

ENGLISH

4S-6042-00E0

29 SEP 1997

HAMEG[®]
Instruments

**Curve Tracer
HM6042**

SERVICE-MANUAL

HM6042



Main-Board	3
Main-Board	4
Main-Board	5
Frontcontrol- Board (Digital part)	6
Frontcontrol- Board (Digital part)	7
Frontcontrol- Board (Digital part)	8
XY- Board	9
XY- Board	10
CRT-Board	11
CRT-Board	12
Power Supply-Board	13
Power Supply-Board	14
Power Supply-Board	15
Electronics Parts list	16

SI.290997-g6RR

Curve Tracer HM6042

- Ease of Operation
- Characterisation and Test of Semiconductor Devices
- Accurate Cursor Measurements
- Quick and easy Comparison of Semiconductors
- Reference Data Memory
- On-Screen Display of 5 Curves
- Low Power Consumption



The **HM6042 Curve Tracer** is used to accurately display the characteristics of two and three terminal semiconductor devices. The instrument combines ease of operation and versatile features at an affordable price. Unlike its counterpart, the HM8042 plug-in unit, it uses a built-in **CRT** and an **LCD** to display the characteristics of the device under test.

The **HM6042** displays a set of 5 curves at a time. All numeric values and parametric data can be read out on a 2x16 digit **LCD**. Device type and all relevant parameters are selected and modified by a simple front-panel keypad entry. Collector voltage and current parameters are easily changed. A 3-step power limiter avoids damage of the **Device Under Test** by excessive power.

One set of parameters can be stored in memory for comparison of one device to another or a reference device. This feature gives substantial enhancements in productivity when matching semiconductors. Two cursors can be moved along the displayed curves. X and Y position of the cursor will be displayed on the screen. Basic accuracy is 2% of the measurement value. Measured parameters are: base voltage, base current, collector current, collector voltage and Beta. The dynamic parameters h_{11} , h_{21} , and h_{22} are **calculated** by the **internal processor**.

A device adapter socket with side-by-side terminals for two devices for the comparison of two semiconductors is supplied with the instrument. The **HM6042** is remarkably easy to operate. This makes the instrument also ideally suited for educational use.

Specifications

(Reference Temperature 23°C ± 1°C)

Measurement Ranges

3 Voltage Ranges:

Collector/Drain Voltages ≤ 2V, 10V, 40V ±5%

3 Current ranges:

Collector/Drain Currents ≤ 2mA, 20mA, 200mA ±5%

3 Power Ranges:

Output Power ≤ 0.04W, 0.4W, 4W ±10%

Base-/Gate-Voltages and Currents:

I_b 1μA to 10mA V_b to 2V ±5% V_g to 10V ±5%

Accuracy

Accuracy of Static Values:

$V_{c/d}$ ± (2% o.v.¹⁾ + 3 Dig.) $I_{c/d}$ ± (2% o.v. + 3 Dig.)

I_b ± (2% o.v. + 3 Dig.) V_b ± (2% o.v. + 3 Dig.)

V_g ± (3% o.v. + 3 Dig.)

β to 1000: ± (5 % o.v. + 3 Dig.)

to 100000: ± [(6 + 0.001 x β) % o.v. + 3 Dig.]

Accuracy of Dynamic Values:

h_{11} ≤ 1000Ω ± (12% o.v. + 3 Dig.)

≥ 1000Ω

± [(12 + 0.001 meas. value) % o.v. + 3 Dig.]

h_{21} ≤ 1000 ± (12% o.v. + 3 Dig.)

≥ 1000

± [(12 + 0.001 meas. value) % o.v. + 3 Dig.]

y_{21} ≤ 1000mS ± (12% o.v. + 3 Dig.)

h/y_{22} ≤ 1000mS ± (12% o.v. + 3 Dig.)

Miscellaneous

Reference measurement values can be stored for component selection.

Cursor Measurements:

Single mode: The Cursor marks the position from which the measurement value is calculated.

Tracking mode: Two Cursors mark the positions, from which the h/y-Parameter measurement values are calculated.

Evaluation of curves from:

Diodes, Zener Diodes, NPN/PNP-Transistors,
FET/MOS-FET (N/P-Channel), Thyristors

Display: 2x16-Digit, LCD

Presentation of measurement values from a set of 5 curves on CRT.

General Information

CRT: D14-364GY/123 or ER151-GH/-,

6" rectangular screen (8x10cm) internal graticule

Acceleration voltage: approx. 2000V

Trace rotation: adjustable on front panel

Line voltage: 100-240V AC ±10%, 50/60Hz

Power consumption: approx. 36 Watt at 50Hz.

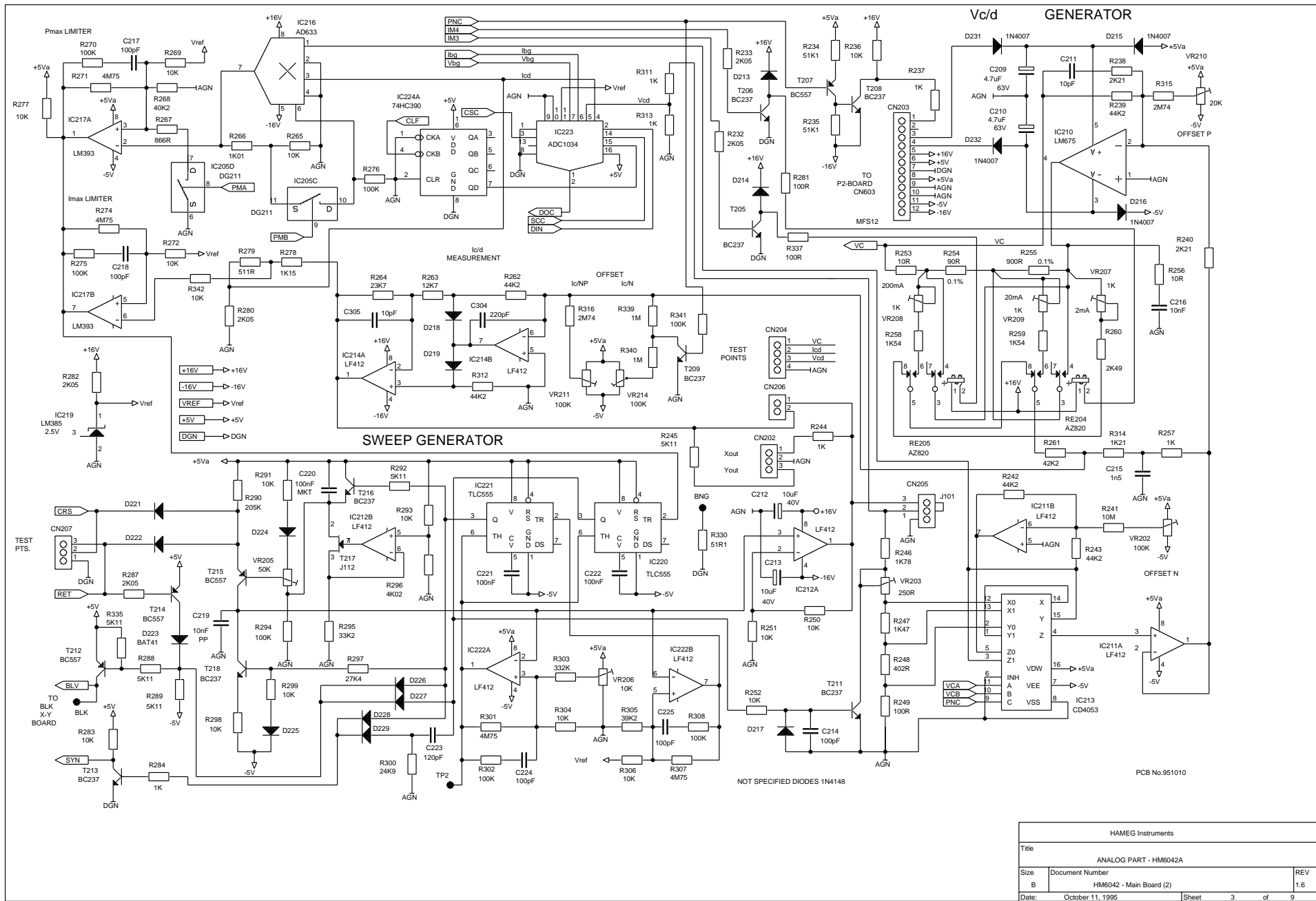
Min./Max. ambient temperature: 0°C...+40°C

Protective system: Safety class I (IEC 1010-1)

Weight: approx. 5.6kg, color: techno-brown

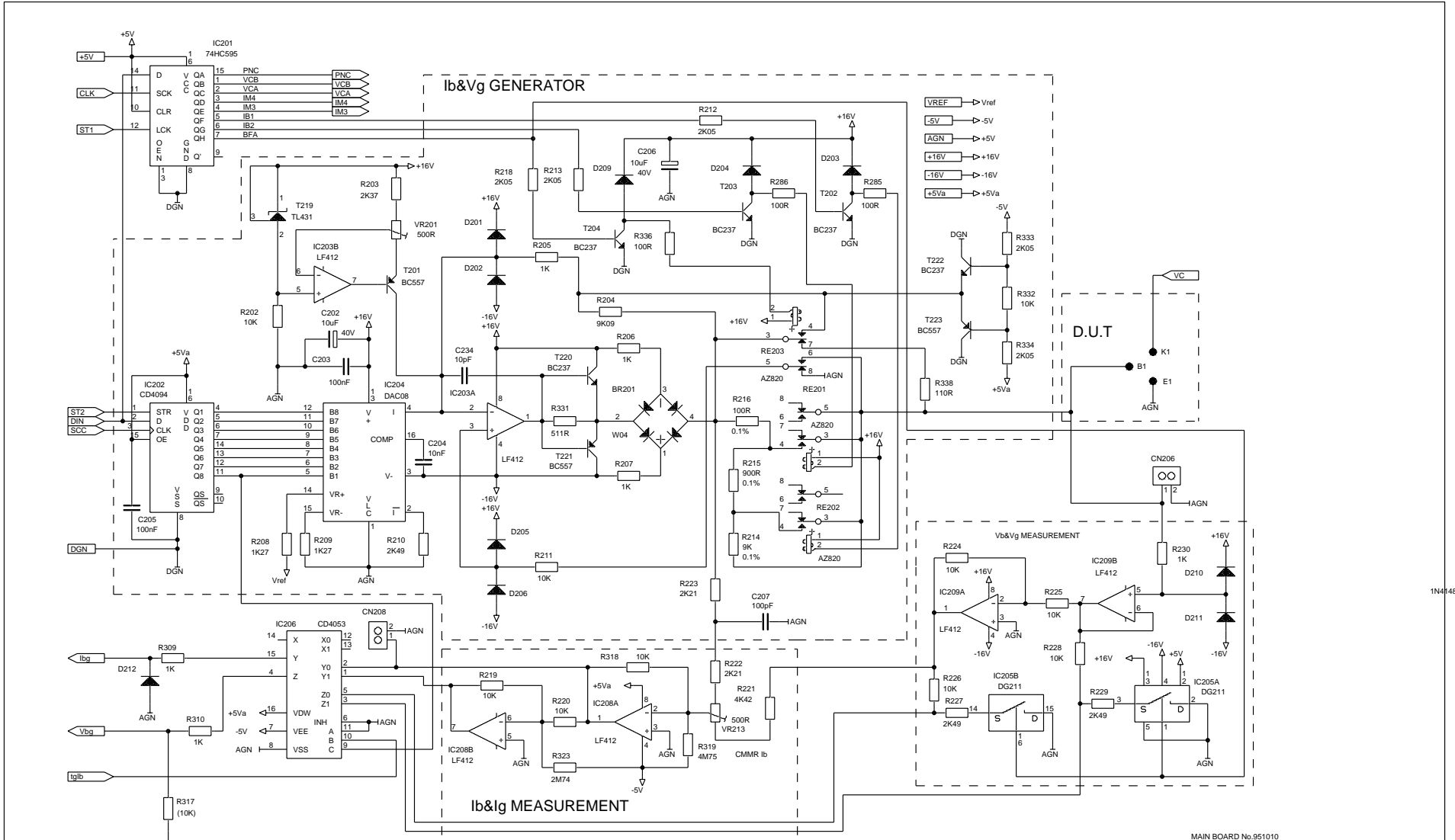
Cabinet: **W** 285mm, **H** 125mm, **D** 380 mm

1) o.v. = of value



HAMEG Instruments		
Title		
ANALOG PART - HM6042A		
Size	Document Number	REV
B	HM6042 - Main Board (2)	1.6
Date:	October 11, 1995	Sheet 3 of 9

