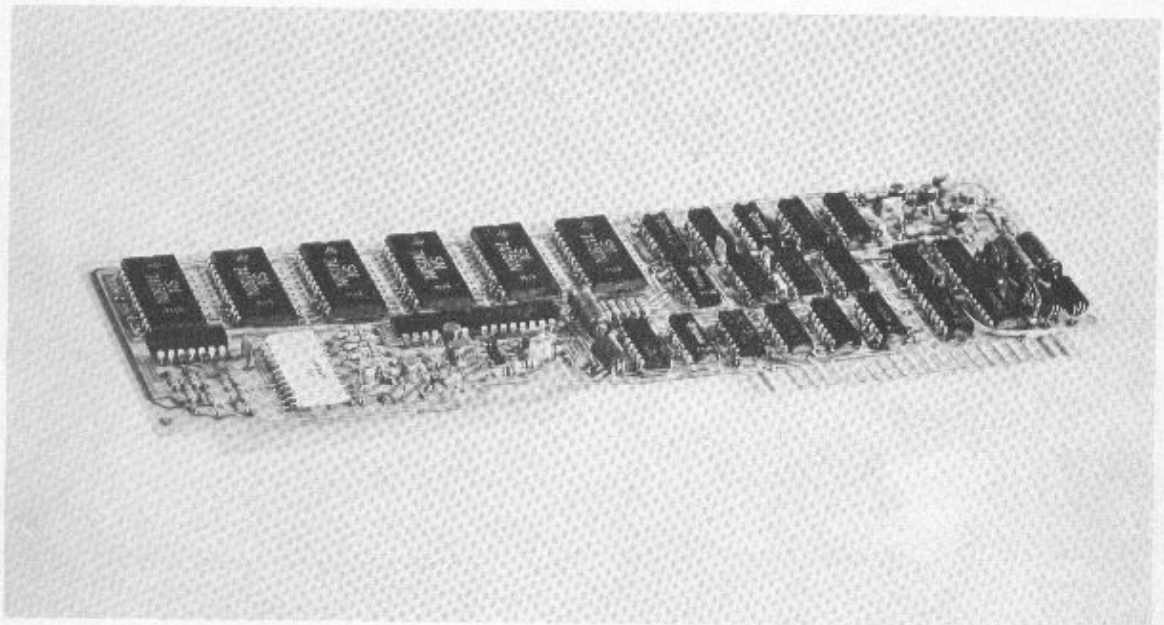
PHILIPS



MANUAL

PLUG-IN TEXT GENERATOR UNIT PM5543

9449 055 430..

9499 490 06111 1/172/1/01

Contents

List of figures

I. Introduction

The PHILIPS PM 5543 is a sub-unit which can be used in combination with the colour/monochrome pattern generator PM 5544 to insert text for transmitter station and/or channel indication.
The text can be displayed in the two rectangles specially provided for this purpose in the pattern (see fig. 1).
The coding and recoding of the unit has to be done by the factory.
The text in the upper bar can consist of up to 7 characters and in the lower bar up to 10 characters.
The PM 5543 can easily be mounted in the PM 5544 G as well as M-version, however, for the first series of the PM 5544 some modifications has to be done (see chapter V. Installation).

