

CENTURION



SaitekTM

ST42C

DOC. NO. : ST42C-PG-013
REV. : 0
DATE 3, April, 1998

CENTURION GENERAL PRODUCT SPECIFICATIONS

- A. Battery requirement : 1.5 Volt (size 'C' or 'UM-2') x 4 pcs
Alkaline type recommended
- B. Battery Operating voltage : 4.4 – 6.8 Volts
- C. Adapter Operating Voltage : 8-12V
- D. Current consumption :
- a) Normal mode at B+ = 6V
(with 2 LEDs on)
35mA typical
50mA max.
 - b) Memory mode at B+ = 6V
10μA typical
50μA max
 - c) Normal mode when adapter input=9V
(with 2 LEDs on)
35mA typical
50mA max.
 - b) Memory mode when adapter input=9V
4mA typical
8mA max
- E. Power consumption : 315mW typical
450mW max
- F. System clock frequency : 10MHz +/-1% (at B+ = 6V)

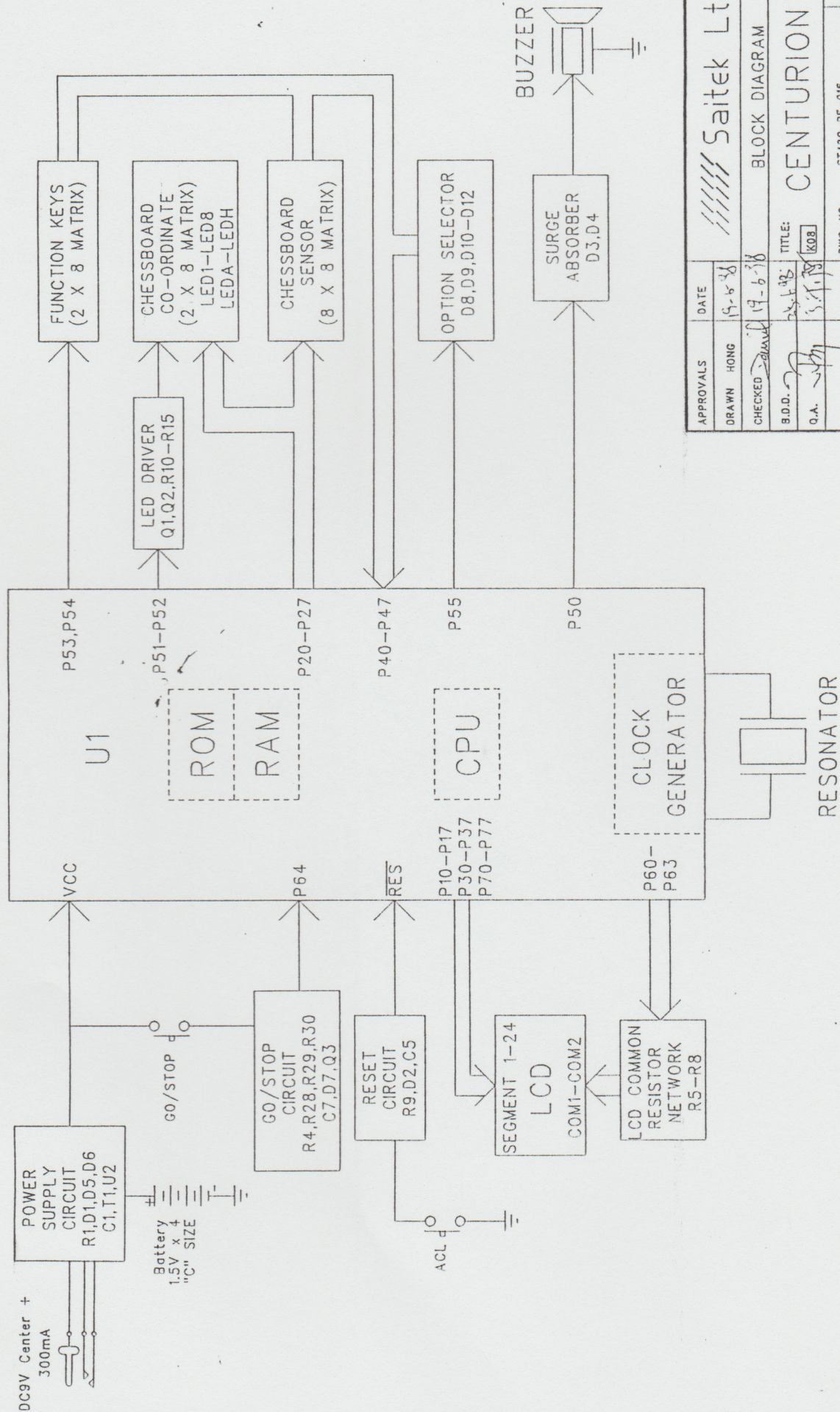
PREPARED BY : Daniel
Daniel Fong

APPROVED BY : 30

DIST : BDM, QAM, SED, PE

Filename : /BDD/ST42C-PS Doc

REVISION		ECN	REV.
DATE	DESCRIPTION	NO.	NO.



APPROVALS	DATE	Saitek Ltd.	
DRAWN HONG	19-5-88	BLOCK DIAGRAM	
CHECKED <i>[Signature]</i>	19-6-88	CENTURION	
B.D.D. <i>[Signature]</i>	22-6-88	TITLE: <i>[Signature]</i>	
Q.A. <i>[Signature]</i>	3-7-88	DWG. NO. ST42C-PE-016	
REV 4.0		REV 4.0	

Dist: BDM, GAM, SED, PE

PROJECT : CENTURION
DOC. NO. : ST42C-PS-014
REV. : 0
DATE : 3, April, 1998

Adjustment Procedure for ST42C

- Object : To adjust system clock frequency
- Equipment needed : Frequency counter or Oscilloscope capable of frequency measurement up to 20MHz.
- Procedure :
1. Disassemble unit by removing screws (5) on bottom cabinet.
 2. Power up the unit ($B+ = 6V$)
 3. Place probe of counter/scope at pin 9 (pin 10) of U1.
If frequency measured is out of specified range (9.9-10.1MHz), replace C4 or C3 until counter/scope reading is within specification.
 4. Reassemble unit.