Main-Board

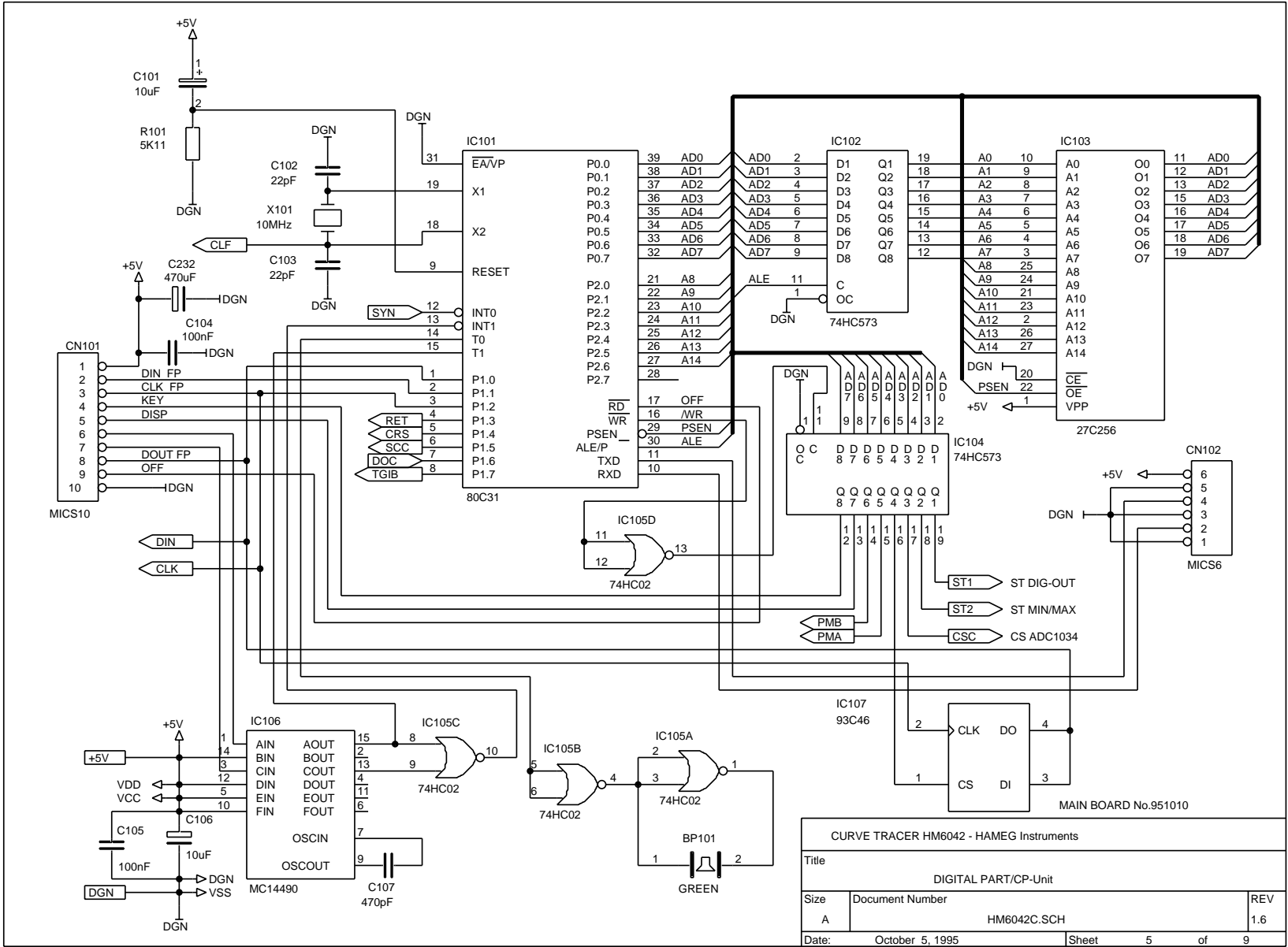


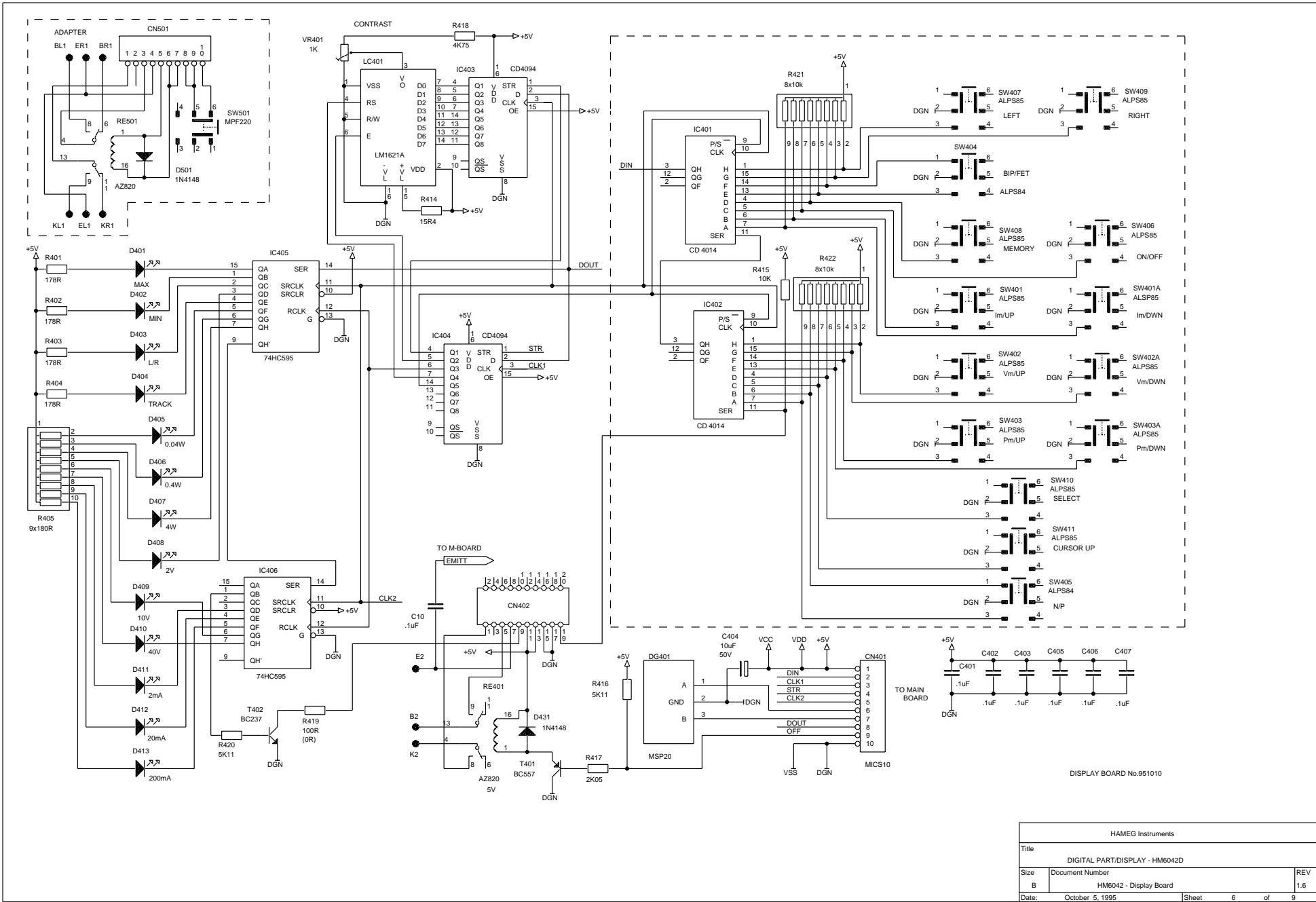
1N4148

MAIN BOARD No.951010

NOT SPECIFIED DIODES 1N4148

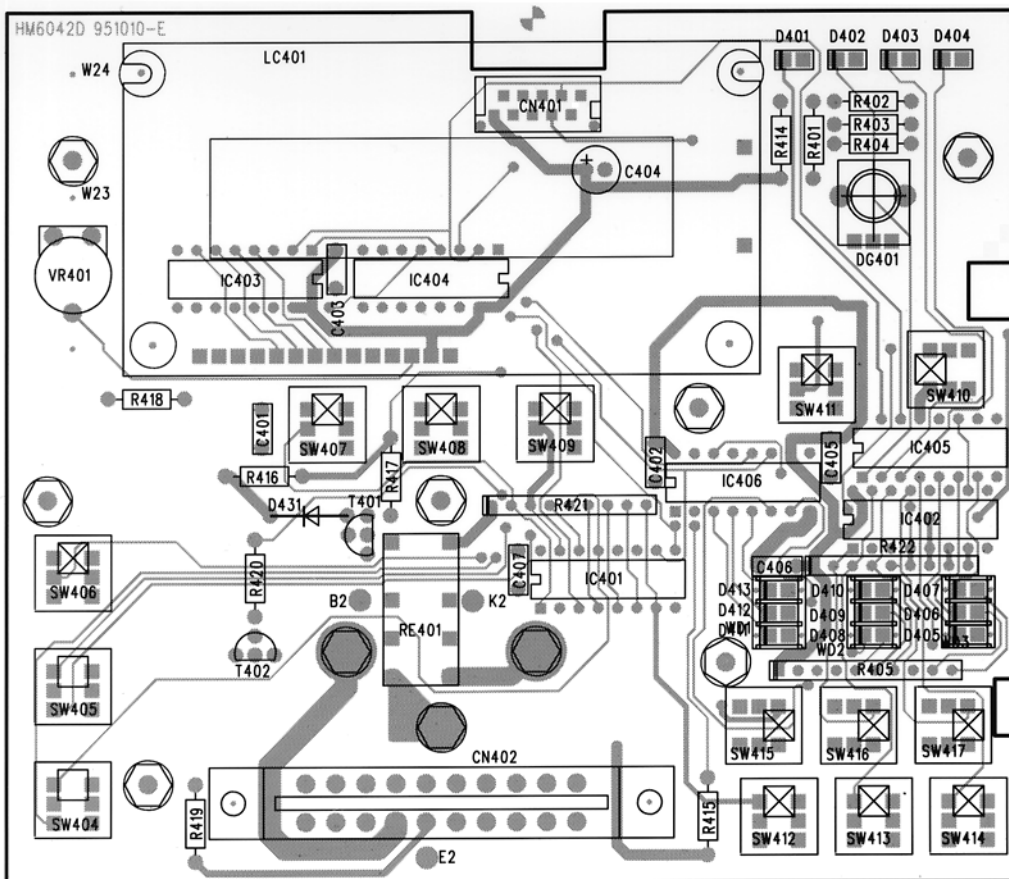
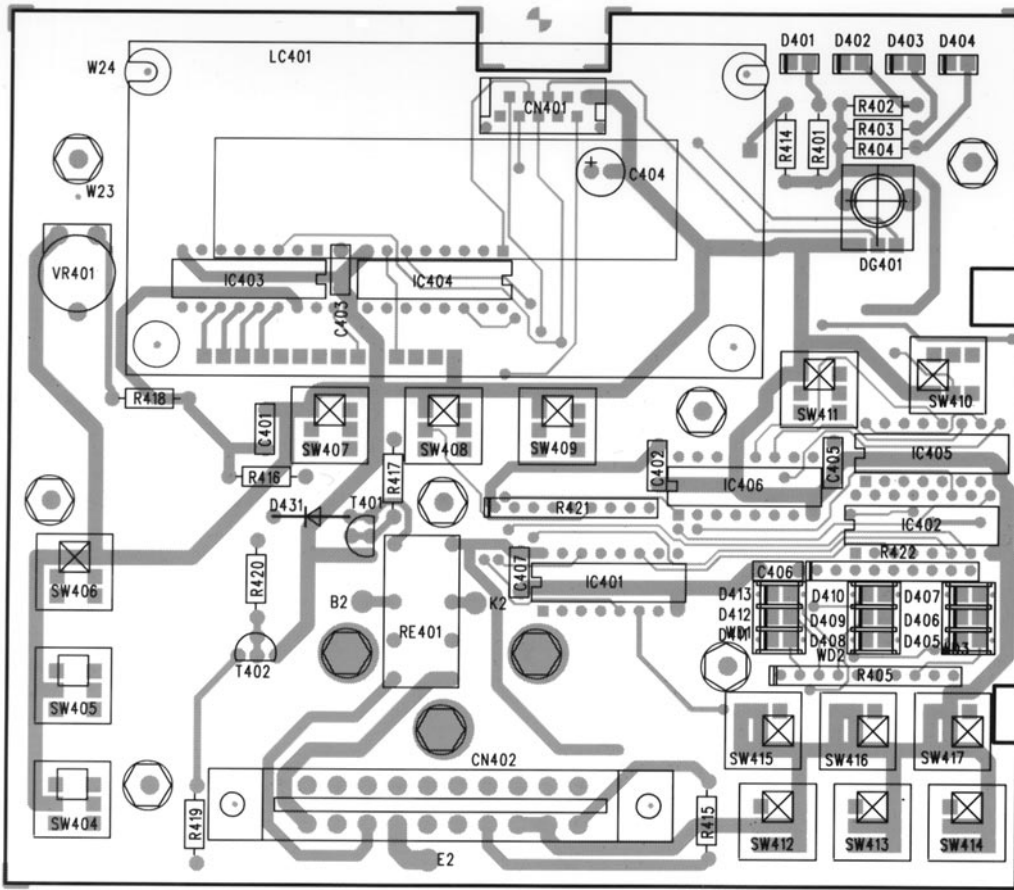
HAMEG Instruments		
Title		
ANALOG PART 3 - HM6042B		
Size	Document Number	REV
B	HM6042 - Main Board (3)	1.6
Date:	October 11, 1995	Sheet 4 of 9