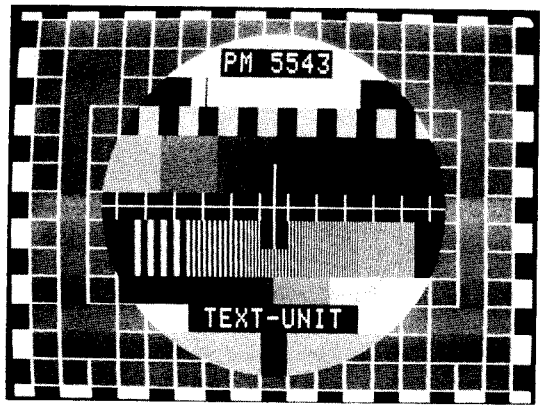


Fig. 1. Text in the pattern of the PM 5544

II. Characters

The function of the text generator is based on the integrated circuit FDR 116 Z1. This is a so-called R.O.M. circuit (Read Only Memory) which generates 64 different characters in a 5 times 7 dot matrix (see Fig. 2).
In a TV display the dot is formed by a white square having a width of 0.2 μs and a height of 2 lines/field.
This means that one character, white on a black background, takes the space of a rectangle of 1 μs times 28 lines/frame.
The horizontal position of the character rows are independently adjustable giving the possibility of a symmetrical display of the text in both bars.
The text amplitude is automatically the same as peak white in the testpattern.

III. Coding

To generate the desired character the R.O.M. circuit must be coded (0 or 1) according to the scheme in figure 2 (terminals A4...A9).
As the text generator is able to supply 7 and 10 characters in respectively upper and lower bar, the A4...A9 combinations should be shifted 7 resp. 10 times.
The shifting of the combinations takes place in the sign selectors controlled by the 16:1 divider and the sign matrix (terminals E0 - E15; see fig. 7).
The matrixing is made by jumpers soldered at the rear of the printed wiring board taking care of a correct code (0 or 1) to the sign selectors.