PREPARED BY : Daniel
Daniel Fong

APPROVED BY : 30

DIST : BDM,QAM,SED,PE

Filename : /BDD/ST42C-PS.Doc

PROJECT : CENTURION
 DOC. NO. : ST42-PS-015
 REV. : 0
 DATE : 3, April, 1998

ST42C Trouble Shooting Chart

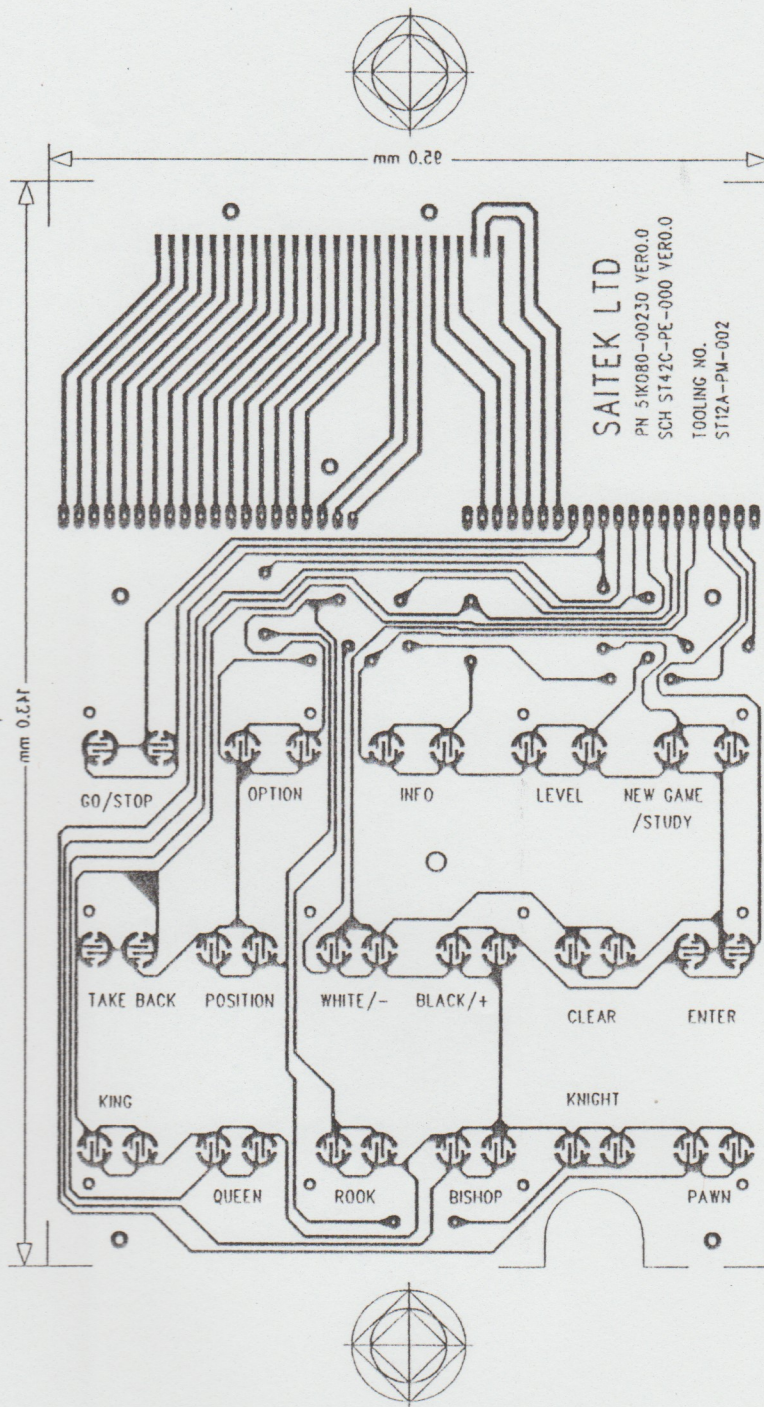
3
Daniel

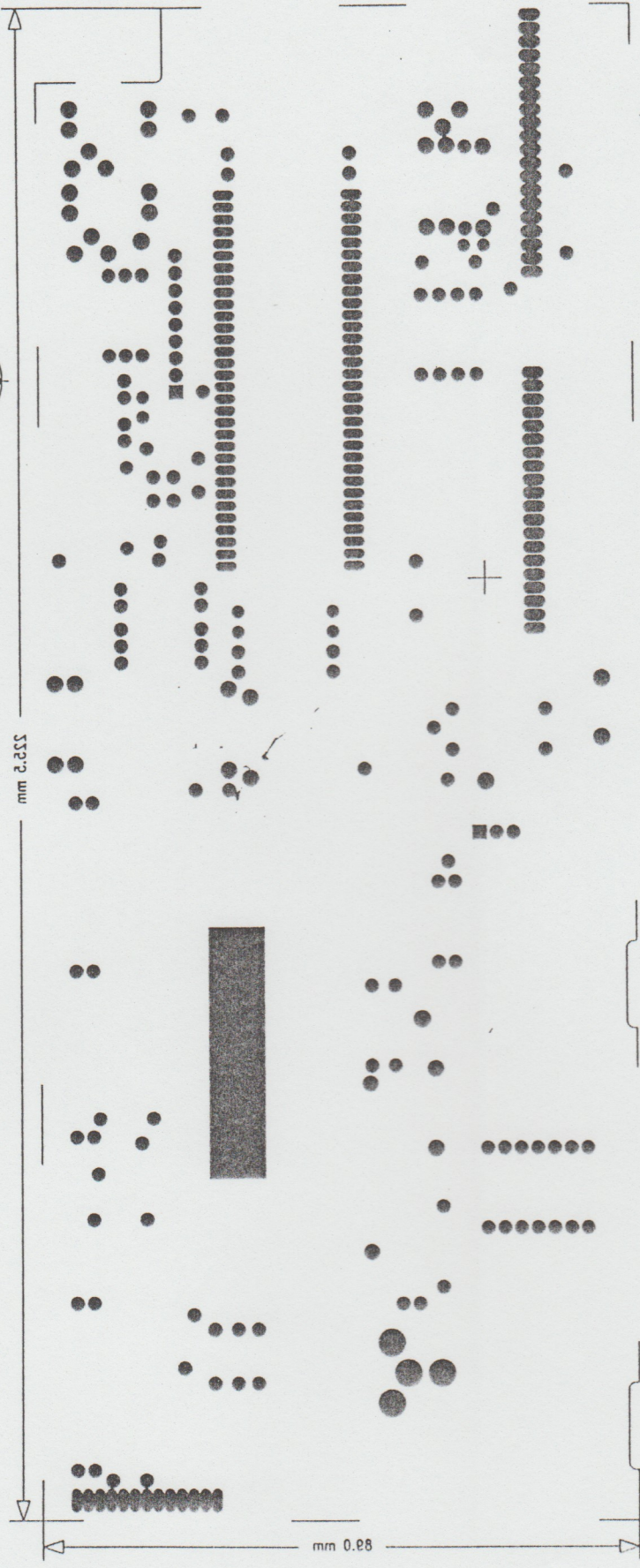
SYMPTOMS	POSSIBLE CAUSES
Unit cannot be turned ON	1. Check if VCC within the range from 4.0V to 6.0V. If it is not within this range, check for : i) Dead or weak batteries. ii) Adapter output within 6.6V-12.0V (if adapter is used). iii) Broken connections in battery wiring. iv) Open or short circuit in Ground and Vcc traces. v) Check if ACL switch is shorted to Ground. vi) Defective components in power supply circuit (i.e.U2, D1, D6, C1, T1,L2) 2. Check for reset signal : Check for U1 pin 8 is logic 'HIGH'. If not, check if C5, D2, R9 are defective. 3. Check for 10MHz$\pm$1% (Vcc=5.0V) at U1 pin9 or 10. If not, check if C3, C4 , X1 are defective. 4. Check if GO/STOP circuit components are defective (R4, GO/STOP key) 5. Check if U1 is defective.
No sound	1. Check for broken wirings from beeper to PCB. 2. Check if beeper is defective. 3. Check if D3, D4, are defective. 4. Check for pulses output from U1 pin 25 when 'SOUND ON'.
LCD segments missing or wrong LCD segments	1. Check for broken or shorted traces on PCB 2. Check for loose contacts or misalignment between LCD and PCB. 3. Check for bad contacts in zebra connector. 4. Check if R5-R8 are defective. 5. Check if U1 is defective
LED missing or turn on when it should not	1. Check for broken or shorted traces on PCB. 2. Check if LED is defective. 3. Check if R10-R15 and Q1, Q2 are defective. 4. Check if U1 is defective.