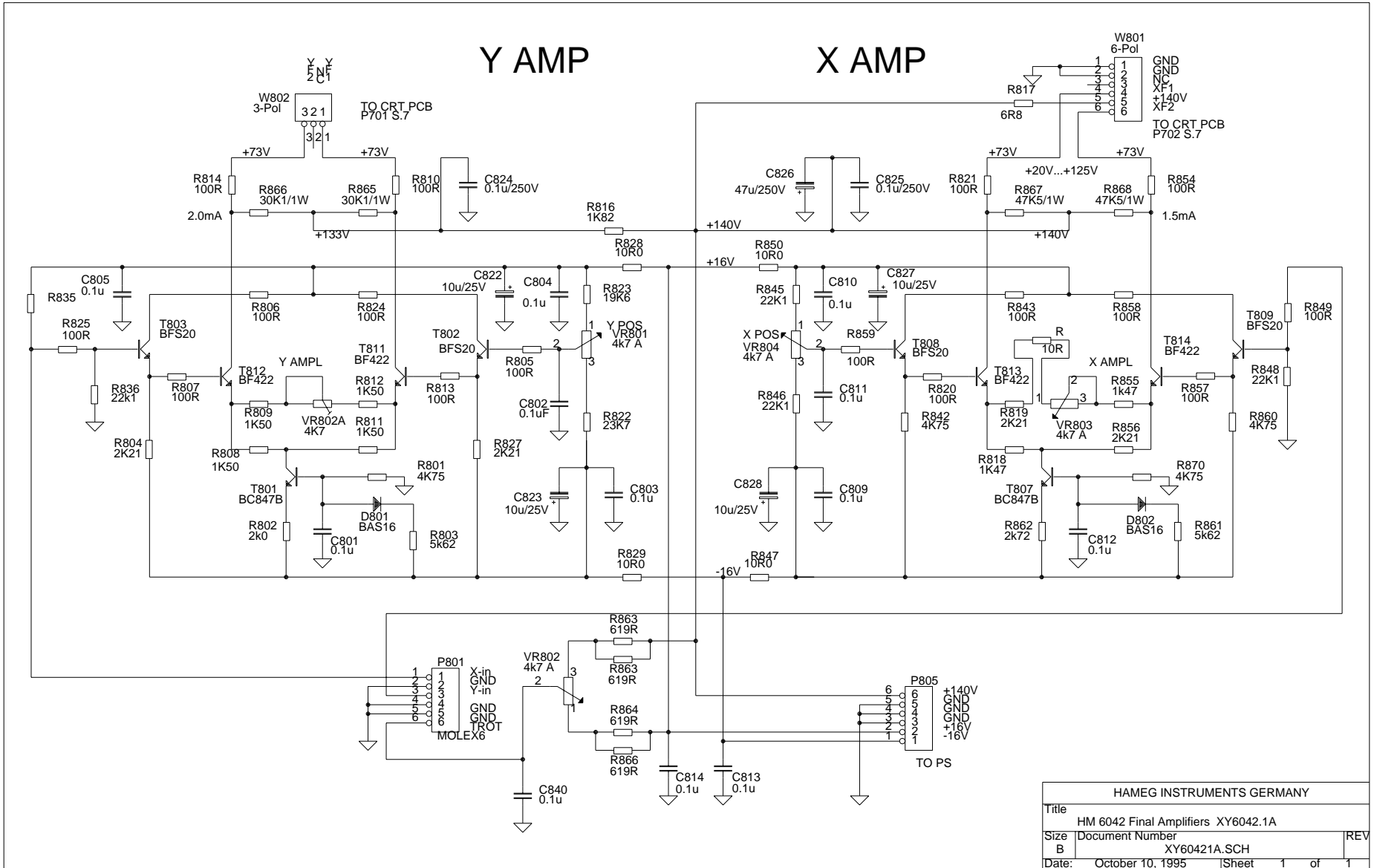




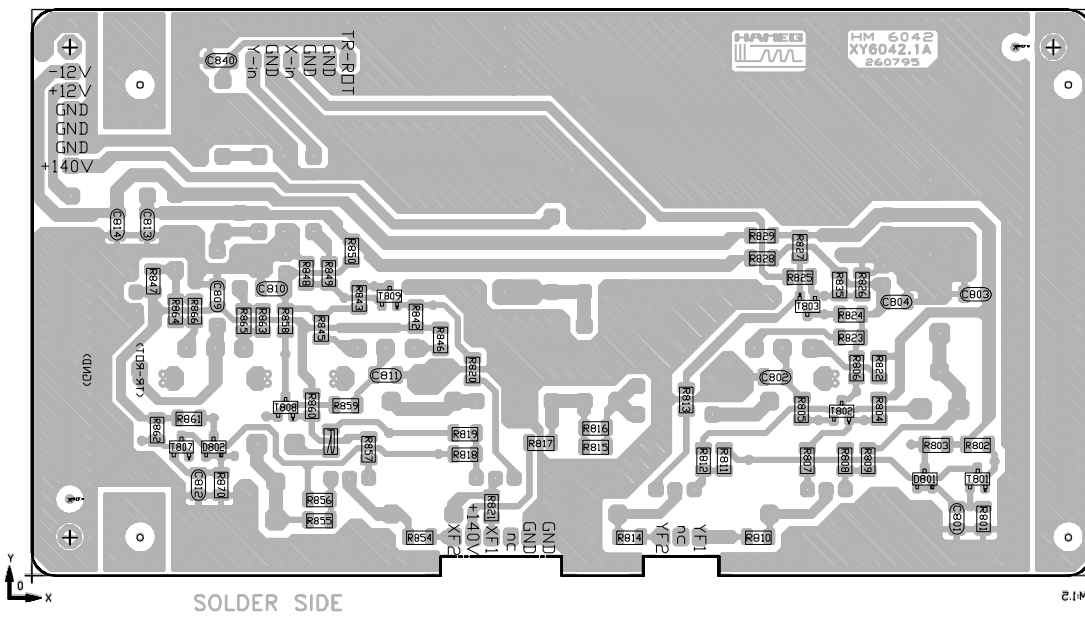
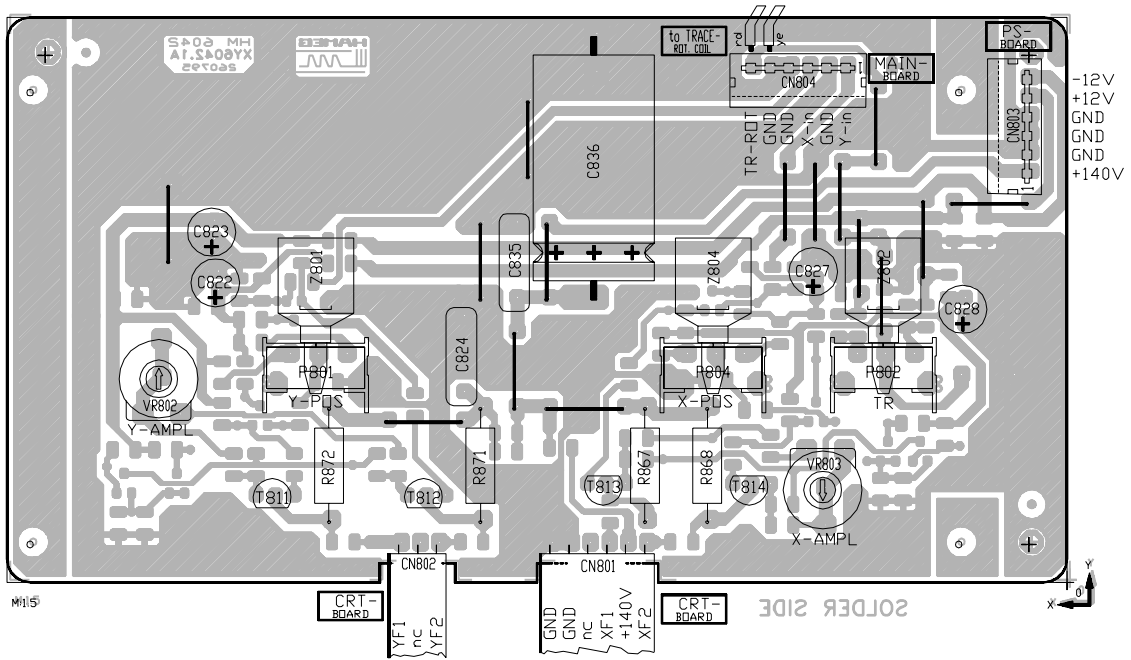
HAMEG Instruments		
Title DIGITAL PART/DISPLAY - HM6042D		
Size B	Document Number HM6042 - Display Board	REV 1.6
Date: October 5, 1995	Sheet 6	of 9

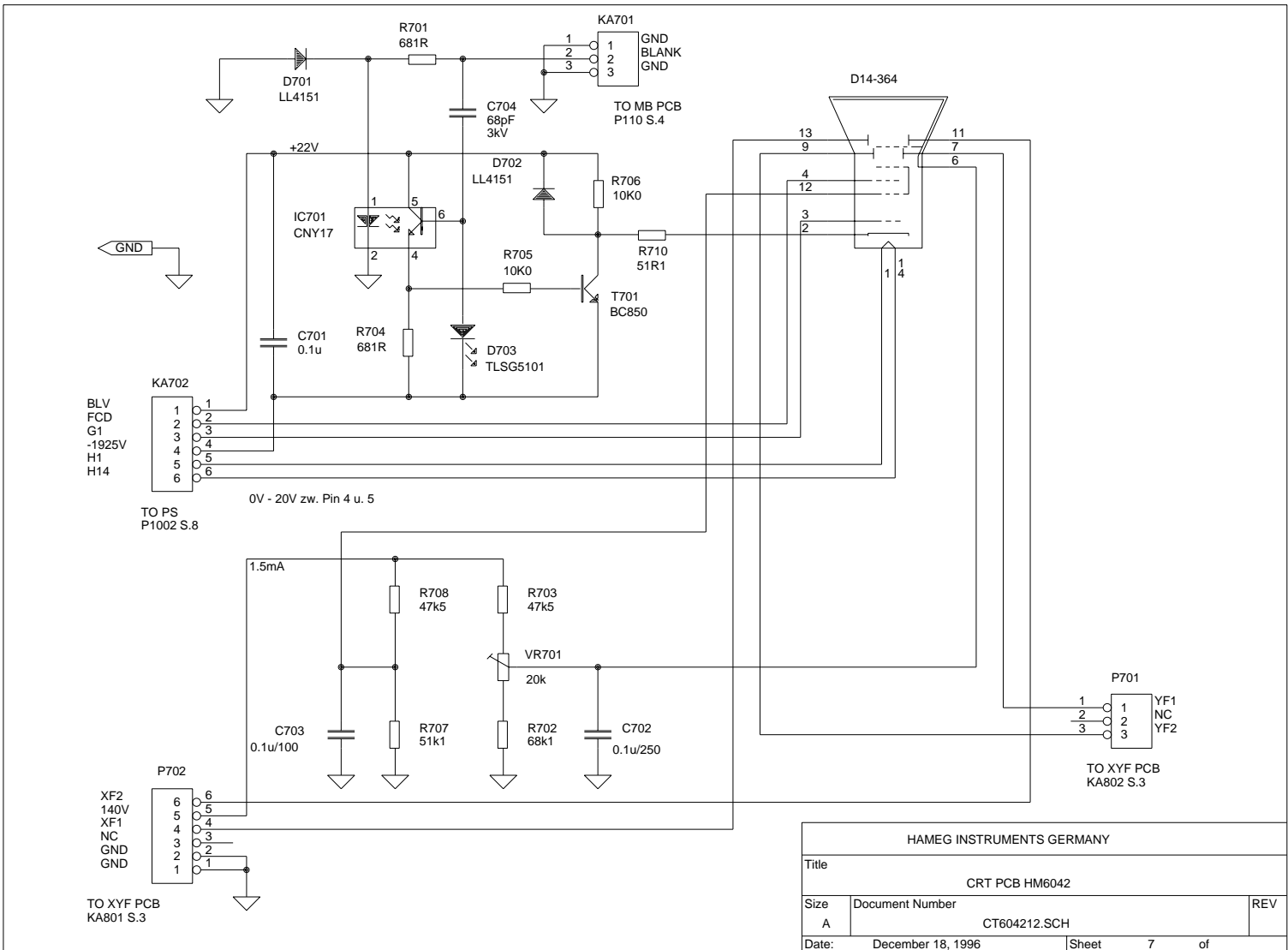
Frontcontrol- Board (Digital part)



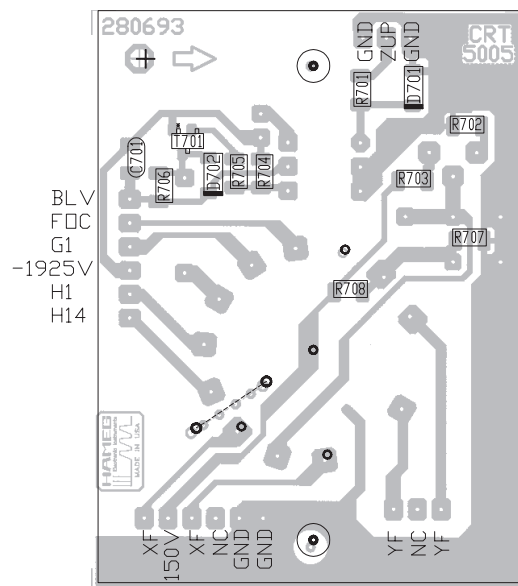
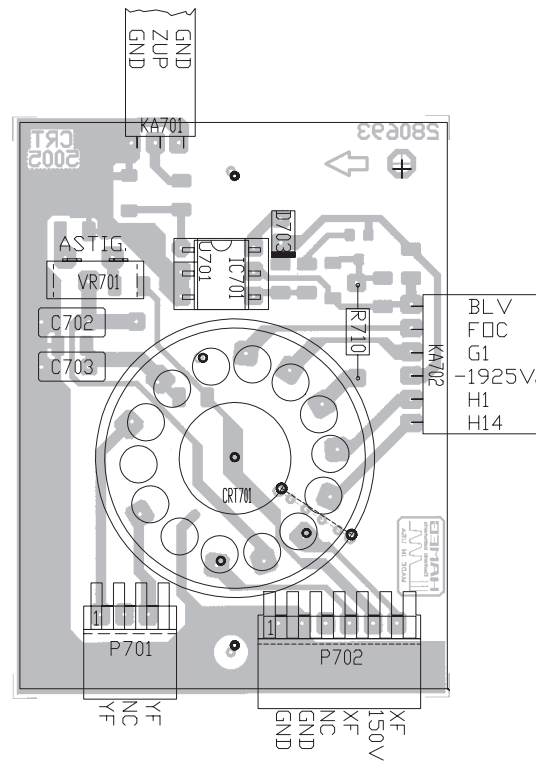