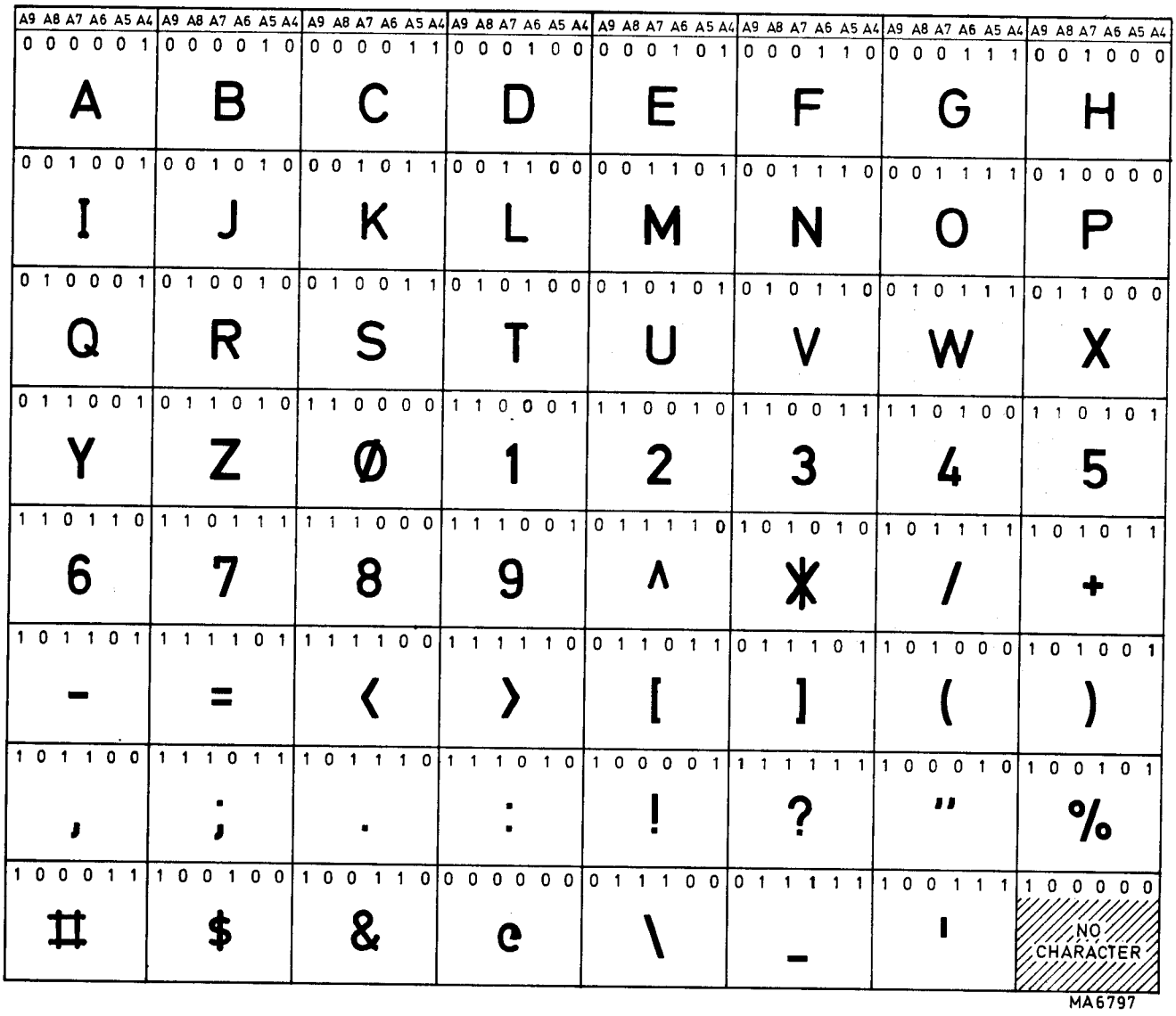


Fig. 2. Survey of the different characters

IV. Description of the blockdiagram

The unit is supplied with the necessary drive pulses from the PM 5544. The pulses V5-7, V23-25 and H14-34 are applied to the clock key generator, which secures the start/stop of the 8.6 MHz clock oscillator. The clockpulses are applied to a divider system controlled by the time pulse, frame pulse and V17-19 pulse. The obtained pulses (A...H) control the sign selectors, read in/read out gate and the clock gate.
The sign selectors select successively the terminals E0 up to E15 by means of the pulses A, B, C and D. These terminals are connected via the sign matrix to logical 1 or 0.
The output pulses W1 up to W6 of the sign selectors are applied via amplifiers to the inputs of the R.O.M. circuit (A4 up to A9).

The pulse Ø 1 and Ø 2 control the read in and horizontal read out of the R.O.M. circuit while the vertical read out is controlled by the pulses A1, A2, A3 supplied from the time selector.
The output of the R.O.M. circuit (Q1...Q5) is supplied to the shiftregister, which is controlled by the pre-set gate and the clock gate.
The obtained signal is applied, via a flip-flop, to the output circuit.

