 %		50V						
		C29	15pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C30	15pF	CERAMIC CAPACITOR	1206	10 %		50V						
5	4	C20	4.7uF16V	TANTALUM CAPACITOR	C	10 %		16V						
		C40	4.7uF16V	TANTALUM CAPACITOR	C	10 %		16V						
		C84	4.7uF16V	TANTALUM CAPACITOR	C	10 %		16V						
		C85	4.7uF16V	TANTALUM CAPACITOR	C	10 %		16V						
6	14	C31	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C32	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C33	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C34	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C41	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C44	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C45	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C48	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributer	Misc.	
		C58	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C83	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C86	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C87	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C95	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
		C119	1uF16V	TANTALUM CAPACITOR	1206	10 %		16V						
6.1	1	C79	10uF16V	TANTALUM CAPACITOR	A	10 %	16V							
7	3	C42	33pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C43	33pF	CERAMIC CAPACITOR	1206	10 %		50V						
		C116	33pF	CERAMIC CAPACITOR	1206	10 %		50V						
8	5	C46	10nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C47	10nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C70	10nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C71	10nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C75	10nF	CERAMIC CAPACITOR	1206	10 %		50V						
9	2	C56	4.7nF	CERAMIC CAPACITOR	1206	10 %		50V						
		C55	4.7nF	CERAMIC CAPACITOR	1206	10 %		50V						
10	2	C67	22uF16V	TANTALUM CAPACITOR	D	10 %		16V						
		C89	22uF16V	TANTALUM CAPACITOR	D	10 %		16V						
11	1	C69	330pF	CERAMIC CAPACITOR	1206	10 %		50V						
12	1	C78	2.2nF	CERAMIC CAPACITOR	1206	10 %		50V						
13	1	C80	150nF	CERAMIC CAPACITOR	1206	10 %		50V						
14	5	C90	270uF16V	EL- CAPACITOR	RVI 136									
		C91	270uF16V	EL- CAPACITOR	RVI 136						PHILIPS	MULTI		
		C92	270uF16V	EL- CAPACITOR	RVI 136						PHILIPS	MULTI		
		C93	270uF16V	EL- CAPACITOR	RVI 136						PHILIPS	MULTI		
		C94	270uF16V	EL- CAPACITOR	RVI 136						PHILIPS	MULTI		
15	1	C107	18pF	CERAMIC CAPACITOR	1206	10 %		50V						
16	1	C117	220nF	CERAMIC CAPACITOR	1206	10 %		50V						
17	1	D9	10MQ040	SCHOTTKY DIODE	D-64			40V	1A		IR	FLINKENBERG	or equ	
18	4	D10	HSMH-C670	LIGHT DIODE	0805						HP			
		D11	HSMH-C670	LIGHT DIODE	0805						HP			
		D12	HSMH-C670	LIGHT DIODE	0805						HP			
		D13	HSMH-C670	LIGHT DIODE	0805						HP			
19	8	D16	BAV99	DUAL DIODE	TO-236									
		D17	BAV99	DUAL DIODE	TO-236									
		D21	BAV99	DUAL DIODE	TO-236									
		D30	BAV99	DUAL DIODE	TO-236									
		D31	BAV99	DUAL DIODE	TO-236									
		D32	BAV99	DUAL DIODE	TO-236									