No response or improper response to command keys or chessboard	1. 2. 3. 4. 5. 6.	Check for loose contacts or misalignment between sensors and PCB traces. Check for bad contacts in sensor connectors. Check for broken or shorted traces on PCB or sensor. Check for logic 'HIGH' at U1 pin 17-24 when no key is pressed. Check if R20-R27 are defective Check if U1 is defective.
No memory function	1. 2.	Check if batteries are dead or weak. Defective U1.
Excessive current drain Current > 50mA when 'ON' Current >50μA when 'MEMORY'	1. 2. 3.	Check for component wirings or shorted traces on PCB. Check for contaminations and/or foreign particles on PCB. Check if U1 is defective.
Generates illegal moves	1. 2.	Check if batteries are exhausted. Check if U1 is defective.

Dist : BDD,QAM,SED,PE

Filename : /BDD/ST42C-PS.Doc





SRI TEK - ST42C2 3 JUL 1998

3:1 27/1/98 6/15/1998

REV	ITEM	WAS	IS	DATE	DRAWN	CHECK	BDD	QA
				DESCRIPTION OF CHANGE				
				TITLE log: PCB solder side solder mask				
				PROJECT ST42C				
				DWG NO. ST42C-PE-002				
				P/N 5.1.A.1.2.5-10.1.1.31				
				MATERIAL 1.6 mm P.P.				
				FINISH				

3RD	ANGLE	PROJECTION	SIGNATURE	DATE
			Drawn by Daniel	3/7/98
TOLERANCES				
DIM:				
SCALE: 1:1				
UNIT mm				
QUANTITY				
SHEET 5 OF 5				



SAI TEK - ST42C2 3 JUL 1998

3RD	ANGLE	PROJECTION	SIGNATURE	DATE	REV	ITEM	WAS	IS	DATE	DRAWN	CHECK	BDD	OK
TOLERANCES	ANGLE		Signature	3/7/98	3	1							
SCALE	1:1	UNIT mm	DRAWN BY										
QUANTITY			CHECK BY										
SHEET	3	OF 5	ENGRG AUTH										
			O.A. APPD										
			BDD APPD										
TITLE: Saitek DWG NO: ST42C-PE-002 PROJECT: ST42C P.N.: 511, A1, 2, 3, 1, 1, 1, 31 MATERIAL: 1.6 mm PP FINISH:													



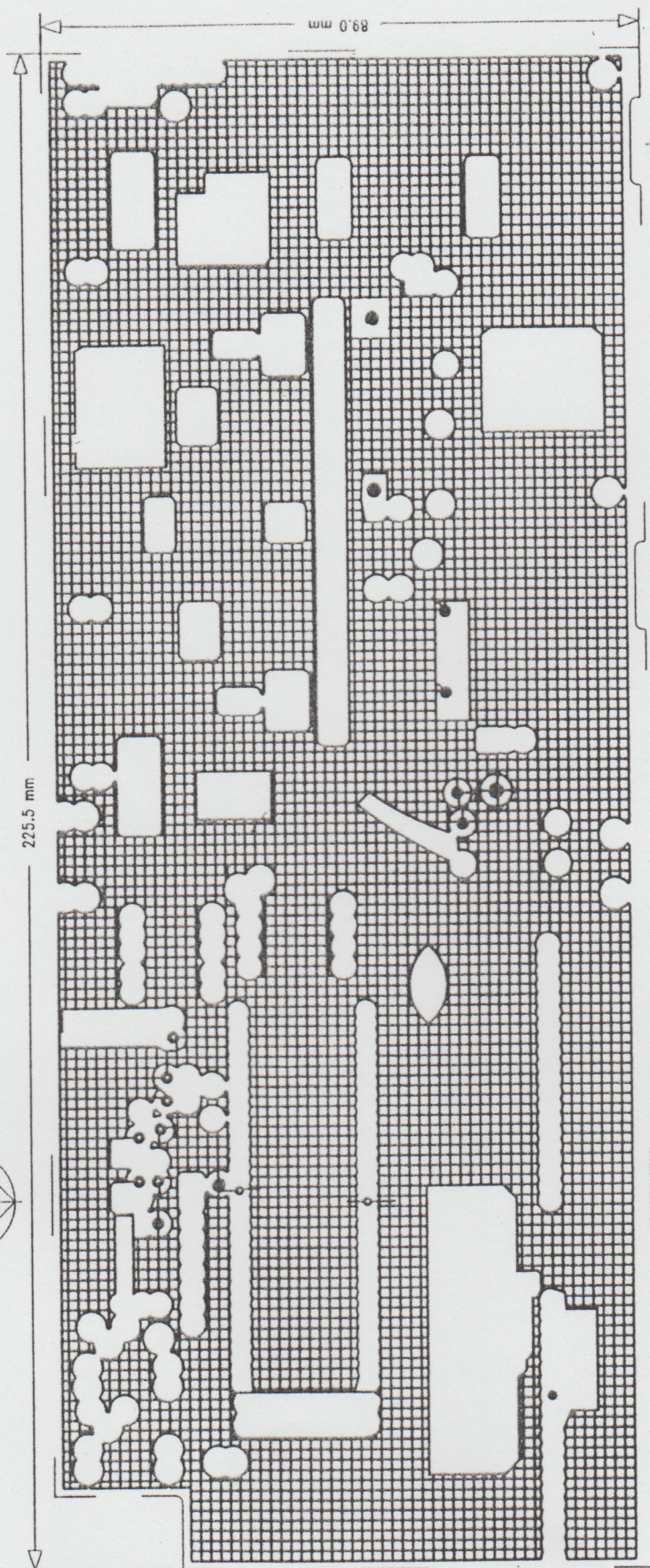
3RD	ANGLE	PROJECTION	SIGNATURE	DATE	REV	ITEM	WAS	IS	DATE	DRAWN	CHECK	BDD	QA
TOLERANCES	ANGLE		DRAWN BY	3/17/98			DESCRIPTION OF CHANGE						
DIM.			CHECK BY										
SCALE	1:1	UNIT mm	ENGRG AUTH										
QUANTITY			Q.A APPD										
SHEET 4	OF 5		BDC APPD										

311
 7th Fl.
 601 Stop Circuit
 2 w/m

TITLE: Saitek
 PROJECT: 5142C
 DWG. NO: 5142C-PE-002
 PIN: 511A125-01131
 MATERIAL: 1.6mm B.P.
 FINISH

Logic Arrows (PCB) inside

9/25



SAI TEK - ST42C2 3 JUL 1998

[illegible]

3 | 1 | 2 | 2.5 km

TITLE: Top Copper Grid.