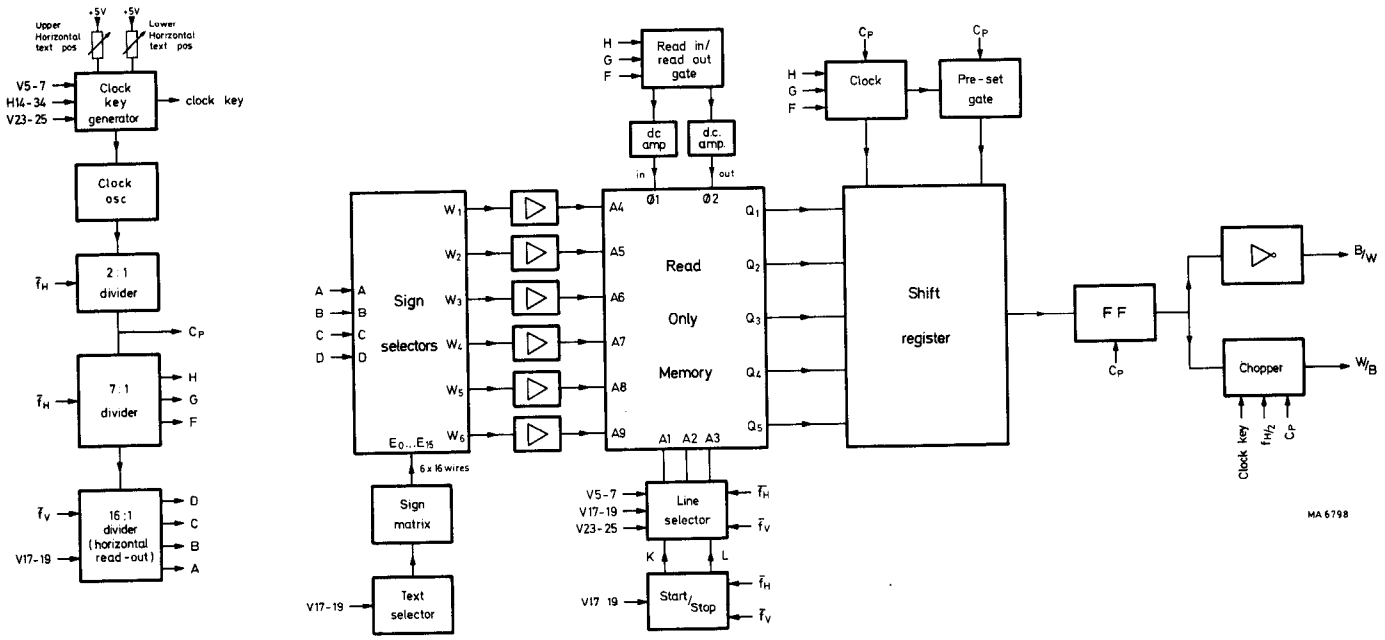


Fig. 3. Blockdiagram

V. Installation

The PM 5543 can easily be plugged into the PM 5544.
However, depending on the versions the following modifications should be carried out:

1. PM 5544/01

- Insert contact blocks and guide parts for PM 5543
- Mount the current gate, unit 18
- Modify the wiring according fig. 4
- Remove white needle pulse in lower bar (see PM 5544/03)
- Change C21 (100 kpF) of unit 6 to 220 kpF

2. PM 5544/02

- Mount unit 18, Current gate with wiring (see fig. 4)
- Remove white needle pulse in lower bar (see PM 5544/03)
- Connect a capacitor of 220 kpF between base and collector of TS11of unit 6 (between R38-R41)