		D33	BAV99	DUAL DIODE	TO-236									
		D34	BAV99	DUAL DIODE	TO-236									
20	1	D19	ZD3V6	ZENER DIODE	MINIMELF		0.4W	3.6V						
21	5	D22	10MF2	FAST DIODE	D-64						IR	FLINKENBERG	or equ	
		D24	10MF2	FAST DIODE	D-64						IR	FLINKENBERG	or equ	
		D25	10MF2	FAST DIODE	D-64						IR	FLINKENBERG	or equ	
		D26	10MF2	FAST DIODE	D-64						IR	FLINKENBERG	or equ	
		D29	10MF2	FAST DIODE	D-64						IR	FLINKENBERG	or equ	
22	1	D23	SM15T12A	TRANSIENT SUPPRESSOR	SOD-15		1.5kW 1ms	12V			SGS			
23	1	D27	LED	LIGHT DIODE	0805					HSMH-C670	HP			
24	2	D28	1N4148	DIODE	MINIMELF									
		D35	1N4148	DIODE	MINIMELF									
25	2	D36	ZD4V7	ZENER DIODE	MINIMELF		0.4W	4.7V						

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		D37	ZD4V7	ZENER DIODE	MINIMELF		0.4W	4.7V						
26	1	D38	SM5908 5V	TRANSIENT SUPPRESSOR	SOD-15		1.5kW 1ms	5V			SGS		or equ	
27	1	D39	ZD2V7	ZENER DIODE	MINIMELF		0.4W	2.7V						
28	2	D40	BZW04P10B	TRANSIENT SUPPRESSOR	F126		400W 1ms	12V			SGS		or equ	
		D41	BZW04P10B	TRANSIENT SUPPRESSOR	F126		400W 1ms	12V			SGS		or equ	
29	1	F1	750mA	PICO FUSE	<-0.4IN->						WICMANN-WERKE		or equ	
30	1	ISO2	HCPL-0701-V	OPTO COUPLER	SO-8						HEWLETT PACKARD			
31	1	JP8	HEADER 20	WRAP PIN HEADER	MTSW-120					MTSW-120-11-G-S-51	SAMTEC	Q-FLEX OY	or equ	
32	1	JP19	HEADER 5X2	CONNECTOR	71308-0110						MOLEX	INTO		
33	4	JP20	HEADER 2	CONNECTOR	5267-02A						MOLEX	INTO		
		JP21	HEADER 2	CONNECTOR	5267-02A						MOLEX	INTO		
		JP27	HEADER 2	CONNECTOR	5267-02A						MOLEX	INTO		
		JP31	HEADER 2	SOLDER JUMPER										
34	1	JP22	HEADER 8	CONNECTOR	92250-088						BERG	MULTI		
35	2	JP23	HEADER 8X2	CONNECTOR	71308-0116						MOLEX	INTO		
		JP28	HEADER 8X2	CONNECTOR	71308-0116						MOLEX	INTO		
126	1	JP30	HEADER 3	CONNECTOR	5267-03A						MOLEX	INTO		
36	1	JP24	HEADER 6	CONNECTOR	5267-06A						MOLEX	INTO		
37	1	JP25	HEADER 10	FILM CABLE CONNECTOR	52207-1090						MOLEX	INTO		
38	1	L1	100uH	INDUCTOR	DT-3316-104					DT-3316-104	COILCRAFT	SYLVAN GINSBURY		
39	1	L2	47uH	INDUCTOR	DT-3316-473					DT-3316-473	COILCRAFT	SYLVAN GINSBURY		
40	12	Q4	2222A	NPN TRANSISTOR	TO-236									
		Q6	2222A	NPN TRANSISTOR	TO-236									
		Q9	2222A	NPN TRANSISTOR	TO-236									
		Q10	2222A	NPN TRANSISTOR	TO-236									
		Q11	2222A	NPN TRANSISTOR	TO-236									
		Q12	2222A	NPN TRANSISTOR	TO-236									
		Q14	2222A	NPN TRANSISTOR	TO-236									
		Q18	2222A	NPN TRANSISTOR	TO-236									
		Q19	2222A	NPN TRANSISTOR	TO-236									
		Q20	2222A	NPN TRANSISTOR	TO-236									
		Q21	2222A	NPN TRANSISTOR	TO-236									
		Q23	2222A	NPN TRANSISTOR	TO-236									
41	4	Q5	2907A	PNP TRANSISTOR	TO-236									
		Q7	2907A	PNP TRANSISTOR	TO-236									
		Q8	2907A	PNP TRANSISTOR	TO-236									
		Q13	2907A	PNP TRANSISTOR	TO-236									
42	2	Q15	IRFR9024	P FET	TO-252AA	RDS < 0.28 Ω		60V	9.6A		IR	FLINKENBERG	or equ	
		Q17	IRFR9024	P FET	TO-252AA	RDS < 0.28 Ω		60V	9.6A		IR	FLINKENBERG	or equ	