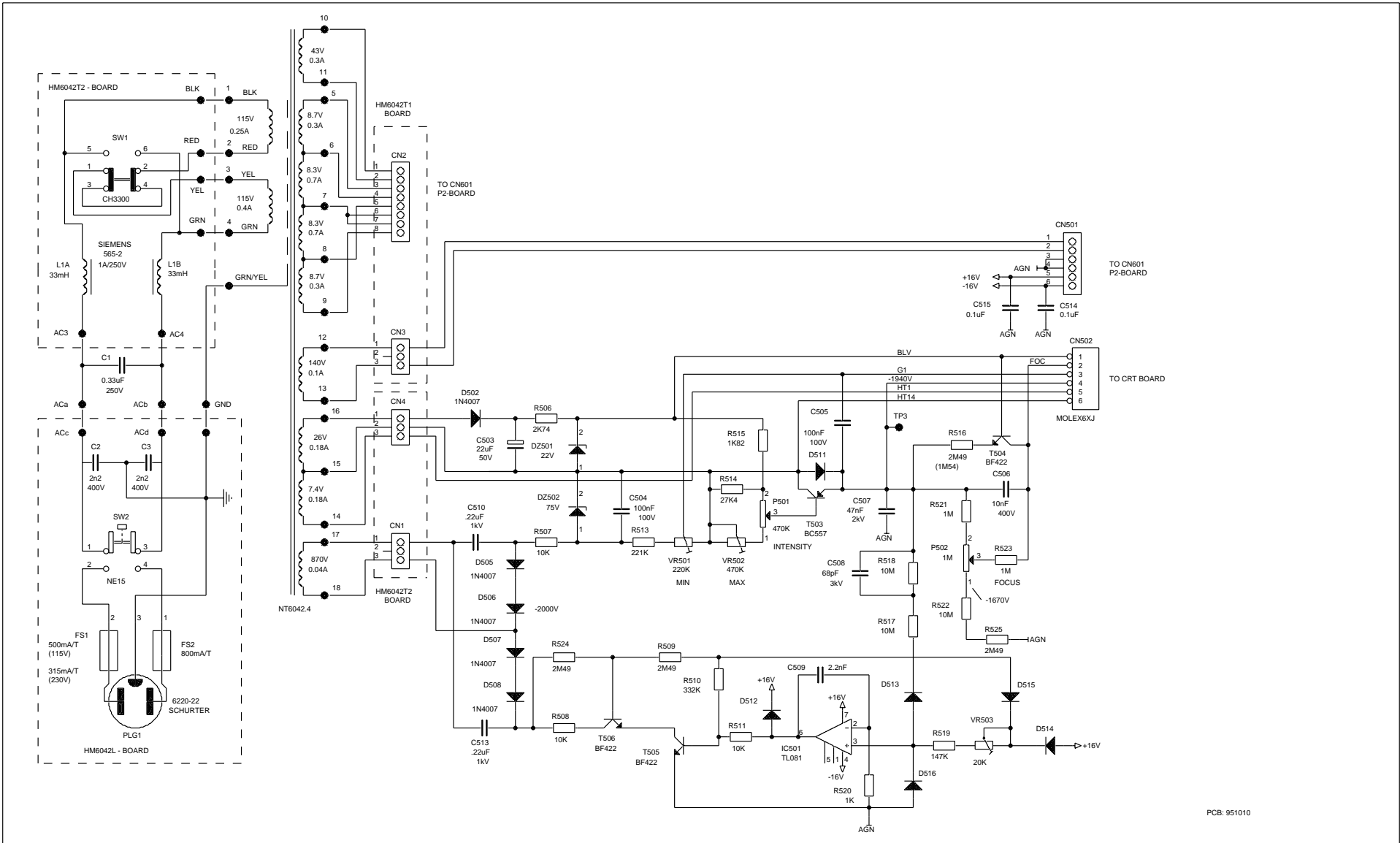
HAMEG INSTRUMENTS GERMANY			
Title HM 6042 Final Amplifiers XY6042.1A			
Size B	Document Number XY60421A.SCH		REV 1
Date:	October 10, 1995	Sheet	1 of 1



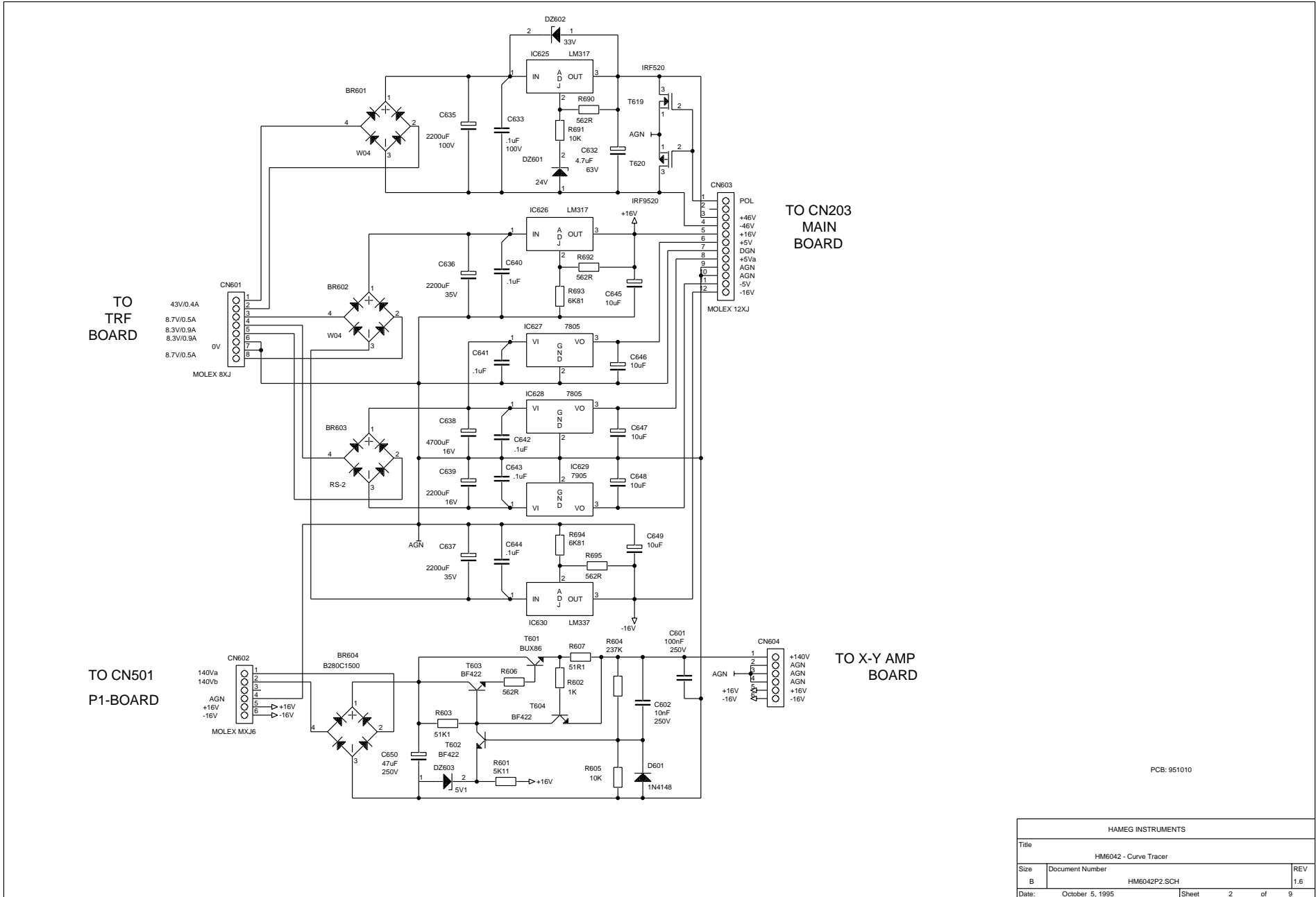


HAMEG INSTRUMENTS GERMANY		
Title CRT PCB HM6042		
Size A	Document Number CT604212.SCH	REV
Date: December 18, 1996	Sheet 7	of 7





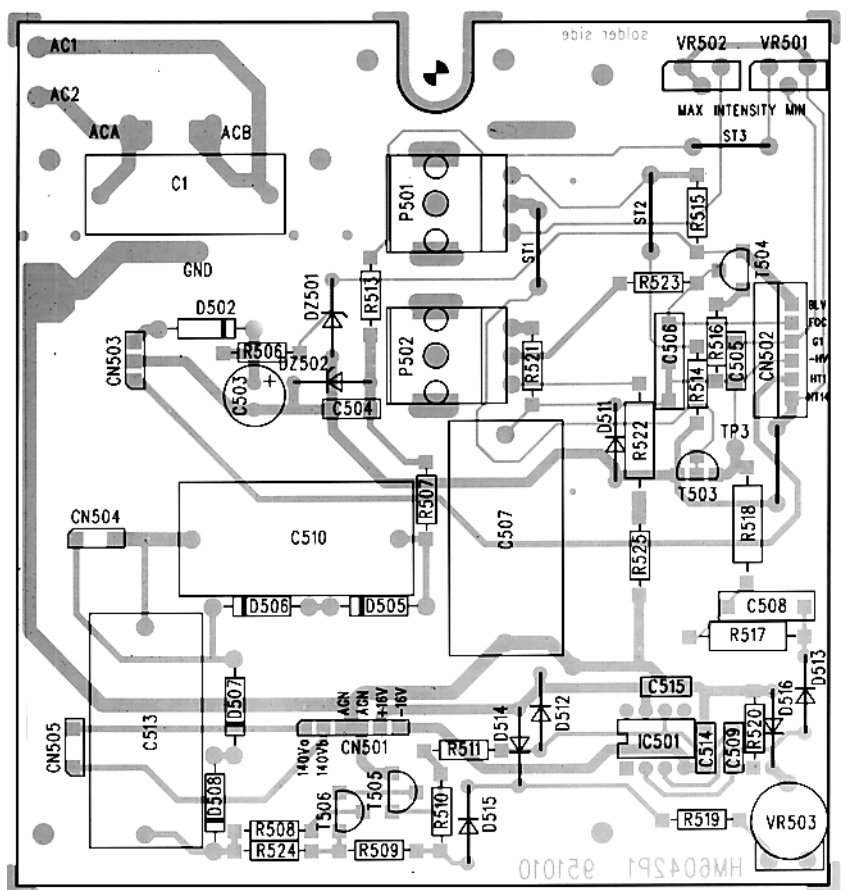
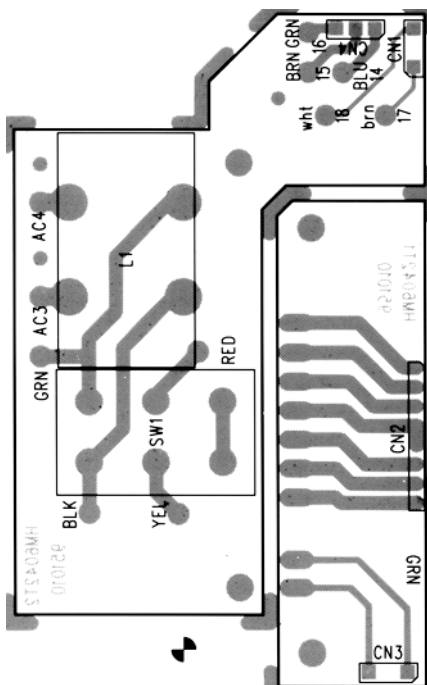
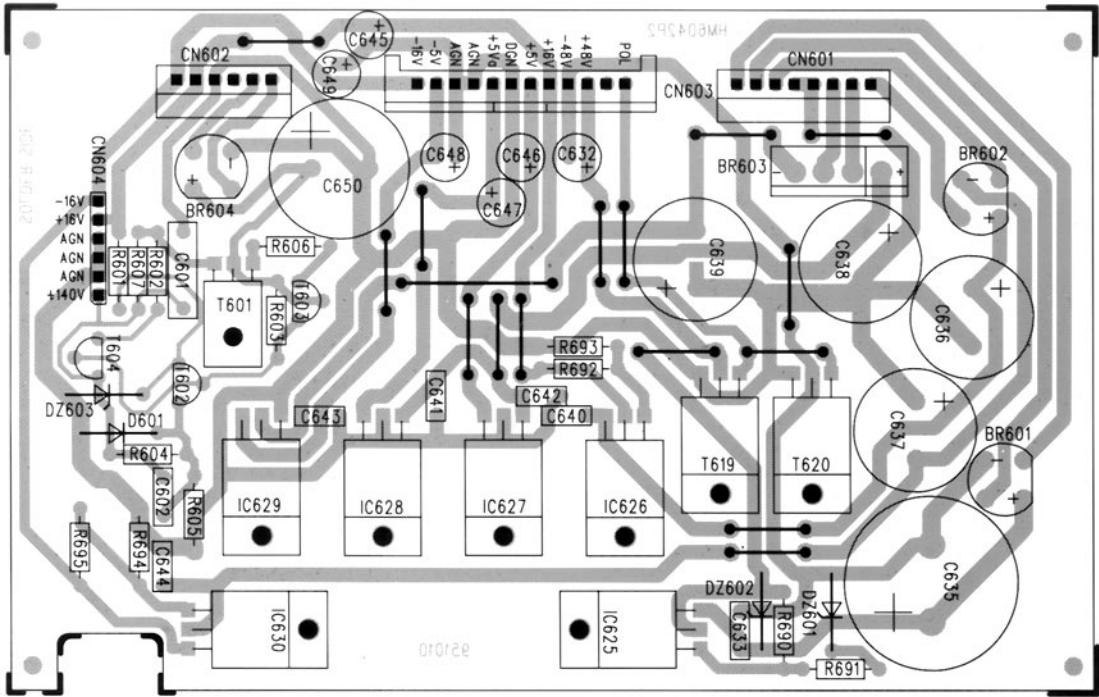
HAMEG INSTRUMENTS		
Title CURVE TRACER HM6042		
Size B	Document Number HM6042P1.SCH	REV 1.6
Date: October 10, 1995	Sheet 1	of 9