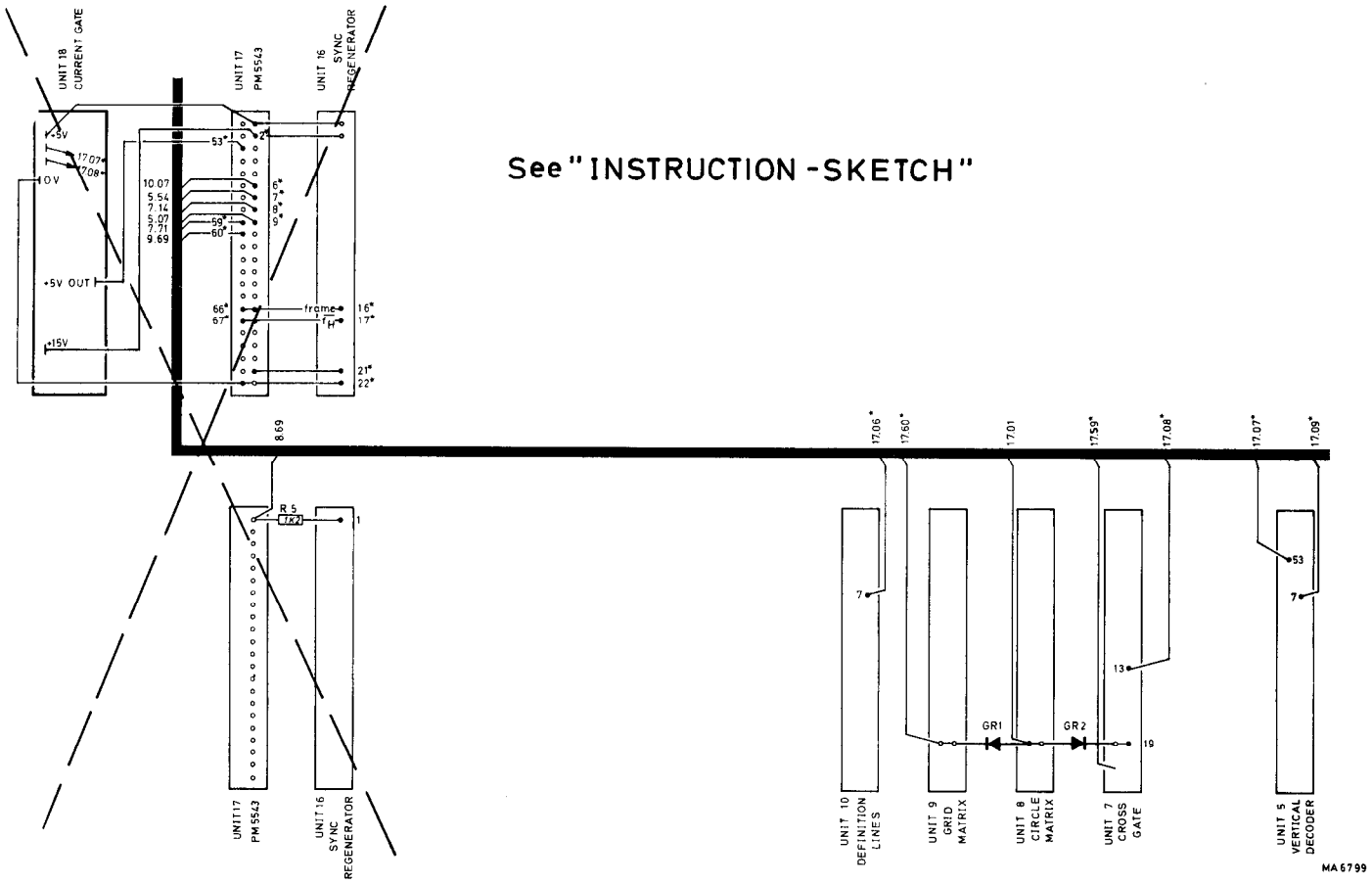


Fig. 4. Modification of the wiring diagram of the PM 5544

3. PM 5544/03

-- Remove white needle pulse in lower bar by interrupting interconnections between upper and lower side on printed wiring board unit 7 (see fig. 5)

Horizontal positioning of the texts

The text in upper and lower bar should be placed symmetrically with respect to each other.
To enable this, the text in the two bars can be shifted in horizontal direction one character by means of the potentiometers R1 and R2 for respectively upper and lower bar (see fig. 7).

Connections for different letter types

As stated in the circuit diagram there is a possibility to obtain different letter types by means of connections on the printed wiring board (see fig. 7).
These connections have to be made between upper trace and lower trace and are marked Ab, DC and DE (see fig. 6).