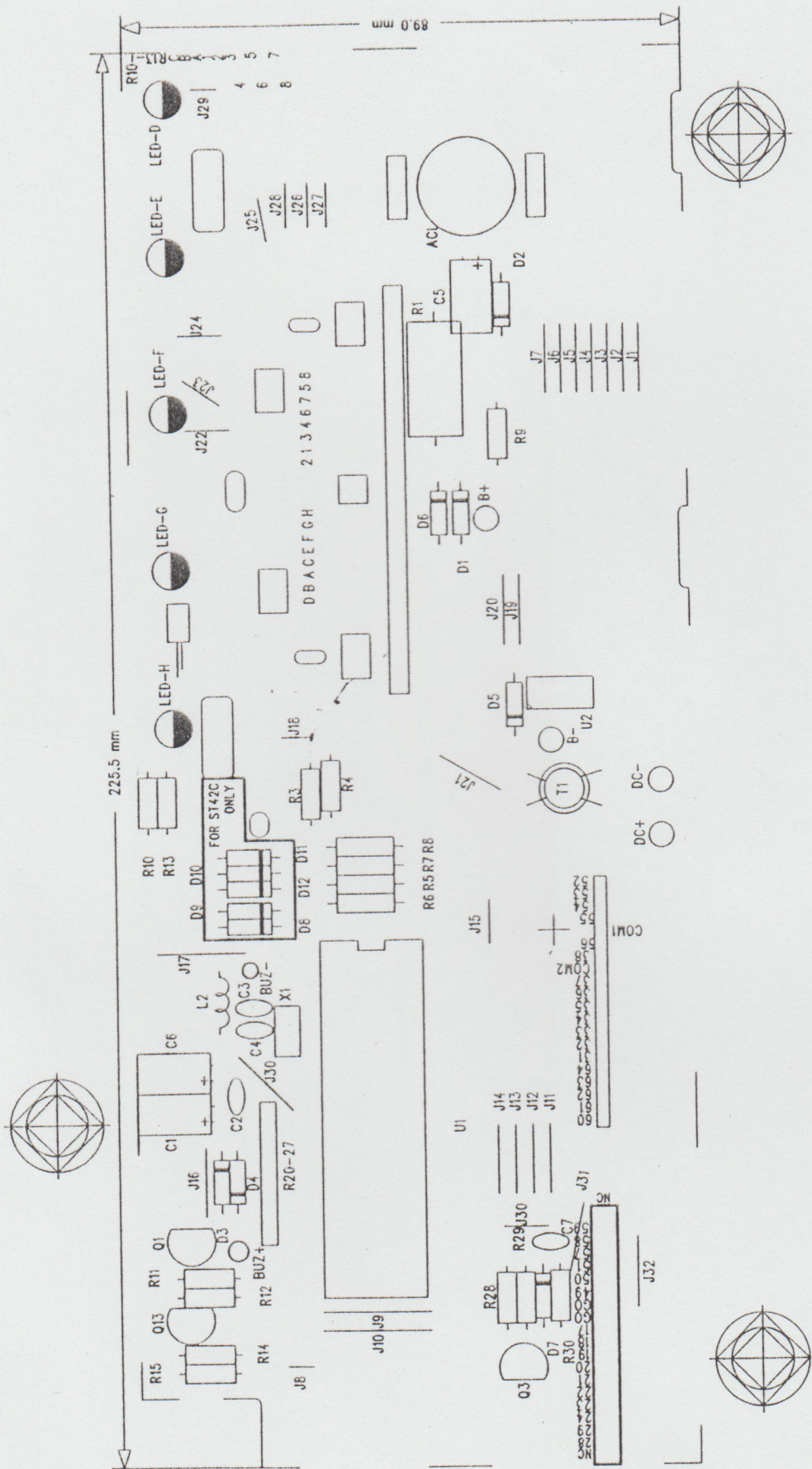
DWG NO: 5742C-17E-002 PROJECT: 5742C

P/N.. 51A125-101113

MATERIAL 1.5 mwa 8.8.

FINISH

10/5



SAITEK - ST42C2 3 JUL 1998

3.1. *as P1, out of spec. circuit*

3RD	ANGLE	PROJECTION	SIGNATURE	DATE	REV	ITEM	WAS	IS	DATE DRAWN	CHK	APPROVED
TOLERANCES			<i>Demul</i>	317198							
DIM	ANGLE										
SCALE	1:1	UNIT, mm									
QUANTITY											
SHEET	1	OF 5									

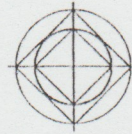
SAITEK TITLE: *ST42C*

DWG NO: *ST42C-PE-007* PROJECT: *ST42C*

P/N: *511A1125-1011131*

MATERIAL: *1.6 mm P.P.* FINISH:

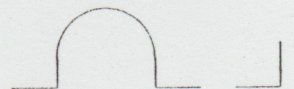
1+1-



mm 0.28

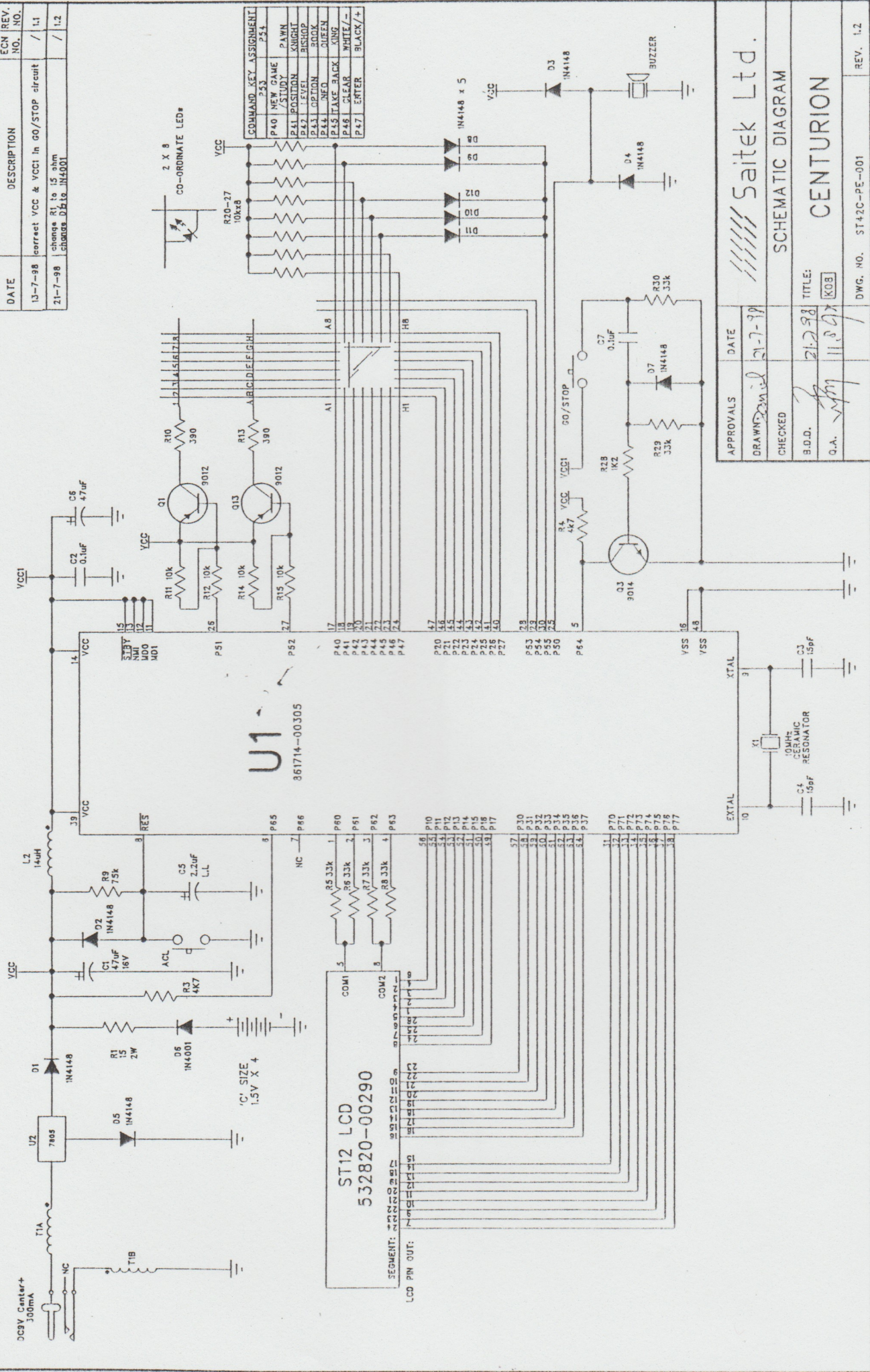


mm 1.30



12/28

REVISION		
DATE	DESCRIPTION	ECN REV. NO.
13-7-98	correct VCC & VCC1 in GO/STOP circuit	/ 1.1
21-7-98	change R1 to 15 ohm change D2 to 1N4001	/ 1.2



APPROVALS	DATE
DRAWN: <i>[Signature]</i>	21-7-98
CHECKED: <i>[Signature]</i>	
B.O.D.: <i>[Signature]</i>	21-7-98
Q.A.: <i>[Signature]</i>	11-8-98

SAITEK LTD.
SCHEMATIC DIAGRAM
CENTURION

DWG. NO. ST42C-PE-001 REV. 1.2

Dist: BOM, 2AM, PED, PE

SAITEK

BILL OF MATERIALS

PROJECT : ST42C (Centurion)
ART.NO. : K08
SHIP VER. : EV
REVISION : 1

REVISION HISTORY

<u>REVISION</u>	<u>DATE</u>	<u>BY</u>	<u>DESCRIPTION OF CHANGES</u>
P1	20/1/98	K.H. Au	Preliminary BoM.
1	8/4/98	K.H. Au	Delete, add and change components in guts, casing and cabinet set assembly, for pilot run.

RELATED DOCUMENTS REV

Schematic dwg : ST42C-PE-001 0

Prepared by :

K.H. Au

Approved by :

BDM

Distribution :

+1.00 [X] MMM, FAM, SED; QAM

+0.10 [] MMM, FAM, SED; QAM

+0.01 [] MMM, SED

Date issue : 14 APR 1998

15/25

98K080

- ST42C

CENTURION

Rev : 1

Level	Item	Chg	Stock Code	Rev	Cons	Description	Qty Per Reference
1			98K080-00000	1		UNIT ASSEMBLY, ST42C	1.000
2			91K080-00001	1		GUT ASSEMBLY - LOGIC, ST42C	1.000
3			51A125-01112	RC		PCB, LOGIC, S.S. 1.6MM, P. PHENOLIC, ST42C	1.000
3			381714-00000	RC		MICROPROCESSOR, SX42, DIP, 16MHZ	1.000
3			870031-00000	RC		STAT, MICROPROCESSOR, 3214, HITACHI, DIP	1.000
3			621000-03130	RC		CRYSTAL, 10MHZ, 30P2H	1.000
3			690018-7205F	RC		ELECT, REGULATOR, 5V, TO-220F, NJM7805FA	1.000
3			613005-11102	RC		RESISTOR, FIXED, C-FILM, 39, 5%, 1/3W, 9	1.000
3			614035-22109	RC		RESISTOR, ARRAY, C-FILM, 10KX3, 5%, 1/3W, 9	1.000
3			614725-31102	RC		RESISTOR, FIXED, C-FILM, 4K7, 5%, 1/4W	1.000
3			613335-31102	RC		RESISTOR, FIXED, C-FILM, 30K, 5%, 1/4W	1.000
3			617535-31102	RC		RESISTOR, FIXED, C-FILM, 75K, 5%, 1/4W	1.000
3			813915-31102	RC		RESISTOR, FIXED, C-FILM, 390, 5%, 1/4W	1.000
3			611035-31102	RC		RESISTOR, FIXED, C-FILM, 10K OHM, 5%, 1/4W	1.000
3			62104K-01611	RC		CAPACITOR, C-CAP, 0.1UF, +/-10%, 16V	1.000
3			62150J-05014	RC		CAPACITOR, C-CAP, NPO, 15PF, +/-5%, 50V	1.000
3			82476M-01615	RC		CAPACITOR, E-CAP, 47UF, +/-20%, 16V	1.000
3			62223Z-01616	RC		CAPACITOR, E-CAP, 2.2UF, +/-80-20%, 16V, L.L.	1.000
3			630003-10000	RC		INDUCTOR, TOROID, 16T	1.000
3			630007-20000	RC		INDUCTOR, RFL, 14UH, +/-10%, Q=44MIN	1.000
3			655817-34015	RC		DIODE, SCHOTTKY, IN5817, 20 TO 40V, 1A	1.000
3			654148-10000	RC		DIODE, SWITCHING, IN4148	1.000
3			670230-12020	RC		TRANSISTOR, PNP, 9012G, CENTRE B	1.000
3			000050-50155	RC		JUMPER, L=5MM, LL=15MM, D=0.5MM	1.000
3			000050-80155	RC		JUMPER, L=8MM, LL=15MM, D=0.5MM	1.000
3			000051-20155	RC		JUMPER, L=12MM, LL=15MM, D=0.5MM	1.000
3			000051-50155	RC		JUMPER, L=15MM, LL=15MM, D=0.5MM	1.000
3			000051-80155	RC		JUMPER, L=18MM, LL=15MM, D=0.5MM	1.000
3			000030-00830	RC		CONN ARRAY, N=18, L=70MM, P=2.0MM, E=3.5MM	1.000
3			660003-12205	RC		LED, RED, RECT, 2X5MM, TOSHIBA, TLR208	1.000
3			000011-00100	RC		ACL, RESET CONTACT, D=10MM, STAINLESS STEEL	1.000
3			000030-01130	RC		CONN ARRAY, N=20, L=150MM, P=2.0MM, E=3.5MM	1.000
3			912090-00002	1		GUTS ASSEMBLY - LED	1.000
3			512070-02020	RC		PCB, LED, S.S. PAPER PHENOLIC	1.000
3			660005-12205	RC		LED, RED, RECT, 2X5MM, TOSHIBA, TLR208	1.000
3			000030-00080	RC		CONN ARRAY, N=13, L=17MM, P=1.75MM, E=1.5MM	1.000
3			91K080-00003	1		GUTS ASSEMBLY, LCD & KEYPAD, ST42C	1.000
3			51A125-00230	RC		PCB, LCD & KEY, SS, 1.6MM, P. PHENOLIC, ST42C	1.000
3			000050-80155	RC		JUMPER, L=8MM, LL=15MM, D=0.5MM	1.000
3			98K080-00000	1		CASING ASSEMBLY, ST42C	1.000
3			312710-05212	RC		SENSOR, CHESSBOARD, COMBO, ST8, EMC	1.000
3			322090-00421	RC		OVERLAY, ST42C, CHESSBOARD, COMBO, LEXAN	1.000
3			352730-02100	RC		INLAY, FOR JACK, PVC, BLACK, EMC, ST19	1.000
3			220000-00609	RC		METAL, PLATE, 198X198MM, W/D-TAPE, ST110	1.000
3			22K080-00700	RC		METAL, B-CONT, +VE, PH BRONZE, NI-PLT, ST42C	1.000
3			22K080-00800	RC		METAL, B-CONT, -VE, PH BRONZE, NI-PLT, ST42C	1.000
3			250000-00150	RC		RUBBER ROD, 48X2.9X2.8MM, COMPRESS KE951U	1.000