PCB: 951010

HAMEG INSTRUMENTS		
Title HM6042 - Curve Tracer		
Size B	Document Number HM6042P2.SCH	REV 1.6
Date: October 5, 1995	Sheet 2	of 9

Power Supply-Board



DIGITAL PART/DISPLAY - HM6042D

HM6042 - Display Board

Item	Quantity	Reference	Part	
1	1	CN401		MICS10
2	1	DG401		MSP20
3	2	IC402,IC401	CD4014	
4	2	IC403,IC404	CD4094	
5	2	IC405,IC406	74HC595	
6	1	C404	10uF/50V	
7	13	D401,D402,D403,D404,D405, D406,D407,D408,D409,D410, D411,D412,D413		L-383 JDTL
8	1	LC401	LM1621A	
9	5	R401,R402,R403,R404,	178R	
10	1	R415	10K	
11	2	R416,R420	5K11	
		R417,R419,R420		
12	1	R419	STRAP 10mm	
13	1	R405	9x178R	
14	2	R421,R422	8x10K	
15	1	R417	2K05	
16	1	R414	15R4	
17	1	R418	4K75 (4K64)	
18	1	D431	1N4148	
19	1	RE401	AZ821-2C-5DE	
20	1	CN402	A6DD10	
21	6	C401,C402,C403, C405,C406,C407	100nF/50V	
22	1	T401	BC557	
23	1	T402	BC237	
24	2	SW404,SW405	SPPH 11284	
25	12	SW410,SW401,SW401A,SW402, SW402A,SW403,SW403A,SW406, SW407,SW408,SW409,SW411		SPPH 11285
26	1	VR401	1K/PT10 LV	
27	1	PCB No.951010		

REFERENCE	VALUE	DESCRIPTION	NOTE
B2		EO6896L02U	solder tap
C401		100nF/50V	Z5U/multilayer 5mm
C402		100nF/50V	Z5U/multilayer 5mm
C403		100nF/50V	Z5U/multilayer 5mm
C404		10uF/50V	2.5mm
C405		100nF/50V	Z5U/multilayer 5mm
C406		100nF/50V	Z5U/multilayer 5mm
C407		100nF/50V	Z5U/multilayer 5mm
CN401	MICS10	LUMBERG	
CN402	A6DD10	PCB Card edge	.156" pin to pin
	THOMAS&BETTS	connector	.200" row to row
CN403	MK 14 G	connector 14pts.	pitch 2.54/h=13.4
D401	L-383 JDTL	LED 2.5x5mm green	MAX
D402	L-383 JDTL	LED 2.5x5mm green	MIN
D403	L-383 JDTL	LED 2.5x5mm green	L/R
D404	L-383 JDTL	LED 2.5x5mm green	TRACK
D405	L-383 JDTL	LED 2.5x5mm green	0.04W
D406	L-383 JDTL	LED 2.5x5mm green	0.4W
D407	L-383 JDTL	LED 2.5x5mm green	4W
D408	L-383 JDTL	LED 2.5x5mm green	2V
D409	L-383 JDTL	LED 2.5x5mm green	10V
D410	L-383 JDTL	LED 2.5x5mm green	40V
D411	L-383 JDTL	LED 2.5x5mm green	2mA
D412	L-383 JDTL	LED 2.5x5mm green	20mA
D413	L-383 JDTL	LED 2.5x5mm green	200mA
D431	1N4148	diode 400mA/75V	10mm
DG401	MSP20	Incremental encoder	20 imp/evol.
E2	EO6896L02U	solder tap	
IC401	CD4014	8 bit shift register	DIL16

IC402	CD4014	8 bit shift register	DIL16
IC403	CD4094	8 bit shift register	DIL16
IC404	CD4094	8 bit shift register	DIL16
IC405	74HC595	8 bit shift register	DIL16
IC406	74HC595	8 bit shift register	DIL16
K2	EO6896L02U	solder tap	
LC401	LM1621A	LCD 2x16 display	SHARP
R401	178R/1%/50ppm	metallayer resistor	10mm
R402	178R/1%/50ppm	metallayer resistor	10mm
R403	178R/1%/50ppm	metallayer resistor	10mm
R404	178R/1%/50ppm	metallayer resistor	10mm
R405	9x180R/5%	resistor network	
R414	15R4/1%/50ppm	metallayer resistor	10mm
R415	10K/1%/50ppm	metallayer resistor	10mm
R416	5K11/1%/50ppm	metallayer resistor	10mm
R417	2K05/1%/50ppm	metallayer resistor	10mm
R418	4K75/1%/50ppm	metallayer resistor	10mm
R419	100R/1%/50ppm	metallayer resistor	10mm or strap
R420	5K11/1%/50ppm	metallayer resistor	10mm
R421	8x10K/5%	resistor network	
R422	8x10K/5%	resistor network	
RE401	AZ821-2C-5DE	relay 5V	ZETTLER
SW401	SPPH 11285A	pushbuttonswitch	Im UP
SW401A	SPPH 11285A	pushbuttonswitch	Im DOWN
SW402	SPPH 11285A	pushbuttonswitch	Vm UP
SW402A	SPPH 11285A	pushbuttonswitch	Vm DOWN
SW403	SPPH 11285	pushbuttonswitch	Pm UP
SW403A	SPPH 11285	pushbuttonswitch	PM DOWN
SW404	SPPH 11284	pushbuttonswitch	BIP/FET
SW405	SPPH 11284	pushbuttonswitch	N/P
SW406	SPPH 11285	pushbuttonswitch	ON/OFF
SW407	SPPH 11285	pushbuttonswitch	LEFT
SW408	SPPH 11285	pushbuttonswitch	MEM
SW409	SPPH 11285	pushbuttonswitch	RIGHT
SW410	SPPH 11285	pushbuttonswitch	SEL
SW411	SPPH 11285	pushbuttonswitch	CRS UP
T401	BC557		PNP-BIP transistor
T402	BC237	NPN-BIP transistor	
VR401	1K	PT 10 LV	PIHER

HM6042D/951010 - Printed circuit Board

Cables / NAME	DESCRIPTION	NOTE
WPF401.10	wire plait flat cable style 3365/10	l=200mm
2x MICA10	female LUMBERG connector	

HM6042 - Mechanical parts

NUMBER	TYPE	DESCRIPTION	NOTE
	or HAMEG code		
3	0001 22 HAMEG	3 LED socket	73.0000400
6	pushbutton 5x5x11	ALPS type	72.0000031
5	pushbutton 5x8x11	ALPS type	72.00000xx
3	pushbutton 5x8x11	ALPS type	72.00000xx
1	button	è22mm/hole è6mm	70.6621769
1	button cover	è21mm	71.3021109
4	brass standoff	è5mm/è3mmx7mm	83.8420005
7	ENMET 15 LG 15	brass standoff, è6x15/M3	83.8000250
9	washer M3x0.5	DIN 125-A	86.8003125
4	screw M2.5x12 TCP	DIN 7985	84.8125120
14	screw M3x6 TCP	DIN 7985	84.8130060
2(9)	lockwasher M3 AZ3	DIN 6798A	86.8010320
4	nut M2.5	HM2.5DIN 934	85.8002500
2	banana jack M6x15	brass è 4mm/M6x0.5	82.6042xxx
3	banana jack	brass sheet è4mmx0.25x25	82.8042030
2	nut M3	DIN 7985	85.8003000
2	screw M3x10	DIN 934	84.8130100

HM6042 - MAIN BOARD

REFERENCE	VALUE	DESCRIPTION	NOTE
B1		EO6896L02U	solder tap
BLN		EO6896L02U	solder tap
BNG		EO6896L02U	solder tap
BP101	PS 15-01-0		Beeper green
BR201	W04	Bridge	1.5A/400V
C101	10uF/50V	ellyt capacitor	2.5mm
C102	22pF	NP0/ceramic	5mm
C103	22pF	NP0/ceramic	5mm
C104	100nF/50V	Z5U/multilayer	5mm
C105	100nF/50V	Z5U/multilayer	5mm
C106	10uF/50V	ellyt capacitor	2.5mm
C107	470pF	NP0/10% /ceramic	5mm
C202	10uF/50V	ellyt capacitor	2.5mm
C203	100nF/50V	Z5U/multilayer	5mm
C204	10nF/50V	X7R/10%/ceramic	5mm
C205	100nF/50V	Z5U/multilayer	5mm
C206	10uF/50V	ellyt capacitor	2.5mm
C207	100pF	NP0/5%/ceramic	5mm
C209	4.7uF/63V	ellyt capacitor	2.5mm
C210	4.7uF/63V	ellyt capacitor	2.5mm
C211	10pF	NP0/5%/ceramic	5mm
C212	10uF/50V	ellyt capacitor	2.5mm
C213	10uF/50V	ellyt capacitor	5mm
C214	100pF	NP0/5%/ceramic	5mm
C215	1n5/63V	C630/5%/ceramic	5mm
C216	10nF/50V	X7R/10%/ceramic	5mm
C217	100pF/63V	NP0/5%/ceramic	5mm
C218	100pF/63V	NP0/5%/ceramic	5mm
C219	10nF/63V	KP72/2.5%/PP	5mm
C220	100nF/100V	MKT/5%/PE	5mm
C221	100nF/50V	Z5U/multilayer	5mm
C222	100nF/50V	Z5U/multilayer	5mm
C223	120pF	NP0/5%/ceramic	5mm
C224	100pF	NP0/5%/ceramic	5mm
C225	100pF	NP0/5%/ceramic	5mm
C226	10uF/50V	ellyt capacitor	2.5mm
C227	10uF/50V	ellyt capacitor	2.5mm
C228	10uF/50V	ellyt capacitor	2.5mm
C230	470uF/16V	ellyt capacitor	3.5mm
C232	470uF/16	ellyt capacitor	3.5mm
C234	10pF	NP0/5%/ceramic	5mm
C304	220pF	NP0/5%/ceramic	5mm
C305	10pF	NP0/5%/ceramic	5mm
C306	10uF/50V	ellyt capacitor	2.5mm
C307	10uF/50V	ellyt capacitor	2.5mm
C308	10uF/50V	ellyt capacitor	2.5mm
C10	100nF/100V	MKT/KONEK	10,20mm
CN101	MICS10	LUMBERG 10 cont.	
CN102	MICS6	LUMBERG 6 cont.	
CN204	4710575104400	single cont. row	4x2.5mm
CN205	4710575103400	single cont. row	3x2.5mm
CN206	4710575102400	single cont. row	2x2.5mm
CN207	4710475103400	single cont. row	3x2.5mm
CN208	4710475102400	single cont. row	2x2.5mm
D201	1N4148	diode	10mm
D202	1N4148	diode	10mm
D203	1N4148	diode	10mm
D204	1N4148	diode	10mm
D205	1N4148	diode	10mm
D206	1N4148	diode	10mm
D209	1N4148	diode	10mm
D210	1N4148	diode	10mm
D211	1N4148	diode	10mm
D212	1N4148	diode	10mm
D213	1N4148	diode	10mm