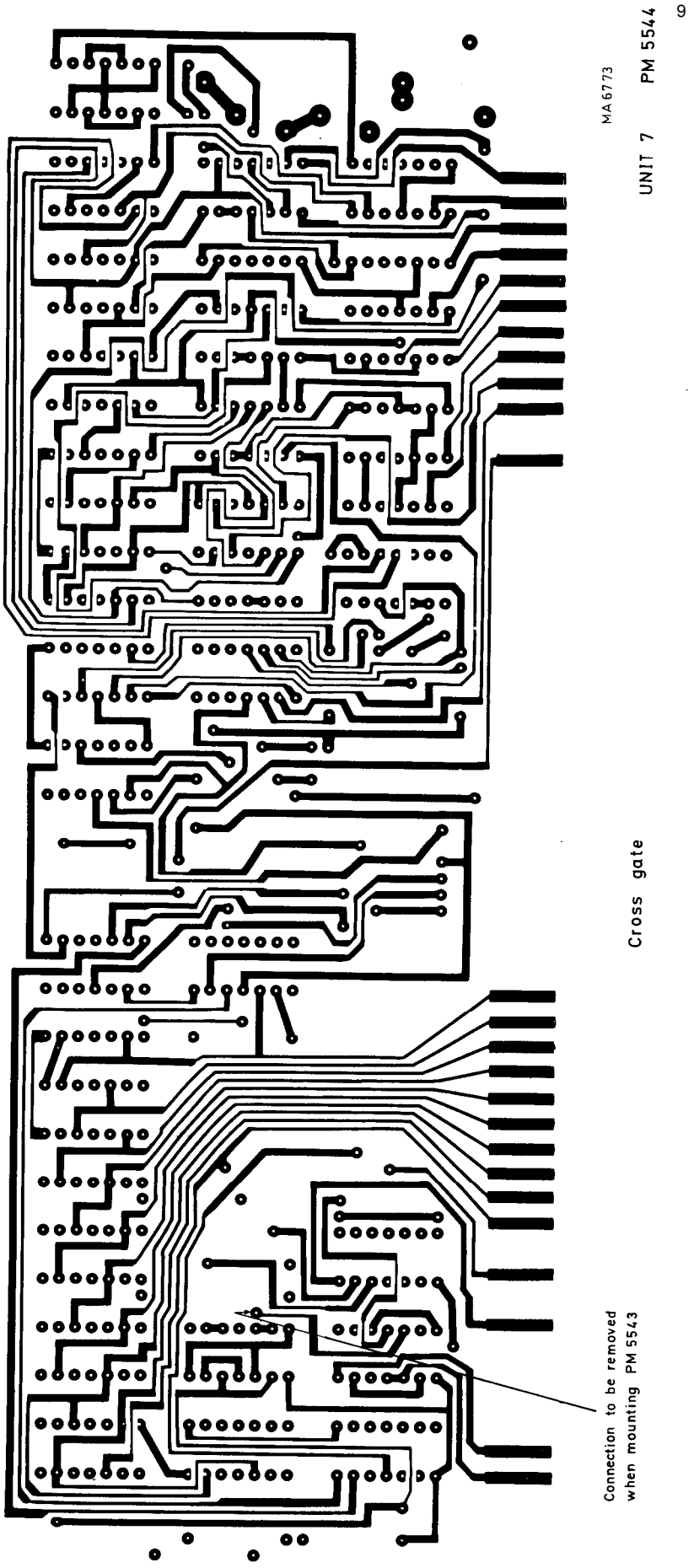


Fig. 5. Removing white needle pulse

VI. List of spare parts

Description	*Type/Item*	*Value*		*Ordering number*
Integrated circuit	FJH111	–		5322 209 80107
Integrated circuit	FJH121	–		5322 209 80062
Integrated circuit	FJH131	–		5322 209 80023
Integrated circuit	FJH141	–		5322 209 80198
Integrated circuit	FJH151	–		5322 209 80125
Integrated circuit	FJH221	–		5322 209 80128
Integrated circuit	FJJ121	–		5322 209 80108
Integrated circuit	FJJ131	–		5322 209 80065
Integrated circuit	FJJ211	–		5322 209 84027
Integrated circuit	SN7404N	–		5322 209 80148
Integrated circuit	SN74121N	–		5322 209 84017
Integrated circuit	SN75150N	–		5322 209 84034
Integrated circuit	SN7416N	–		5322 209 84035
Integrated circuit	SN7417N	–		5322 209 84036
Integrated circuit	SN7496N	–		5322 209 84038
R.O.M. circuit	FDR116Z1	–		5322 209 84037
Transistor	2N2894	–		5322 130 40018
Transistor	BCY71	–		5322 130 40373
Diode	BAX16	–		5322 130 30273
Diode	BAX78	–		5322 130 30331
Coil	L1...L3	–		5322 158 10052
Capacitor	C4	56 pF		5322 122 30028
Capacitor	C5	100 pF		5322 122 30021
Capacitor	C6-C8	220 pF		5322 122 30101
Capacitor	C3-C7	33 pF		5322 122 30016
Electrolytic capacitor	C9	22 µF	6.3 V	5322 124 10008
Electrolytic capacitor	C10	8.2 µF	16 V	5322 124 10067
Electrolytic capacitor	C11	15 µF	10 V	5322 124 24008
Potentiometer	R1, R2	10 kΩ		5322 100 10125