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94K080

- ST42C

CENTURION

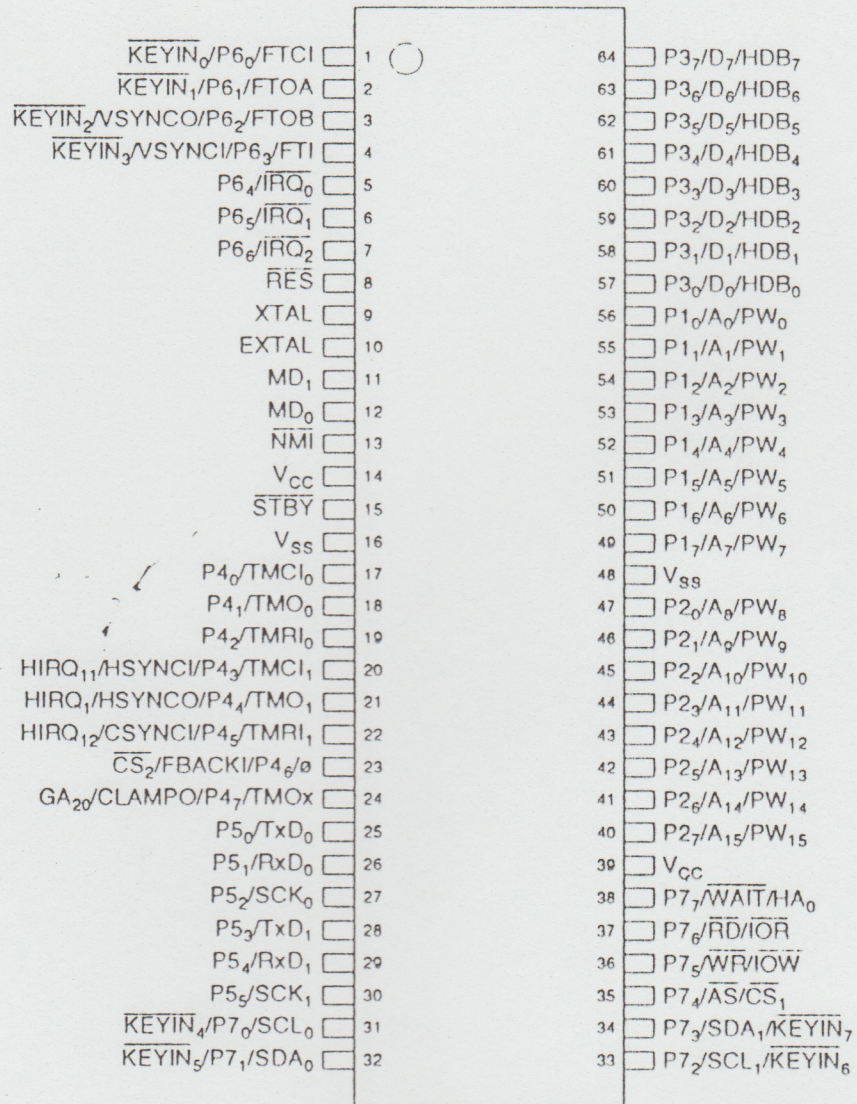
Rev : 1

Level	Item	Chg	Stock Code	Rev	Cons	Description	Qty	Per	Reference
3	43		000230-00002	RC		SOCKET, DC POWER JACK, TC 18-014	1.000		
3	44		000101-01002	RC		SPONGE, 10X10X2MM	1.000		ACC.
3	45		000106-04003	RC		SPONGE, 60X40X3MM	1.000		FOR BATT. LID
3	46		000073-21434	RC		SCREW, S/T, +PAN, M2.6X3MM, A	7.000		
3	47		000073-21564	RC		SCREW, S/T, +PAN, M3.0X14MM, A	5.000		
3	48		000130-00270	RC		BUTTER, D=27MM	1.000		
3	49		000062-24043	RC		STRAND WIRE RED, L=240MM, E=3.5MM, AWG 28	1.000		V9 TO +CONT
3	50		000060-21043	RC		STRAND WIRE AWG28, E=3.5MM, L=210MM, BLACK	1.000		V0 TO -CONT
3	51		000063-17043	RC		STRAND WIRE, ORANGE, L=170MM, E=3.5MM, AWG28	1.000		DC+ TO JACK
3	52		000065-17043	RC		STRAND WIRE AWG28, E=3.5MM, L=170MM, GREEN	1.000		DC- TO JACK
3	53		000021-00020	RC		RUBBER FT, 3M/MIG, FREE, D6.5X3.2MM, ADHE.	4.000		
3	54		000062-20043	RC		STRAND WIRE, RED, L=200MM, E=3.5MM, AWG28	1.000		BATT +
3	55		000060-20043	RC		STRAND WIRE BLACK, L=200MM, E=3.5MM, AWG28	1.000		BATT -
3	56		342070-03700	RC		NAME PLATE, AL, KASPAROV, SILK SCREEN, ST38	1.000		
3	57		000030-00320	RC		FOAM PAD, 52X25X6MM	1.000		FOR LCD
3	58		532088-00380	RC		LCD, FOR ST12B	1.000		
3	59		250000-00525	RC		ZEBRA CONNECTOR, SG, 51.4X2.4X3.2MM	1.000		
3	60		252070-01401	RC		RUBBER, CONDUCTIVE, GREY, SILICONE, ST38	1.000		
3	61		95K080-00000	1		CABINET SET, ST42C	1.000		
3	62		21A125-00114	RC		PLASTIC, T.CAB, HIPS, BLK, SPY, SILVER, ST42C	1.000		
3	63		212070-00274	RC		PLASTIC, B.CAB, HIPS, BLACK, ST42C	1.000		
3	64		212070-00500	RC		PLASTIC, PIECE DOOR, HIPS, BLACK	1.000		
3	65		212070-00320	RC		PLASTIC, BATT. LID, HIPS, BLACK	1.000		
3	66		212070-00420	RC		PLASTIC, KEY TOP(A), HIPS, SPY SILVER, ST42C	5.000		
3	67		21A103-06000	RC		PLASTIC, KEY TOP(B), HIPS, SPY SILVER, ST42C	12.000		
3	68		212070-03500	RC		PLASTIC, ACL SW PIN, HIPS, BLACK	1.000		
3	69		215120-02503	RC		PLASTIC, LOCK PIN, NYLON 66, WHITE	1.000		
3	70		94K080-10000	1		PACKING ASSEMBLY, ST42C	1.000		
3	71		24K080-31600	1		CHESSMEN SET, ST42C	1.000		
3	72		262050-001A1	RC		CHESSMEN, VOIC, 16, SPRAY SILVER, MAGNET	1.000		
3	73		262050-001G1	RC		CHESSMEN, VOIC, 16, SPRAY M. GREY, RUB MAGNET	1.000		
3	74		262050-101A1	RC		CHESSMEN, VOIC, 16, SPRAY SILVER, MAGNET	1.000		OPTION
3	75		262050-101G1	RC		CHESSMEN, VOIC, 16, SPRAY M. GREY, RUB MAGNET	1.000		OPTION
3	76		000123-00200	RC		POLYBAG, 300X200X0.045MM	1.000		UNIT
3	77		000124-50310	RC		POLYBAG, 450X310X0.045MM	1.000		
3	78		45A050-00800	RC		POLYFOAM SET, POLYFOAM 1	1.000		
3	79		45A050-00900	RC		POLYFOAM SET, POLYFOAM 2	1.000		
3	80		45A125-00500	RC		CARTON FOR ST12A, 5 PCS/CTN	1.000		
3	81		97K080-00000	1		OPTIONS ASSEMBLY, ST42C	1.000		
3	82		41K080-61000	RC		MANUAL, ST42C, G/F/E/D/I/S	1.000		
3	83		42K080-61000	RC		GIFTBOX, ST42C, G/F/E/D/I/S	1.000		
3	84		430100-61000	RC		ADDENDUM, ADAPTOR WARNING, E/G/F/D/S/I	1.000		
3	85		490000-00020	1		RULE OF CHESS LISTING ASSEMBLY	1.000		
3	86		430156-01000	RC		BOOK, RULES OF CHESS, ENGLISH, SWL	1.000		
3	87		430157-03000	RC		BOOK, RULES OF CHESS, FRENCH, SWL	1.000		