43	1	Q16	TIP42	PNP TRANSISTOR	TO-220									
44	1	Q22	BCX51	PNP TRANSISTOR	SOT-89									
45	1	Q24	BCX56	NPN TRANSISTOR	SOT-89									
46	1	Q25	IRFR024	N FET	TO-252AA	RDS < 0.10 Ω		60V	16A		IR	FLINKENBERG	or equ	
46.2	1	Q26	2N3904	NPN TRANSISTOR	TO-92									
47	1	RP1	10k0	POTENTIOMETER	CERMET 3386H						BOURNS	MULTI		
48	5	R1	1M	RESISTOR	1206	5 %								
		R2	1M	RESISTOR	1206	5 %								
		R3	1M	RESISTOR	1206	5 %								
		R4	1M	RESISTOR	1206	5 %								
		R86	1M	RESISTOR	1206	5 %								
49	1	R5	15*100k	RESISTOR NETWORK	SO-16	2 %	0.16W			4816 P-002-104	BOURNS	MULTI	or equ	
50	10	R7	100k	RESISTOR	1206	5 %								
		R24	100k	RESISTOR	1206	5 %								

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributor	Misc.	
		R25	100k	RESISTOR	1206	5 %								
		R35	100k	RESISTOR	1206	5 %								
		R39	100k	RESISTOR	1206	5 %								
		R40	100k	RESISTOR	1206	5 %								
		R52	100k	RESISTOR	1206	5 %								
		R54	100k	RESISTOR	1206	5 %								
		R63	100k	RESISTOR	1206	5 %								
		R64	100k	RESISTOR	1206	5 %								
51	1	R10	120	RESISTOR	1206	5 %								
52	7	R11	3k3	RESISTOR	1206	5 %								
		R12	3k3	RESISTOR	1206	5 %								
		R14	3k3	RESISTOR	1206	5 %								
		R15	3k3	RESISTOR	1206	5 %								
		R16	3k3	RESISTOR	1206	5 %								
		R21	3k3	RESISTOR	1206	5 %								
		R22	3k3	RESISTOR	1206	5 %								
53	7	R13	4k7	RESISTOR	1206	5 %								
		R17	4k7	RESISTOR	1206	5 %								
		R23	4k7	RESISTOR	1206	5 %								
		R26	4k7	RESISTOR	1206	5 %								
		R36	4k7	RESISTOR	1206	5 %								
		R43	4k7	RESISTOR	1206	5 %								
		R58	4k7	RESISTOR	1206	5 %								
54	9	R18	10k	RESISTOR	1206	5 %								
		R46	10k	RESISTOR	1206	5 %								
		R57	10k	RESISTOR	1206	5 %								
		R67	10k	RESISTOR	1206	5 %								
		R69	10k	RESISTOR	1206	5 %								
		R75	10k	RESISTOR	1206	5 %								
		R91	10k	RESISTOR	1206	5 %								
		R92	10K	RESISTOR	1206	5 %								
		R99	10k	RESISTOR	1206	5 %								
55	1	R20	5k6	RESISTOR	1206	5 %								
56	1	R27	820	RESISTOR	1206	5 %								
57	2	R29	270	RESISTOR	1206	5 %								
		R28	270	RESISTOR	1206	5 %								
58	3	R33	15*10k	RESISTOR NETWORK	SO-16	2 %	0.16W			4816 P-002-103	BOURNS		or equ	
		R34	15*10k	RESISTOR NETWORK	SO-16	2 %	0.16W			4816 P-002-103	BOURNS		or equ	
		R41	15*10k	RESISTOR NETWORK	SO-16	2 %	0.16W			4816 P-002-103	BOURNS		or equ	
59	3	R44	2k2	RESISTOR	1206	5 %								
		R68	2k2	RESISTOR	1206	5 %								
		R74	2k2	RESISTOR	1206	5 %								
60	3	R45	1k	RESISTOR	1206	5 %								
		R87	1k	RESISTOR	1206	5 %								
		R95	1k	RESISTOR	1206	5 %								
61	1	R47	39	RESISTOR	1206	5 %								
62	1	R48	510k	RESISTOR	1206	5 %								
63	4	R49	3R9	RESISTOR	1206	5 %								
		R96	3R9	RESISTOR	1206	5 %								
		R100	3R9	RESISTOR	1206	5 %								
		R101	3R9	RESISTOR	1206	5 %								
64	1	R50	150	RESISTOR	1206	5 %								
65	1	R51	620	RESISTOR	1206	5 %								

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributor	Misc.	