D214	1N4148	diode	10mm
D215	1N4007	diode 1A	12.5mm
D216	1N4007	diode 1A	12.5mm
D217	1N4148	diode	10mm
D218	1N4148	diode	10mm
D219	1N4148	diode	10mm
D221	1N4148	diode	10mm
D222	1N4148	diode	10mm
D223	BAT41	Schottky diode	10mm
D224	1N4148	diode	10mm
D225	1N4148	diode	10mm
D226	1N4148	diode	10mm
D227	1N4148	diode	10mm
D228	1N4148	diode	10mm
D229	1N4148	diode	10mm
D231	1N4007	diode 1A	12.5mm
D232	1N4007	diode 1A	12.5mm
E1	EO6896L02U	solder tap	
IC101	80C32	uC 12MHz	DIL40/600 socket
IC102	74HC573	octal latch 3 states	DIL20
IC103	27C256	EPROM 32kx8 bits	DIL28/600 tulipe socket
IC104	74HC573	octal latch 3 states	DIL20
IC105	74HC02	quad 2-input NOR	DIL14
IC106	MC14490	hex contact debounc.	DIL16 socket
IC107	93C46	EEPROM 64x16 bits	DIL8 socket
IC201	74HC595	8 bits shift reg.	DIL16 socket
IC202	CD4094	8 bits shift reg.	DIL16 socket
IC203	LF412 CN	low drift 2x opamp	DIL8 socket
IC204	DAC0800-LCN	DAC 8 bits	DIL16 socket
IC205	DG211-CJ-2	4x analog switch	DIL16 socket
IC206	CD4053	3x analog selector	DIL16 socket
IC208	LF412 CN	low drift 2x opamp	DIL8 socket
IC209	LF412 CN	low drift 2x opamp	DIL8 socket
IC210	LM675	power opamp	TO220/5
IC211	LF412 CN	low drift 2x opamp	DIL8 socket
IC212	LF412 CN	low drift 2x opamp	DIL8 socket
IC213	CD4053	3x analog selector	DIL16 socket
IC214	LF412 CN	low drift 2x opamp	DIL8 socket
IC216	AD633 JN	multiplier	DIL8 socket
IC217	LM393 N	comparator	DIL8 socket
IC219	LM385 Z 2.5V	V-reference 30ppm	TO-92
IC220	TLC555 CN	CMOS timer	DIL8 socket
IC221	TLC555 CN	CMOS timer	DIL8 socket
IC222	LF412 CN	low drift 2x opamp	DIL8 socket
IC223	ADC1034 CIN	serial 10 bits ADC	DIL16 socket
IC224	74HC390	dual decade count.	DIL16 socket
K1	EO6896L02U	solder tap	
R101	5K11/1%/50ppm	metallayer resistor	10mm
R202	10K/1%/50ppm	metallayer resistor	10mm
R203	2K37/1%/50ppm	metallayer resistor	10mm
R204	9K09/1%/50ppm	metallayer resistor	10mm
R205	1K/1%/50ppm	metallayer resistor	10mm
R206	1K/1%/50ppm	metallayer resistor	10mm
R207	1K/1%/50ppm	metallayer resistor	10mm
R208	1K27/1%/50ppm	metallayer resistor	10mm
R209	1K27/1%/50ppm	metallayer resistor	10mm
R210	2K49/1%/50ppm	metallayer resistor	10mm
R211	10K/1%/50ppm	metallayer resistor	10mm
R212	2K05/1%/50ppm	metallayer resistor	10mm
R213	2K05/1%/50ppm	metallayer resistor	10mm
R214	9K/0.1%/25ppm	metallayer resistor	10mm
R215	900R/0.1%/25ppm	metallayer resistor	10mm
R216	100R/0.1%/25ppm	metallayer resistor	10mm
R218	2K05/1%/50ppm	metallayer resistor	10mm
R219	10K/1%/50ppm	metallayer resistor	10mm
R220	10K/1%/50ppm	metallayer resistor	10mm
R221	4K42/1%/50ppm	metallayer resistor	10mm

R222	2K21/1%/50ppm	metallayer resistor	10mm
R223	2K21/1%/50ppm	metallayer resistor	10mm
R224	10K/1%/50ppm	metallayer resistor	10mm
R225	10K/1%/50ppm	metallayer resistor	10mm
R226	10K/1%/50ppm	metallayer resistor	10mm
R227	2K49/1%/50ppm	metallayer resistor	10mm
R228	10K/1%/50ppm	metallayer resistor	10mm
R229	2K49/1%/50ppm	metallayer resistor	10mm
R230	1K/1%/50ppm	metallayer resistor	10mm
R232	2K05/1%/50ppm	metallayer resistor	10mm
R233	2K05/1%/50ppm	metallayer resistor	10mm
R234	51K1/1%/50ppm	metallayer resistor	10mm
R235	51K1/1%/50ppm	metallayer resistor	10mm
R236	10K/1%/50ppm	metallayer resistor	10mm
R237	1K/1%/50ppm	metallayer resistor	10mm
R238	2K2/1%/50ppm	metallayer resistor	10mm
R239	44K2/1%/50ppm	metallayer resistor	10mm
R240	2K21/1%/50ppm	metallayer resistor	10mm
R241	4M75/1%/50ppm	metallayer resistor	10mm
R242	44K2/1%/50ppm	metallayer resistor	10mm
R243	44K2/1%/50ppm	metallayer resistor	10mm
R244	1K/1%/50ppm	metallayer resistor	10mm
R245	5K11/1%/50ppm	metallayer resistor	10mm
R246	1K78/1%/50ppm	metallayer resistor	10mm
R247	1K47/1%/50ppm	metallayer resistor	10mm
R248	402R/1%/50ppm	metallayer resistor	10mm
R249	100R/1%/50ppm	metallayer resistor	10mm
R250	10K/1%/50ppm	metallayer resistor	10mm
R251	10K/1%/50ppm	metallayer resistor	10mm
R252	10K/1%/50ppm	metallayer resistor	10mm
R253	10R/1%/50ppm	metallayer resistor	20mm/1W
R254	90R/0.1%/25ppm	metallayer resistor	10mm
R255	900R/0.1%/25ppm	metallayer resistor	10mm
R256	10R/1%/50ppm	metallayer resistor	10mm
R257	1K/1%/50ppm	metallayer resistor	10mm
R258	1K54/1%/50ppm	metallayer resistor	10mm
R259	1K54/1%/50ppm	metallayer resistor	10mm
R260	2K49/1%/50ppm	metallayer resistor	10mm
R261	42K2/1%/50ppm	metallayer resistor	10mm
R262	44K2/1%/50ppm	metallayer resistor	10mm
R263	12K7/1%/50ppm	metallayer resistor	10mm
R264	23K7/1%/50ppm	metallayer resistor	10mm
*R264A	*59K/1%/50ppm	metallayer resistor	10mm
R265	10K/1%/50ppm	metallayer resistor	10mm
R266	1K01/1%/50ppm	metallayer resistor	10mm
R267	866R/1%/50ppm	metallayer resistor	10mm
R268	40K2/1%/50ppm	metallayer resistor	10mm
R269	10K/1%/50ppm	metallayer resistor	10mm
R270	100K/1%/50ppm	metallayer resistor	10mm
R271	4M75/1%/50ppm	metallayer resistor	10mm
R272	10K/1%/50ppm	metallayer resistor	10mm
R274	4M75/1%/50ppm	metallayer resistor	10mm
R275	100K/1%/50ppm	metallayer resistor	10mm
R276	100K/1%/50ppm	metallayer resistor	10mm
R277	10K/1%/50ppm	metallayer resistor	10mm
R278	1K15/1%/50ppm	metallayer resistor	10mm
R279	511R/1%/50ppm	metallayer resistor	10mm
R280	2K05/1%/50ppm	metallayer resistor	10mm
R281	100R/1%/50ppm	metallayer resistor	10mm
R282	2K05/1%/50ppm	metallayer resistor	10mm
R283	10K/1%/50ppm	metallayer resistor	10mm
R284	1K/1%/50ppm	metallayer resistor	10mm
R285	100R/1%/50ppm	metallayer resistor	10mm
R286	100R/1%/50ppm	metallayer resistor	10mm
R287	2K05/1%/50ppm	metallayer resistor	10mm
R288	5K11/1%/50ppm	metallayer resistor	10mm
R289	5K11/1%/50ppm	metallayer resistor	10mm

R290	205K/1%/50ppm	metallayer resistor	10mm
R291	10K/1%/50ppm	metallayer resistor	10mm
R292	5K11/1%/50ppm	metallayer resistor	10mm
R293	10K/1%/50ppm	metallayer resistor	10mm
R294	100K/1%/50ppm	metallayer resistor	10mm
R295	33K2/1%/50ppm	metallayer resistor	10mm
R296	4K02/1%/50ppm	metallayer resistor	10mm
R297	27K4/1%/50ppm	metallayer resistor	10mm
R298	10K/1%/50ppm	metallayer resistor	10mm
R299	10K/1%/50ppm	metallayer resistor	10mm
R300	24K9/1%/50ppm	metallayer resistor	10mm
R301	4M75/1%/50ppm	metallayer resistor	10mm
R302	100K/1%/50ppm	metallayer resistor	10mm
R303	332K/1%/50ppm	metallayer resistor	10mm
R304	10K/1%/50ppm	metallayer resistor	10mm
R305	39K2/1%/50ppm	metallayer resistor	10mm
R306	10K/1%/50ppm	metallayer resistor	10mm
R307	4M75/1%/50ppm	metallayer resistor	10mm
R308	100K/1%/50ppm	metallayer resistor	10mm
R309	1K/1%/50ppm	metallayer resistor	10mm
R310	2K05/1%/50ppm	metallayer resistor	10mm
R311	1K/1%/50ppm	metallayer resistor	10mm
R312	44K2/1%/50ppm	metallayer resistor	10mm
R313	1K/1%/50ppm	metallayer resistor	10mm
R314	1K21/1%/50ppm	metallayer resistor	10mm
R315	2M74/1%/50ppm	metallayer resistor	10mm
R316	2M74/1%/50ppm	metallayer resistor	10mm
R317	20K5/1%/50ppm	metallayer resistor	10mm
R318	10K /1%/50ppm	metallayer resistor	10mm
R319	4M75/1%/50ppm	metallayer resistor	10mm
R323	2M74/1%/50ppm	metallayer resistor	10mm
R331	511R/1%/50ppm	metallayer resistor	10mm
R332	10K /1%/50ppm	metallayer resistor	10mm
R333	2K05/1%/50ppm	metallayer resistor	10mm
R334	2K05/1%/50ppm	metallayer resistor	10mm
R335	5K11/1%/50ppm	metallayer resistor	10mm
R336	100R/1%/50ppm	metallayer resistor	10mm
R337	100R/1%/50ppm	metallayer resistor	10mm
*R338	*110R/1%/50ppm	metallayer resistor	10mm
R339	1M/1%/50ppm	metallayer resistor	10mm
R340	1M/1%/50ppm	metallayer resistor	10mm
R341	100K/1%/50ppm	metallayer resistor	10mm
R342	10K/1%/50ppm	metallayer resistor	10mm
RE201	AZ821-2C-12DE	relay ZETTLER	
RE202	AZ821-2C-12DE	relay ZETTLER	
RE203	AZ821-2C-12DE	relay ZETTLER	
RE204	AZ821-2C-12DE	relay ZETTLER	
RE205	AZ821-2C-12DE	relay ZETTLER	
T201	BC557	PNP BIP transistor	TO-92
T202	BC237	NPN BIP transistor	TO-92
T203	BC237	NPN BIP transistor	TO-92
T204	BC237	NPN BIP transistor	TO-92
T205	BC237	NPN BIP transistor	TO-92
T206	BC237	NPN BIP transistor	TO-92
T207	BC557	PNP BIP transistor	TO-92
T208	BC237	NPN BIP transistor	TO-92
T209	BC237	NPN BIP transistor	TO-92
T211	BC237	NPN BIP transistor	TO-92
T212	BC557	PNP BIP transistor	TO-92
T213	BC237	NPN BIP transistor	TO-92
T214	BC557	PNP BIP transistor	TO-92
T215	BC557	PNP BIP transistor	TO-92
T216	BC237	NPN BIP transistor	TO-92
T217	J112	J-FET/N-canal	TO-92
T218	BC237	NPN BIP transistor	TO-92
T219	TL431	V-reference	TO-92
T220	BC237	NPN BIP transistor	TO-92

T221	BC557	PNP BIP transistor	TO-92
T222	BC237	NPN BIP transistor	TO-92
T223	BC557	PNP BIP transistor	TO-92
TP2	EO6896L02U	solder tap	
VR201	500R	BOURNS 3266W-001-501	
VR202	100K	PIHER PT 10 LV	
VR203	250R	PIHER PT 10 LV	
VR205	50K	PIHER PT 10 LV	
VR206	10K	PIHER PT 10 LV	
VR207	1K	BOURNS 3266W-001-102	70ppm/K
VR208	1K	BOURNS 3266W-001-102	70ppm/K
VR209	1K	BOURNS 3266W-001-102	70ppm/K
VR210	20K	BOURNS 3266W-001-203	
VR211	100K	PIHER PT 10 LV	
VR213	500R	BOURNS 3266W-001-501	
VR214	100K	PIHER PT 10 LV	
X101	10MHZ	quartz HC49 CL30-32pF	30ppm
(CN205)	jumper 2.5mm	40.1030100	

HM6042 - Printed circuit Board

Cables & wires

REFERENCE	VALUE	DESCRIPTION	NOTE
CN202	ribbon cable	3x2.5/0.3mm	2/l=260mm to XY-board
CN203	ribbon cable	12x2.5/0.3mm	2/l=65mm to P2-board
RG174 U	shield cable	l=180mm	B1-tap to B2-pad
wire plait	0.5mm	l=70mm	K1-tap to K2-pad
wire plait	0.5mm	l=70mm	E1-tap to E2-pad
wire plait	0.5mm	l=380mm BLN-tap to CRT/bln	
flat cable	2xMICA 10/l=200mm	Main to Disp. board	

HM6042M/951010

HM6042 - Mechanical parts

NUMBER	TYPE	DESCRIPTION	NOTE
1	HS8042	or HAMEG Code heatsink HM8042	82.8042000
1	GL 530 TO-220	mica or ORCUS insulator	60.0001100
1	screw M3x12mm TCP	DIN 7985	84.8130120
1	nut M3	DIN 934	85.8003000
1	IS 561/TO-220	insulating bushing	77.0000900
1	discwasher M3	DIN 125-A	86.8003125
1(2)	lockwasher M3	DIN 6798A	86.8010320
4	screw M2.8x6.5	self tapping DIN 7981	84.8328650
2	POP rivet 3x8mm	88.9000005	

HM6042 - Screen Unit

NUMBER	TYPE	DESCRIPTION	NOTE
1	CRT 5005/240593	or HAMEG Code PCB for HM5005	
1	D14-363GY PHILIPS or ER14-11GY/I ELROG	electrostatic CRT	
1	68pF/3kV/10%	ceramic HV capacitor	10mm
1	shield unit	Mummetall	
1	rubber ring è 45mm		
2	screw M3x12 TF		
2	washer M3x0.5		
2	lockwasher M3		
4	nut M3		
1	plastic screen guide		
1	plastic screen sheet	green	100x120mm