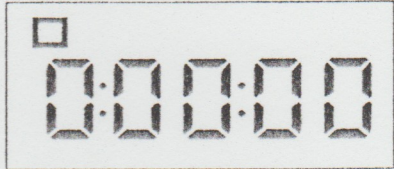
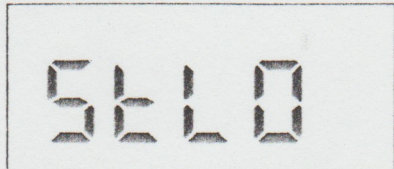
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3	84		430158-46000		RC		BOOK, RULES OF CHESS, G/D/I/S, SWL	.000		
2					1		LABEL ASSEMBLY	1.000		
3	85		370000-00000		RC		LABEL, COM#1, FOR SWL, ENGLISH, CE LABEL	.000		ECN-96019
3	86		370000-00103		RC		LABEL, COM#1, FOR SWL, ENGLISH, CE LABEL	.000		RUNNING CHANGE
3	87		370000-19801		RC		LABEL, FOR ALL PRODUCTS EXC. PCP TO FRANCE	.000		ECN-97122
3	88		370000-19800		RC		LABEL, COM#193, MADE IN CHINA, TRANNRHON	.000		ECN-97122, USE-UP
3	89		370000-18200		RC		LABEL, MADE IN CHINA, ADHESIVE	.000		ECN 96235
3	90		370000-20100		RC		STICKER, COM#201, "AGES 8 AND UP"	.000		
3	91		370000-01001		RC		LABEL, COM#10, FOR OTTO GIFT BOX	.000		OTTO
3	92		370000-01100		RC		LABEL, COMMON, NO:11, FOR PLATETIME BOX	.000		PLATETIME
3	93		370000-01200		RC		LABEL, COMMON, NO:12, FOR SEARS, CAN	.000		SEARS
3	94		370000-01300		RC		LABEL, COMMON, NO:13, DICK SMITH ON BOX	.000		DICK SMITH
3	95		370000-07600		RC		STICKER, COM#78, GREEN POINT, GERMAN, COMM	.000		GERMAN
3	96		370000-03600		RC		ADDENDUM, COM#36, FOR ALL RECYCLE, QUELLE	.000		QUELLE
3	97		400063-01000		RC		ADDENDUM, E, FOR SIKI SHIPMENT, HELP LINE	.000		SYNTEGA
3	98		370000-11204		RC		ADDENDUM, DISTRIBUTORS LIST 97, ENGLISH	.000		ECN97056
3	99		370000-14100		RC		STICKER, COM#141, FOR L'WOODS CARTON, PAPER	.000		L'WOODS QTY=3
3	100		370000-17500		RC		STICKER, COM#175, TOY SYMBOL	.000		FOR NO TOY SYMB
3	101		370000-04900		RC		STICKER, COM#49, GREEN POINT, GERMAN LARGE	.000		
3	102		430026-01004		RC		CARD, ACCESSORY ORDER, E, SCI	.000		SCI, CHESS ONLY
3	103		430100-61000		RC		ADDENDUM, ADAPTOR WARNING, E/G/F/D/S/I	.000		ECN 95199
3	104		370000-15900		RC		ADDENDUM, COM#159, TOY SYMBOL, H+G	.000		ECN 95201
3	105		370000-20200		RC		STICKER, COM#202, USCF, FOR CHESS TO SCI	.000		
3	106		430123-01000		RC		CARD, USCF, FOR CHESS PRODUCTS TO SCI, E	.000		
3	107		370000-20401		RC		STICKER, H&G HOTLINE ON BACK OF UNIT	.000		
3	108		430124-02001		RC		ADDENDUM, INFO FOR CHESS, GERMAN, H+G	.000		GERMAN, ECN97228
3	109		430124-02000		RC		ADDENDUM, INFO FOR CHESS, GERMAN, H&G	.000		ECN-97220
3	110		370000-21000		RC		STICKER, COM#210, RECYCLE PAPER, 3 SUISES	.000		ECN-96109
3	111		370000-21100		RC		STICKER, COM#211, ADDRESS LABEL, FOR SEARS	.000		ECN-96161
3	112		370000-21800		RC		ADDENDUM, COM#218, RAT. WARNING, E/F/G/D/S/I	.000		ECN-97119
2					1		WARRANTY CARD LISTING ASSEMBLY	1.000		
3	113		430000-00010		RC		CARD, WARRANTY, E/G/F/D/S, SWL, CHESS	.000		CHESS PRODUCT
3	114		430000-51000		RC		CARD, WARRANTY, E/G/F/D/S, SWL, NON CHESS	.000		NON-CHESS
3	115		430064-02000		RC		CARD, GUARANTEE, SCHNEIDER, G	.000		SCHNEIDER
3	116		430048-01004		RC		CARD, GUARANTEE, E, CONTEMPORARY GAMES	.000		CCC, ECN-97194
3	117		430048-01003		RC		CARD, GUARANTEE, E, CONTEMPORARY GAMES	.000		USE-UP
3	118		430113-02002		RC		CARD, GUARANTEE, GERMAN, H+G	.000		ECN-97219
3	119		430113-02001		RC		CARD, GUARANTEE, GERMAN, H&G	.000		ECN-97219
3	120		370000-09200		RC		CARD, COM#92, GUARANTEE, TRANSFOM	.000		TRANSFOM
3	121		430120-01000		RC		CARD, WARRANTY, ENGLISH, SCI	.000		SCI
3	122		430162-02000		RC		CARD, GUARANTEE CARD, FOR H+G, PCP, GERMAN	.000		
3	123		430165-01001		RC		CARD, GUARANTEE, PCP, ENGLISH, SP	.000		ECN:97221