66	2	R53	470k	RESISTOR	1206	5 %								
		R55	470k	RESISTOR	1206	5 %								
67	1	R56	1k5	RESISTOR	1206	5 %								
68	1	R59	560k 1%	RESISTOR	1206	1 %								
69	1	R60	7k5 1%	RESISTOR	1206	1 %								
70	1	R61	130k 1%	RESISTOR	1206	1 %								
71	2	R93	10k 1%	RESISTOR	1206	1 %								
		R65	10k 1%	RESISTOR	1206	1 %								
72	1	R66	15k 1%	RESISTOR	1206	1 %								
73	9	R70	100	RESISTOR	1206	5 %								
		R72	100	RESISTOR	1206	5 %								
		R73	100	RESISTOR	1206	5 %								
		R77	100	RESISTOR	1206	5 %								
		R78	100	RESISTOR	1206	5 %								
		R82	100	RESISTOR	1206	5 %								
		R85	100	RESISTOR	1206	5 %								
		R89	100	RESISTOR	1206	5 %								
		R90	100	RESISTOR	1206	5 %								
74	1	R71	220	RESISTOR	1206	5 %								
75	6	R76	22k	RESISTOR	1206	5 %								
		R79	22k	RESISTOR	1206	5 %								
		R80	22k	RESISTOR	1206	5 %								
		R81	22k	RESISTOR	1206	5 %								
		R83	22k	RESISTOR	1206	5 %								
		R84	22k	RESISTOR	1206	5 %								
76	1	R88	2k7	RESISTOR	1206	5 %								
77	1	R94	1k 1%	RESISTOR	1206	1 %								
78	1	R97	510	RESISTOR	1206	5 %								
79	1	R98	9k1	RESISTOR	1206	5 %								
124	1	R102	100k	RESISTOR	axial.	10 %	0.4W							
125	1	R103	100k	RESISTOR	axial.	10 %	0.4W							
81	2	SIMLOCK1	C 707 10M006 000 2	SIMLOCK							AMPHENOL			
		SIMLOCK2	C 707 10M006 000 2	SIMLOCK							AMPHENOL			
82	16	S1	PB	KEYBOARD CONTACT										
		S2	PB	KEYBOARD CONTACT										
		S3	PB	KEYBOARD CONTACT										
		S4	PB	KEYBOARD CONTACT										
		S5	PB	KEYBOARD CONTACT										
		S6	PB	KEYBOARD CONTACT										
		S7	PB	KEYBOARD CONTACT										
		S8	PB	KEYBOARD CONTACT										
		S9	PB	KEYBOARD CONTACT										
		S10	PB	KEYBOARD CONTACT										
		S11	PB	KEYBOARD CONTACT										
		S12	PB	KEYBOARD CONTACT										
		S13	PB	KEYBOARD CONTACT										
		S14	PB	KEYBOARD CONTACT										
		S15	PB	KEYBOARD CONTACT										
		S0	PB	KEYBOARD CONTACT										
83	1	S16	TSS11DG	SWITCH						TSS11DG-1 RA	ALCO	81	163	
84	2	U1	29F040		FLASH EEPROM	PLCC-32	TAVDV < 100ns				M29F040-90	SGS	or equ	
		U2	29F040		FLASH EEPROM	PLCC-32	TAVDV < 100ns				M29F040-90	SGS	or equ	
	OR				FLASH EEPROM	PLCC-32					Am29F040B -120 JC	AMD		

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributor	Misc.	