HM6042 - MECHANICAL PARTS

NUMBER	TYPE	DESCRIPTION	NOTE
1	Frontpannel HM6042	or HAMEG Code Macrolon	„Frontdeckel“
1	Rearpannel HM6042	Macrolon	„R ckdeckel“
1	Frontchassis HM6042	Alu metall sheat 1.5	„Frontchassis“
1	Rearchassis HM6042	Alu metall sheat 1.5	„R ckchassis“

1	Frontfolie HM6042	top & bottom & CRT	,Frontfolie"
1	Frontframe HM6042	top & bottom & CRT	,Frontrahmen"
2	Side bar LEFT HM6042	top & bottom	,Seitensteg"
1	Side bar RIGHT-T HM6042	right top	,Seitensteg"
1	Side bar RIGHT-B HM6042	right bottom	,Seitensteg"
1	Side part RIGHT HM6042	,Seitenteil"	
1	Side part LEFT HM303	SIP 30R	
1	Centerwall HM6042	,Mittelwand"	
1	Cover PS (Netzteilhaube)	HM6042 only!	COV 30PS
2	brass washer $\varnothing 9/\varnothing 3 \times 1.5$		
2	RC30L5/DIN 7340	brass rivet $\varnothing 3 \times 5$	
4	RC30L8/DIN 7340	brass rivet $\varnothing 3 \times 8$	
2	ground lug 25x8mm		
1	Cover HM303/5005/6042	,Gehäuse"	
1	,Handgriffeinheit"	complet!	
2	,Makrolonfu \ddot{a} vorne"		
2	,Makrolonfu \ddot{a} hinten"		
4	POP rivet $\varnothing 3 \times 6$ TF		88.9000002
12	POP rivet $\varnothing 3 \times 6$ TC		88.9000000
3	DIN 965	screw M3x6 TC	84.8130060
1	brass standoff M3x22		85.8003000
2	DIN 6798A	lockwasher M3 AZ	86.8010320
1	DIN 934	nut M3	
1	3.2x18 A1	brass lug $\varnothing 3.2 \times 18$	87.8000300
2	DIN 7985	screw M4x12 TCP	
2	DIN 934	nut M4	85.8004000
2	DIN 6798A	lockwasher M4 AZ	86.8010430
2	nut M4-cover		
2	washer M4x0.8		86.8004030
1	rear label		
2	thermoretractable sheath	$\varnothing 3 \times 40$ mm	99.9990015
1	thermoretractable sheath	$\varnothing 3 \times 20$ mm	99.9990015

HM6042 P1 & T1 & T2 - BOARD

REFERENCE	VALUE	DESCRIPTION	NOTE
C1	0.33uF/250Vac	B81133-SIEMENS	l \ddot{u} 26mm
C2	2n2/250Vac	RIFA PME 294 RB	10 or 12.5 or 15mm
C3	2n2/250Vac	RIFA PME 294 RB	10 or 12.5 or 15mm
C503	22uF/50V	ellyt capacitor	3.5mm
C504	100nF/100V/20%	KONEK/PE	5mm
C505	100nF/100V/20%	KONEK/PE	5mm
C506	10nF/400V/20%	KONEK/PE	5 or 10mm
C507	47nF/2kV/10%	WIMA MKP 10/PE	27.5mm
C508	68pF/3kV/10%	ceramic disc	10mm
C509	2.2nF/50V/10%	ARCO/PE	5mm
C510	0.22uF/1kV/20%	EVOX/PE	27.5mm
C513	0.22uF/1kV/20%	EVOX/PE	27.5mm
C514	0.1uF/50V	Z5U multilayer	5mm
C515	0.1uF/50V	Z5U multilayer	5mm
CN503	3x solder tap		
CN504	2x solder tap		
CN502	MOLEX 52011-0610	wire trap 6MXJ	6x 2.5mm
D502	1N4007	diode 1A/1kV	12.5mm
D505	1N4007	diode 1A/1kV	12.5mm
D506	1N4007	diode 1A/1kV	12.5mm
D507	1N4007	diode 1A/1kV	12.5mm
D508	1N4007	diode 1A/1kV	12.5mm
D511	1N4148	diode 400mA/75V	10mm
D512	1N4148	diode 400mA/75V	10mm
D513	1N4148	diode 400mA/75V	10mm
D514	1N4148	diode 400mA/75V	10mm
D515	1N4148	diode 400mA/75V	10mm
D516	1N4148	diode 400mA/75V	10mm
DZ501	BZX55C22	ZENER diode 22V	10mm
DZ502	BZX55C75	ZENER diode 75V	10mm
GND	wire d= \varnothing 0.8 mm	earth/GND	l=80mm
IC501	TL081	BiFet single OpAmp	DIL8 socket

*L1	2x33mH/1A/250V	SIEMENS Type 565-2	B82724-J2102-N1
FS1	315/500mA/T	20mm	
FS2	800mA/T	20mm	
P501	470K/lin.	PHILIPS CRC12	2322 505 00313
P502	1M/lin.	PHILIPS CRC12	2322 505 00315
TP3	solder tap		
PLG1	6220-22	Line Plug SCHURTER	
R506	2K74/1%/50ppm	metallayer resistor	10mm
R507	10K/1%/50ppm	metallayer resistor	10mm
R508	10K/1%/50ppm	metallayer resistor	10mm
R509	2M49/1%/50ppm	metallayer resistor	10mm
R510	332K/1%/50ppm	metallayer resistor	10mm
R511	10K/1%/50ppm	metallayer resistor	10mm
R513	221K/1%/50ppm	metallayer resistor	10mm
R514	27K4/1%/50ppm	metallayer resistor	10mm
R515	1K82/1%/50ppm	metallayer resistor	10mm
R516	1M54/1%/50ppm	metallayer resistor	10mm
R517	10M/5%/0.7W	PHILIPS VR37 Type	15mm
R518	10M/5%/0.7W	PHILIPS VR37 Type	15mm
R519	154K(162K)/1%/50ppm	metallayer resistor	10mm
R520	1K/1%/50ppm	metallayer resistor	10mm
R521	1M/1%/50ppm	metallayer resistor	10mm
R522	10M/5%/0.7W	PHILIPS VR37 Type	15mm
R523	1M/1%/50ppm	metallayer resistor	10mm
R524	2M49/1%/50ppm	metallayer resistor	10mm
R525	2M49/1%/50ppm	10mm	
*SW1	3330 series	CHILLY line voltage	
selector	115V/230V		
SW2	NE15 (or Snap-in)	SCHADOW (53.0812230)	53.0812220
T503	BC557	PNP Bip transistor	
T504	BF422	NPN Bip HV transistor	MOTOROLA TO-92
T505	BF422	NPN Bip HV transistor	MOTOROLA TO-92
T506	BF422	NPN Bip HV transistor	MOTOROLA TO-92
VR501	220K	PIHER PT 10 LH	
VR502	470K	PIHER PT 10 LH	
VR503	20K	PIHER PT 10 LV	
ST1-4	strap 1mm	10mm	
*NT6042	NT6042.4	AC line transformer	
	HM6042P1/951010	printed circuit board	
*	HM6042T1/951010	printed circuit board	
*	HM6042T2/951010	printed circuit board	

HM6042 - Cables & wires

wire plait	gnd L- to P1-Board	0.5mm ² /l ² =80mm	
AC1	wire plait	AC1 P1- to T2-Board	0.5mm ² /l ² =60mm
AC2	wire plait	AC2 P1- to T2-Board	0.5mm ² /l ² =60mm
CN2	ribbon cable	8 wire 0.5mm/2.5mm	l=180mm
CN501	ribbon cable	6 wire 0.5mm/2.5mm	l=175mm
(CN503)	ribbon cable	3 wire 0.5mm/2.5mm	l=120mm
(CN504)	ribbon cable	2 wire 0.5mm/5mm	l=130mm
CN505	ribbon cable	2 wire 0.5mm/5mm	l=50mm
cooper wire	line plug to L-board	2x è 0.8 mm/l=20mm	

HM6042 - Mechanical parts

NUMBER	TYPE	DESCRIPTION or HAMEG Code	NOTE
4	brass standoff	ENINT 5.5x5 SP M3	83.8000151
6	lockwasher M3	AZ 3 DIN 6798A	86.8010320
4	nut M3	HM 3 DIN 934	85.8003000
4	screw M3x6 TCP	DIN 7985	84.8130060
4	selftapping screw	DIN 7981 BZ 2.9x13	84.8529655
2	plastic standoff	line plug SCHURTER	JAH 30PS
*4	screw M4x50 TCF	DIN 84	84.8140500
*12	lockwasher	AZ 4 DIN 6798A	86.8010430
*12	nut M4	DIN 934	85.8004000

*4	brass standoff	è7mm/è4.1 h=5mm	
*4	brass standoff	è7mm/è4.1 h=6mm	
1	IS6042.1	insulating sheet	th.=1mm
(1)	(IS6042.2)	(insulating sheet)	(th.=0.5mm)
2	long nylon pot link	è 2mm/CRC12	
1	polycarbonate link	è 2mm/SCHADOW	shaft 6864213
5	selftapping screw	DIN 7981 TCP 3.5x6.5mm	84.8335650
*4	brass rivet	è2x2.5mm	
*1	brass solder lug	M4	
1	INOX shaft	è 2mm/l=307mm	82.1800082
2	INOX shaft	è 2mm l=327mm	82.1800082
1	pushbutton 5x8x11	red/hole è2mm	72.00000xx
2	button	small è10mm/hole è2mm	70.8610209
1	button cover	è10mm small green/line	
1	button cover	è10mm small green	
1	Side wall	„Seitenwand“	SIW 30PS
2	Nylon washer M3		86.8007321
2	thermoretractable sheath	è8x15 mm	99.9990022
	transformer unit		

HM6042 P2 - BOARD

REFERENCE	VALUE	DESCRIPTION	NOTE
BR601	W04 or B125C1500	Bridge 1.5A/400V	
BR602	W04 or B125C1500	Bridge 1.5A/400V	
BR603	RS-203	Bridge 2A/200V	
BR604	W04 or B125C1500	Bridge 1.5A/400V	
C601	100(47)nF/250V/20%	KONEK/PE	10mm
C602	10nF/250V/20%	ERO/MKT	5mm
C632	4.7uF/63V		2.5mm
C633	0.1uF/100V	ERO/MKT	5mm
C635	2200uF/100V	Snap-in; d ú 22.5mm	10mm
C636	2200uF/35V	d ú 16mm	7.5mm
C637	2200uF/35V	d ú 16mm	7.5mm
C638	4700uF/16V	d ú 16mm	7.5mm
C639	2200uF/16V	d ú 16mm	7.5mm
C640	0.1uF/50V	Z5U/multilayer	5mm
C641	0.1uF/50V	Z5U/multilayer	5mm
C642	0.1uF/50V	Z5U/multilayer	5mm
C643	0.1uF/50V	Z5U/multilayer	5mm
C644	0.1uF/50V	Z5U/multilayer	5mm
C645	10uF/50V	2.5mm	
C646	10uF/50V	2.5mm	
C647	10uF/50V	2.5mm	
C648	10uF/50V	2.5mm	
C649	10uF/50V	2.5mm	
C650	47uF/250V	d ú 18mm	7.5mm
CN601	52011-0810	MOLEX wire trap 8XJ	2.5mm x 8 pts.
CN602	52011-0610	MOLEX wire trap 6XJ	2.5mm x 6 pts.
CN603	52011-1210	MOLEX wire trap 12XJ	2.5mm x12pts.
CN604	ribbon cable	6x wire 0.5mm/2.5	l=100mm
D601	1N4148	diode 400mA/75V	10mm
DZ601	BZX55C24	ZENER diode 24V	10mm
DZ602	BZX55C33	ZENER diode 33V	10mm
DZ603	BZX55C5V1	ZENER diode 5.1V0	10mm
IC625	LM317T	+V-regulator adj.	TO220
IC626	LM317T	+V-regulator adj.	TO220
IC627	LM7805	+V-regulator 5V/2A	TO220
IC628	LM7805	+V-regulator 5V/2A	TO220
IC629	LM7905	-V-regulator -5V/-2A	TO220
IC630	LM337	-V-regulator adj.	TO220
R601	5K11/1%/50ppm	metallayer resistor	10mm
R602	1K1%/50ppm	metallayer resistor	10mm
R603	51K1/1%/50ppm	metallayer resistor	10mm
R604	237K/1%/50ppm	metallayer resistor	10mm
R605	10K/1%/50ppm	metallayer resistor	10mm
R606	562R/1%/50ppm	metallayer resistor	10mm
R607	51R1/1%/50ppm	metallayer resistor	10mm

R690	562R/1%/50ppm	metallayer resistor	10mm
R691	10K/1%/50ppm	metallayer resistor	10mm
R692	562R/1%/50ppm	metallayer resistor	10mm
R693	6K81/1%/50ppm	metallayer resistor	10mm
R694	6K81/1%/50ppm	metallayer resistor	10mm
R695	562R/1%/50ppm	metallayer resistor	10mm
T601	BUX86	NPN transistor 800V	PHILIPS TO-126
T602	BF422	NPN transistor 400V	MOTOROLA TO92
T603	BF422	NPN transistor 400V	MOTOROLA TO92
T604	BF422	NPN transistor 400V	MOTOROLA TO92
T619	IRF520	N-MOSFET 100V/5A	TO220
T620	IRF9520	P-MOSFET 100V/5A	TO220
ST1 to 14	strap 1mm	10mm	
ST15	strap 1mm	20mm	