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ST42C



8. FUNCTIONAL TEST PROCEDURE FOR CENTURION

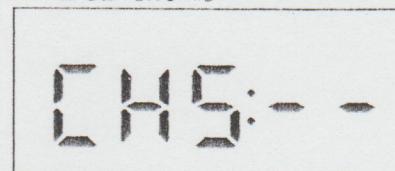
<u>Purpose</u>	<u>Procedure</u>	<u>Observation</u>
1. Power up	- Insert 4 C size batteries into the battery compartment	- See Table 1 - <i>Note: If 'E: ron' is flashing on LCD before LEDs and LCD scan test, the unit is defective</i> - New game sound is emitted after scanning of LEDs and LCD. - LCD shows 
2. QC test mode	- Press ACL - Press and hold ENTER for one second or more while LCD and LEDs scanning as Table 1	- LCD shows  for a while. - LCD and LEDs scanning according to Table 1 repetitively. <i>Note: If 'E: ron' is flashing on LCD before LEDs and LCD scan test, the unit is defective</i> - Press ENTER - LCD shows  <i>Note: if the display is different from one shown above the unit is defective</i>

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PurposeProcedureObservation

- Press function key according to Table 2
- Press 64 chessboard in sequences

- See Table 2
- A beep sound is emitted for each key pressed.
- LCD shows



where -- means the coordinates of the chessboard square pressed.

3. Reset unit

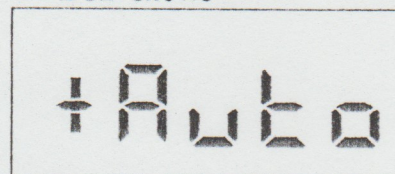
- Press ACL

- Same as 1

4. Multimoye

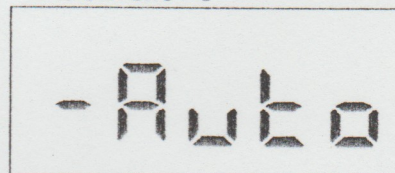
- Press OPTION

- LCD shows



- Press ENTER

- LCD shows



- Press CLEAR

- The white clock starts counting.

- Press square F2, F4, E7, E5, G2, G4 in sequences

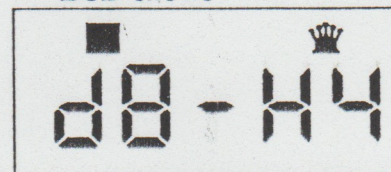
- Coordinate LEDs come on with a beep sound for each keypressed and LCD shows the corresponding move.

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PurposeProcedureObservation

- Press ENTER

- D8 LEDs are on and LCD shows



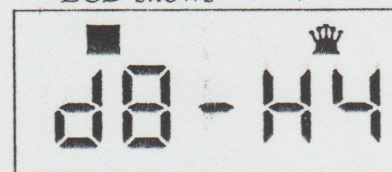
with "d8" flashes

- Press D8

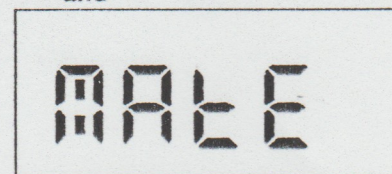
- H4 LEDs are on and LCD shows as above except "H4" flashes instead of "d8"

- Press H4

- A sequence of tone is played. LCD shows



and



alternatively, then after a while, white clock is displayed on LCD

5. Check memory

- Press GO/STOP

- All LEDs come off

- LCD blank

- Press NEWGAME (ENTER and CLEAR simultaneously) twice

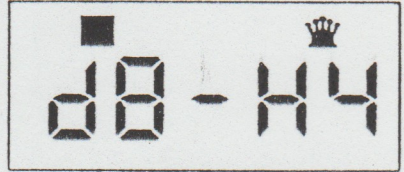
- No response

- Insert non-energized adapter plug

- Press GO/STOP

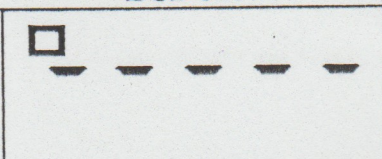
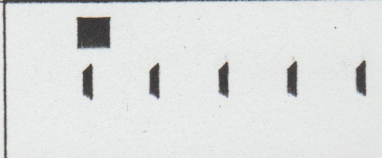
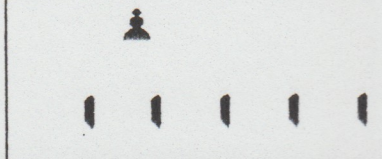
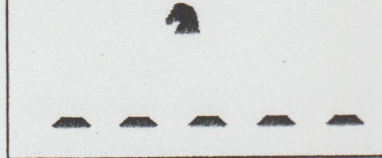
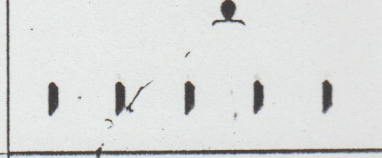
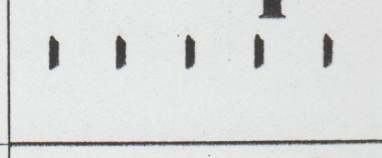
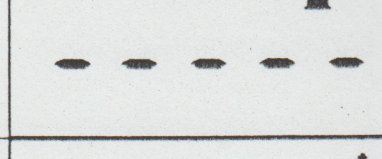
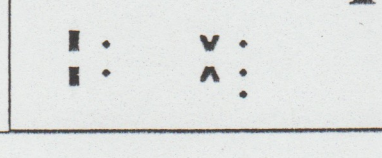
- White clock counting up

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<u>Purpose</u>	<u>Procedure</u>	<u>Observation</u>
6. Check adapter + batteries	- Press GO/STOP once	- LCD blank
	- Insert an energized adapter	- All LEDs come off
	- Press GO/STOP once	- Same as above
7. Check adapter	- Press GO/STOP once	- White clocks counting up
	- Press GO/STOP	- LCD blank
	- Remove batteries	- All LEDs come off
	- Press GO/STOP once	- Same as above
	- Press TAKEBACK	- White clock counting up
	- Press TAKEBACK	- H4 LEDs are on
		- LCD shows
		
		with "H4" flashes.
	- Press H4	- D8 LEDs are on and LCD shows as above except "d8" flashes instead of "H4"
	- Press D8	- Black clock stop counting
	- Remove the adapter	- All LEDs and LCD segment are OFF.
8. Test finished		

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Table 1

Sequences	LCD shows	Column LEDs ON
1		A1
2		B2
3		C3
4		D4
5		E5
6		F6
7		G7
8		H8

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Table 2

Keypress	LCD display	Keypress	LCD display
		POSITION	POS
		TAKEBACK	tb
		GO / STOP	No change
		OPTION	OPT
		INFO	Info
		LEVEL	LEV
ENTER	Ent	STUDIES	Std
CLEAR	CLr		
BLACK/→	■		
←/WHITE	□		

Note: Beep is emitted on each keypress except GO/STOP