	OR				FLASH EEPROM	PLCC-32					Am29F040B -90 JC	AMD		
	OR				FLASH EEPROM	PLCC-32					Am29F040B -70 JC	AMD		
	OR				FLASH EEPROM	PLCC-32					Am29F040B -55 JC	AMD		
	OR				FLASH EEPROM	PLCC-32					MBM29F040C-90PD	FUJITSU		
	OR				FLASH EEPROM	PLCC-32					MBM29F040C-70PD	FUJITSU		
	OR				FLASH EEPROM	PLCC-32					HY29F040A-C12	HYUNDAI		
	OR				FLASH EEPROM	PLCC-32					HY29F040A-C90	HYUNDAI		
	OR				FLASH EEPROM	PLCC-32					HY29F040A-C70	HYUNDAI		
	OR				FLASH EEPROM	PLCC-32					HY29F040A-C55	HYUNDAI		
	OR				FLASH EEPROM	PLCC-32					MX29F040QC-12	MACRONIX		
	OR				FLASH EEPROM	PLCC-32					MX29F040QC-90	MACRONIX		
	OR				FLASH EEPROM	PLCC-32					MX29F040QC-70	MACRONIX		
	OR				FLASH EEPROM	PLCC-32					MX29F040QC-55	MACRONIX		
	OR				FLASH EEPROM	PLCC-32					M29F040B -90 K1	ST Electronics		
	OR				FLASH EEPROM	PLCC-32					M29F040B -70 K1	ST Electronics		
	OR				FLASH EEPROM	PLCC-32					M29F040B -55 K1	ST Electronics		
85	2	U3	HM6264-100	8K*8 RAM	FB-28	TAVDV < 100ns				HY6264A LJ-10	HYUNDAY		or equ	
		U4	HM6264-100	8K*8 RAM	FB-28	TAVDV < 100ns				HY6264A LJ-10	HYUNDAY		or equ	
	OR				8K*8 RAM	FB-28					HM6264BLFP-10LT	HITACHI		
	OR				8K*8 RAM	FB-28					HM6264BLFP-8LT	HITACHI		
	OR				8K*8 RAM	FB-28					V62C51864L-70F	MOSEL		
	OR				8K*8 RAM	FB-28					V62C51864LL-70F	MOSEL		
	OR				32Kx8 RAM	FB-28					GM76C256LLFW55	LGS (GOLDSTAR)	tekee kotisivujaan !!	