HM6042P2/951010 - Printed circuit Board

Mechanical parts

NUMBER	NAME	DESCRIPTION or HAMEG code	NOTE
1	HS6042.1	metall sheat heatsink	
6	mica GL530 or ORCUS insulator	0.05mm/TO-220	60.0001100
6	IS561	hard polycarb.bushing M3	77.0000900
6	screw M3x10 TCP	DIN 7985	84.8130100
8	lockwasher M3	DIN 6798A	86.8010320
2	screw M3x8 TFP	DIN 965	84.8130080
8	nut M3	DIN 934	85.8003000
4	selftapping screw	DIN 7981 2.9x6.5	84.8529655

HM6042 X-Y AMP

REFERENCE	VALUE or HAMEG Code	DESCRIPTION	NOTE
C801	100nF/63V/10%	X7R-SMD-1206	21.1206103
C802	100nF/63V/10%	X7R-SMD-1206	21.1206103
C803	100nF/63V/10%	X7R-SMD-1206	21.1206103
C804	100nF/63V/10%	X7R-SMD-1206	21.1206103
C805	100nF/63V/10%	X7R-SMD-1206	21.1206103
C809	100nF/63V/10%	X7R-SMD-1206	21.1206103
C810	100nF/63V/10%	X7R-SMD-1206	21.1206103
C811	100nF/63V/10%	X7R-SMD-1206	21.1206103
C812	100nF/63V/10%	X7R-SMD-1206	21.1206103
C813	100nF/63V/10%	X7R-SMD-1206	21.1206103
C814	100nF/63V/10%	X7R-SMD-1206	21.1206103
C822	10uF/50V/20%	radial ellyt capacitor	25.0510000
C823	10uF/50V/20%	radial ellyt capacitor	25.0510000
C824	100nF/250V/20%	MKT capacitor 10mm	23.0410002
C825	100nF/250V/20%	MKT capacitor 10mm	23.0410002
C826	47uF/250V	axial ellyt capacitor	lú32mm dú16mm
C827	10uF/50V/20%	radial ellyt capacitor	25.0510000
C828	10uF/50V/20%	radial ellyt capacitor	25.0510000
C829	100nF/63V/10%	X7R-SMD-1206	21.1206103
D801	BAS16	SOT-23 SMD diode	30.1600000
D802	BAS16	SOT-23 SMD diode	30.1600000
P801	4K7/CRC12/lin./PHILIPS	2322 5.5 00106 Type	16.0347000
P802	4K7/CRC12/lin./PHILIPS	2322 5.5 00106 Type	16.0347000
P804	4K7/CRC12/lin./PHILIPS	2322 5.5 00106 Type	16.0347000
R801	4K75/1%/100ppm (4K7/5%)		SMD resistor (19.1347000)
R802	2K05/1%/100ppm	SMD resistor	
R803	5K62/1%/100ppm	SMD resistor	
R804	2K21/1%/100ppm (2K2/5%)		SMD resistor (19.1322000)
R805	100R/1%/100ppm (100R/5%)		SMD resistor (19.1210000)
R806	100R/1%/100ppm (100R/5%)		SMD resistor (19.1210000)
R807	100R/1%/100ppm (100R/5%)		SMD resistor (19.1210000)
R808	1K47/1%/100ppm (1K5/5%)		SMD resistor (19.1315000)
R809	1K47/1%/100ppm (1K5/5%)		SMD resistor (19.1315000)
R810	100R/1%/100ppm (100R/5%)		SMD resistor (19.1210000)
R811	1K47/1%/100ppm (1K5/5%)		SMD resistor (19.1315000)

R812	1K47/1%/100ppm (1K5/5%)	SMD resistor	(19.1315000)
R813	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R814	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R815	3K01/1%/100ppm (3K/5%)	SMD resistor	(19.1330100)
R816	3K01/1%/100ppm (3K/5%)	SMD resistor	(19.1330100)
R817	10R/1%/100ppm (10R/5%)	SMD resistor	(19.1110000)
R818	2K21/1%/100ppm (2K2/5%)	SMD resistor	(19.1322000)
R819	1K47/1%/100ppm (1K5/5%)	SMD resistor	(19.1314700)
R820	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R821	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R822	23K7/1%/100ppm	SMD resistor	(19.1423700)
R823	19K6/1%/100ppm	SMD resistor	(19.1419600)
R824	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R825	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R827	2K21/1%/100ppm (2K2/5%)	SMD resistor	(19.1322000)
R828	10R/1%/100ppm (10R/5%)	SMD resistor	(19.1110000)
R829	10R/1%/100ppm (10R/5%)	SMD resistor	(19.1110000)
R836	22K1/1%/100ppm (22K/5%)	SMD resistor	(19.1422000)
R842	4K75/1%/100ppm (4K7/5%)	SMD resistor	(19.1347000)
R843	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R845	15K4/1%/100ppm (15K/5%)	SMD resistor	(19.1415000)
R846	22K1/1%/100ppm (22K/5%)	SMD resistor	(19.1422000)
R847	10R/1%/100ppm (10R/5%)	SMD resistor	(19.1110000)
R848	22K1/1%/100ppm (22K/5%)	SMD resistor	(19.1422000)
R849	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R850	10R/1%/100ppm (10R/5%)	SMD resistor	(19.1110000)
R854	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R855	1K47/1%/100ppm (1K5/5%)	SMD resistor	(19.1314700)
R856	2K21/1%/100ppm (2K2/5%)	SMD resistor	(19.1322000)
R857	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R858	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R859	100R/1%/100ppm (100R/5%)	SMD resistor	(19.1210000)
R860	4K75/1%/100ppm (4K7/5%)	SMD resistor	(19.1347000)
R861	5K62/1%/100ppm	SMD resistor	
R862	2K74/1%/100ppm	SMD resistor	
R863	1K/1%/50ppm (1K/5%)	SMD resistor	(19.1310000)
R864	1K/1%/50ppm (1K/5%)	SMD resistor	(19.1310000)
R865	1K/1%/50ppm (1K/5%)	SMD resistor	(19.1310000)
R866	1K/1%/50ppm (1K/5%)	SMD resistor	(19.1310000)
R867	47K5/1%/100ppm	1W metallayer resistor	
R868	47K5/1%/100ppm	1W metallayer resistor	
R870	4K75/1%/100ppm (4K7/5%)	SMD resistor	(19.1347000)
R871	30K1/1%/100ppm	1W metallayer resistor	
R872	30K1/1%/100ppm	1W metallayer resistor	
T801	BC847B	NPN SMD transistor	
T802	BFS20	NPN SMD transistor	
T803	BFS20	NPN SMD transistor	
T807	BC847B	NPN SMD transistor	
T808	BFS20	NPN SMD transistor	
T809	BFS20	NPN SMD transistor	
T811	BF422	NPN TO-92 transistor	MOTOROLA
T812	BF422	NPN TO-92 transistor	MOTOROLA
T813	BF422	NPN TO-92 transistor	MOTOROLA
T814	BF422	NPN TO-92 transistor	MOTOROLA
VR802	5K trimpot	PIHER PT 10 LV	15.0350000
VR803	5K trimpot	PIHER PT 10 LV	15.0350000

HM6042 - Cables & wires

REFERENCE or HAMEG Code	TYPE	DESCRIPTION	LENGHT
CN801	ribbon cable	6 wires 0.6mm/2.5mm	l=64mm
CN802	ribbon cable	3 wires 0.5mm/2.5mm	l=64mm
CN803	MOLEX 52011-0610	Wire trap MXJ6	40.1041250
CN804	MOLEX 52011-0610	Wire trap MXJ6	40.1041250

HM6042 - XY6042/No.951010- Printed circuit board**Mechanical parts**

NUMBER	NAME or HAMEG Code	DESCRIPTION	NOTE
4	selftapping screw	DIN 7981 2.9x6.5	84.8529655
3	INOX shaft	è2mm/l=270mm	82.1800082
3	short(long) nylon pot link	è2mm/CRC12	76.0000400
3	Macrolon button	X & Y adj. HM303	

HM6042 - DIGITAL PART/DISPLAY**HM6042 - Display Board**

Item	Quantity	Reference	Part	
1	1	CN401	MICS10	
2	1	DG401	MSP20	
3	2	IC402,IC401	CD4014	
4	2	IC403,IC404	CD4094	
5	2	IC405,IC406	74HC595	
6	1	C404	220uF/16V	
7	13	D401,D402,D403,D404,D405, D406,D407,D408,D409,D410, D411,D412,D413		L-383 JDTL
8	1	IC401	LM1621A	
9	5	R401,R402,R403, R404,R414	178R 178R	
10	1	R415	10K	
11	2	R416,R420 R417,R419,R420	5K11 5K11	
12	1	R419	STRAP 10mm	
13	1	R405	9x178R	
14	2	R421,R422	8x10K	
15	1	D431	1N4148	
16	1	RE401	AZ821-2C-5DE	
17	1	CN402	A6DD10	
18	6	C401,C402,C403, C405,C406,C407	100nF/50V	
19	1	T401	BC237	
20	1	T402	BC557	
21	2	SW404,SW405	SPPH 11284	
22	12	SW410,SW401,SW401A,SW402, SW402A,SW403,SW403A,SW406, SW407,SW408,SW409,SW411		SPPH 11285
23	1	VR401	1K/PT10 LV	

HM6042 - SCREEN UNIT

NUMBER	TYPE or HAMEG Code	DESCRIPTION	NOTE
1	CRT 5005/240593	PCB for HM5005	
1	D14-363GY PHILIPS or ER14-11GY/I ELROG	electrostatic CRT	
1	68pF/3kV/10%	ceramic HV capacitor	10mm
1	shield unit	Mummetall	
1	rubber ring è 45mm		
2	screw M3x12 TF		
2	washer M3x0.5		
2	lockwasher M3		
4	nut M3		
1	plastic screen guide		
1	plastic screen sheet	green	100x120mm

MECHANICAL PARTS

NUMBER	TYPE	DESCRIPTION or HAMEG Code	NOTE
1	Frontpanel HM6042	Macrolon	„Frontdeckel“
1	Rearpanel HM6042	Macrolon	„R ckdeckel“
1	Frontchassis HM6042	Alu metall sheat 1.5	„Frontchassis“

1	Rearchassis HM6042	Alu metall sheat 1.5	,R ckchassis"	
1	Frontfolie HM6042	top & bottom & CRT	,Frontfolie"	
1	Frontframe HM6042	top & bottom & CRT	,Frontrahmen"	
2	Side bar LEFT HM6042	top & bottom	,Seitensteg"	
1	Side bar RIGHT-T HM6042	right top	,Seitensteg"	
1	Side bar RIGHT-B HM6042	right bottom	,Seitensteg"	
1	Side part RIGHT HM6042	,Seitenteil"		
1	Side part LEFT HM303	SIP 30R		
1	Centerwall HM6042	,Mittelwand"		
1	Cover PS (Netzteilhaube)	HM6042 only!		COV 30PS
2	brass washer è9/è3x1.5			
2	RC30L5/DIN 7340	brass rivet è3x5		
4	RC30L8/DIN 7340	brass rivet è3x8		
2	ground lug 25x8mm			
1	Cover HM303/5005/6042	,Gehäuse"		
1	,Handgriffeinheit"	complet!		
2	,Makrolonfuà vorne"			
2	,Makrolonfuà hinten"			
4	POP rivet è3x6 TF			88.9000002
12	POP rivet è3x6 TC			88.9000000
3	DIN 965	screw M3x6 TC		84.8130060
1	brass standoff M3x22			85.8003000
2	DIN 6798A	lockwasher M3 AZ		86.8010320
1	DIN 934	nut M3		
1	3.2x18 A1	brass lug è3.2x18		87.8000300
2	DIN 7985	screw M4x12 TCP		
2	DIN 934	nut M4		85.8004000
2	DIN 6798A	lockwasher M4 AZ		86.8010430
2	nut M4-cover			
2	washer M4x0.8			86.8004030
1	rear label			
2	thermoretractable sheath	è3x40 mm		99.9990015
1	thermoretractable sheath	è3x20 mm		99.9990015

HAMEG[®]

Instruments

Oscilloscopes

Multimeters

Counters

Frequency Synthesizers

Generators

R- and LC-Meters

Spectrum Analyzers

Power Supplies

Curve Tracers

Time Standards

Printed in Germany

Germany

HAMEG GmbH

Industriestraße 6
63533 Mainhausen
Tel. (06182) 8909 - 0
Telefax (06182) 8909 - 30
E-mail: sales@hameg.de

HAMEG Service

Kelsterbacher Str. 15-19
60528 FRANKFURT am Main
Tel. (069) 67805 - 24
Telefax (069) 67805 - 31
E-mail: service@hameg.de

France

HAMEG S.a.r.l

5-9, av. de la République
94800-VILLEJUIF
Tél. (1) 4677 8151
Telefax (1) 4726 3544
E-mail: hamegcom@magic.fr

Spain

HAMEG S.L.

Villarroel 172-174
08036 BARCELONA
Teléf. (93) 4301597
Telefax (93) 321220
E-mail: email@hameg.es

Great Britain

HAMEG LTD

74-78 Collingdon Street
LUTON Bedfordshire LU1 1RX
Phone (01582)413174
Telefax (01582)456416
E-mail: sales@hameg.co.uk

United States of America

HAMEG, Inc.

266 East Meadow Avenue
EAST MEADOW, NY 11554
Phone (516) 794 4080
Toll-free (800) 247 1241
Telefax (516) 794 1855
E-mail: hamegny@aol.com

Hongkong

HAMEG LTD

Flat B, 7/F,
Wing Hing Ind. Bldg.,
499 Castle Peak Road,
Lai Chi Kok, Kowloon
Phone (852) 2 793 0218
Telefax (852) 2 763 5236
E-mail: hameghk@netvigator.com

4S-6042-00E0