	OR				32Kx8 RAM	FB-28					KM62256CLG-7	SEC (SAMSUNG)		
	OR				32Kx8 RAM	FB-28					KM62256CLG-7L	SEC (SAMSUNG)		
	OR				32Kx8 RAM	FB-28					GM76C256CL-7	HYUNDAI		
	OR				32Kx8 RAM	FB-28					GM76C256CLL-7	HYUNDAI		
	OR				32Kx8 RAM	FB-28					GM76C256CL-W-7	HYUNDAI		
	OR				32Kx8 RAM	FB-28					GM76C256CLL-W-7	HYUNDAI		
	OR				32Kx8 RAM	FB-28					HM62256BLFP-7T	HITACHI		
	OR				32Kx8 RAM	FB-28					HM62256BLFP-7SLT	HITACHI		
	OR				32Kx8 RAM	FB-28					HM62256BLFP-7ULT	HITACHI		
	OR				32Kx8 RAM	FB-28					V62C518256L-70F	MOSEL		
	OR				32Kx8 RAM	FB-28					V62C518256LL-70F	MOSEL		
	OR				32Kx8 RAM	FB-28					M5M5256DFP-70LL	MITSUBISHI		
	OR				32Kx8 RAM	FB-28					M5M5256DFP-70XL	MITSUBISHI		
	OR				32Kx8 RAM	FB-28					TC55257DFL-70L	TOSHIBA		
	OR				32Kx8 RAM	FB-28					uPD43256BGU-70L	NEC		
	OR				32Kx8 RAM	FB-28					uPD43256BGU-70LL	NEC		
86	2	U5	KM684000L6-7	512K*8 RAM	FB-32	TAVDV < 100ns				KM684000L6-7	SAMSUNG		or equ	
		U6	KM684000L6-7	512K*8 RAM	FB-32	TAVDV < 100ns				KM684000L6-7	SAMSUNG		or equ	
	OR				512K*8 RAM	FB-32					KM684000BLG-7	SEC (SAMSUNG)		
	OR				512K*8 RAM	FB-32					KM684000BLG-7L	SEC (SAMSUNG)		
	OR				512K*8 RAM	FB-32					HY628400ALG-7	HYUNDAI		
	OR				512K*8 RAM	FB-32					HY628400ALLG-7	HYUNDAI		
	OR				512K*8 RAM	FB-32					HM628512BLFP-7	HITACHI		
	OR				512K*8 RAM	FB-32					HM628512BLFP-7SL	HITACHI		
	OR				512K*8 RAM	FB-32					HM628512BLFP-7UL	HITACHI		
	OR				512K*8 RAM	FB-32					M5M5408BFP-70L	MITSUBISHI		
	OR				512K*8 RAM	FB-32					M5M5408BFP-70H	MITSUBISHI		
	OR				512K*8 RAM	FB-32					TC554001FL-10L	TOSHIBA		
	OR				512K*8 RAM	FB-32					TC554001FL-70L	TOSHIBA		
87	1	U7	HD64610	REAL TIME CLOCK	FB-24						HITACHI			

Item	Quantity	Reference	Part	Description	Package	Tol. Temp.	Power dissip.	Voltage	Current	Ordering code	Manufacturer	Distributor	Misc.	
	OR		RTC-64613		REAL TIME CLOCK	FB-24				RTC-64613	EPSON			
88	2	U24	74AC08	2 INP AND GATES	SO-14									
		U8	74AC08	2 INP AND GATES	SO-14									
89	2	U35	74AC32	2 INP OR GATES	SO-14									
		U9	74AC32	2 INP OR GATES	SO-14									
90	3	U10	74AC04	INVERTER	SO-14									
		U18	74AC04	INVERTER	SO-14									
		U23	74AC04	INVERTER	SO-14									
91	1	U11	74HC10	3 INP NAND GATES	SO-14									
92	1	U12	74AC10	3 INP NAND GATES	SO-14									
93	2	U13	74AC138	1 OF 8 DECODER	SO-16									
		U14	74AC138	1 OF 8 DECODER	SO-16									
94	1	U15	S-8054-ALR	VOLTAGE DETECTOR	SOT-89						SEIKO	INTO		
95	1	U16	74HC4051	ANALOG MUX	SO-16									
96	1	U17	74HC05	INVERTER OPEN DRAIN	SO-14									
97	1	U19	XR-82C684-44PLCC	UART	PLCC-44						EXAR			
98	1	U20	SN75LBC184	RS485 LINE DRIVER	SO-8					SN75LBC184	TEXAS		or equ	
99	1	U21	LT1136CS	RS232 LINE DRIVER	SO-28						LINEAR			
100	3	U22	74HC125	BUFFER	SO-14									
		U48	74HC125	BUFFER	SO-14									
		U49	74HC125	BUFFER	SO-14									
101	2	U25	74AC00	2 INP NAND GATES	SO-14									
		U36	74AC00	2 INP NAND GATES	SO-14									
102	1	U26	74HC112	JK FLIP FLOP	SO-16									
103	1	U28	87C196KC-68PLCC	CPU SOCKET	PLCC-68					822029-3	AMP			
104	2	U29	MM74HC373WM	8 D LATCH	SO-20W						National Semic.			
		U30	MM74HC373WM	8 D LATCH	SO-20W						National Semic.			
105	2	U31	82C55-44PLCC	I/O PORTS	PLCC-44					M82C55A-2V	OKI			
		U32	82C55-44PLCC	I/O PORTS	PLCC-44					M82C55A-2V	OKI			
106	1	U33	74HC14	SCHMITT INVERTER	SO-14									
107	1	U34	74AC02	2 INP NOR GATES	SO-14									
108	1	U37	74HC245	BUS TRANSCEIVER	SO-20W									
109	1	U39	S-8054-HNM	VOLTAGE DETECTOR	SOT-89						SEIKO	INTO		
110	1	U40	MAX732CWE	12V SWITCH REGULATOR	SO-16W						MAXIM			
111	1	U41	MAX680CSA	+5V TO -10V CONVERTER	SO-8						MAXIM			
112	1	U42	MAX713CSE	NICD BATTERY CHARGER	SO-16						MAXIM			
113	1	U43	MAX730CSA	5V SWITCH REGULATOR	SO-8						MAXIM			
114	1	U44	MAX921CSA	VOLTAGE COMPARATOR	SO-8						MAXIM			
115	1	U45	4011-SW	2 INP NAND GATES	SO-14								Buffered	
116	1	U46	PLCC52	PLCC 52 SOCKET	PLCC 52						AMP			
117	1	U47	LM78L05ACM	5V L POWER GEGULATOR	SO-8									
118	1	U50	74HC138	1 OF 8 DECODER	SO-16									
119	1	U51	74HC00	2 INP NAND GATES	SO-14									
120	1	Y1	14.31818MHz	CPU CRYSTAL	HC-49 / SMD					TQ 3330 S-16.000000M	TELE QUARZ CROUP		or equ	
121	1	Y2	32768	RTCLK CRYSTAL	TC-26								not needed if U7 is F	
122	1	Y3	7.3728MHZ	UART CRYSTAL	HC-49 / SMD					TQ 3330 S-7.3728MHZ	TELE QUARZ CROUP		or equ	
123	1	Y4	5.000MHZ	CRYSTAL	HC-49 / SMD					TQ 3330 S-5.0000MHZ	TELE QUARZ CROUP		or equ	
OTHER COMPONENTS														
1	1	P.C.B	MLT920323MTS R1.	PRINTED CIRCUIT BOARD										
2	1	DISPLAY	G1213BIN000	LCD MODULE						G1213BIN000	SEIKO	INTO		

Item	Quantity	Reference	Part	Description	Package	Tol.	Power	Voltage	Current	Ordering code	Manufacturer	Distributor	Misc.	
						Temp.	dissip.							
3	1	BIOS	87C196KC	PTV-BIOS										
4	2	Eriste	8 mm x 30 mm	Lasinkirkas polykarbonaatti 0,175 mm Kaksipuoleinen teippi toiselle puolelle. Liima 3M 467 MP							Screenhouse			
5	1	Eriste	12 mm x 4 mm	Kaptonteippi 3M 5413	Rulla 12 mm x 33 m					5413-012	Hot Melt Oy			
6	1	Eriste	D=12 mm L=20	Kutistesukka										
7	1	Eriste	D=4mm L=12	Kutistesukka										

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