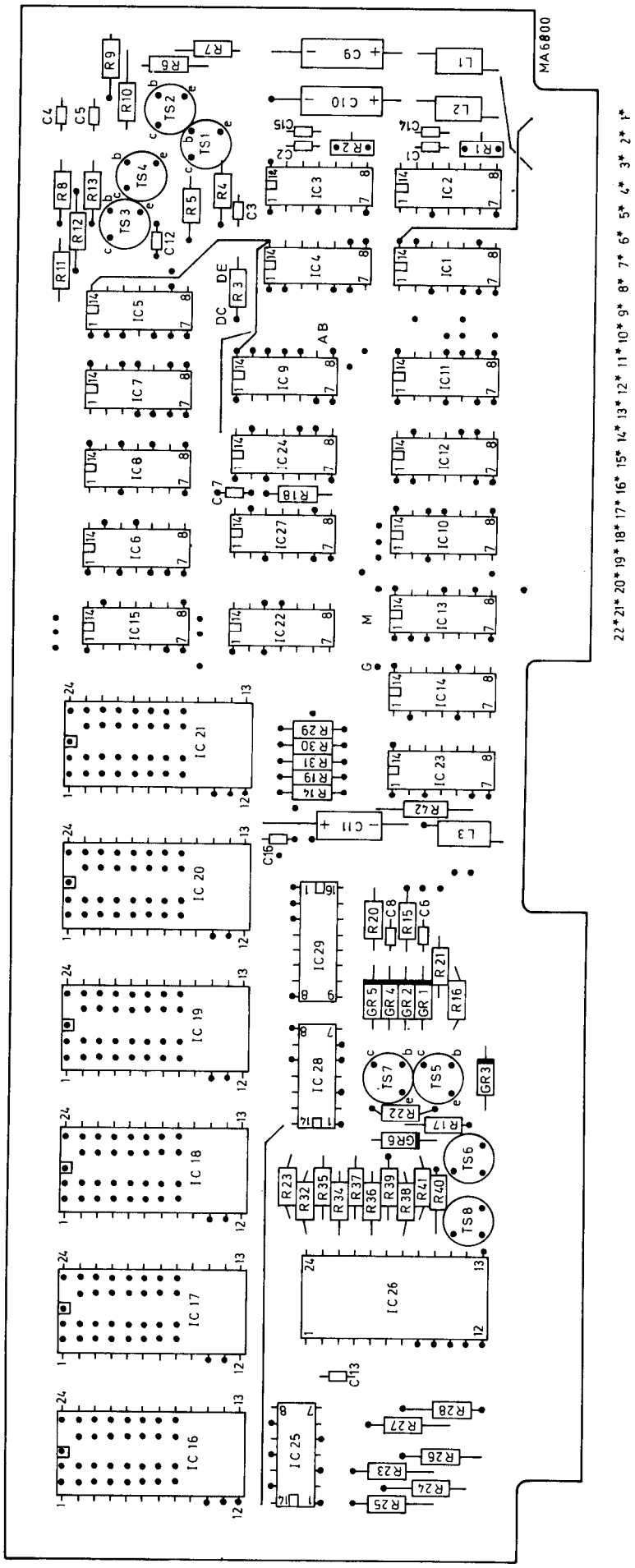


Fig. 6. Printed wiring board PM 5543

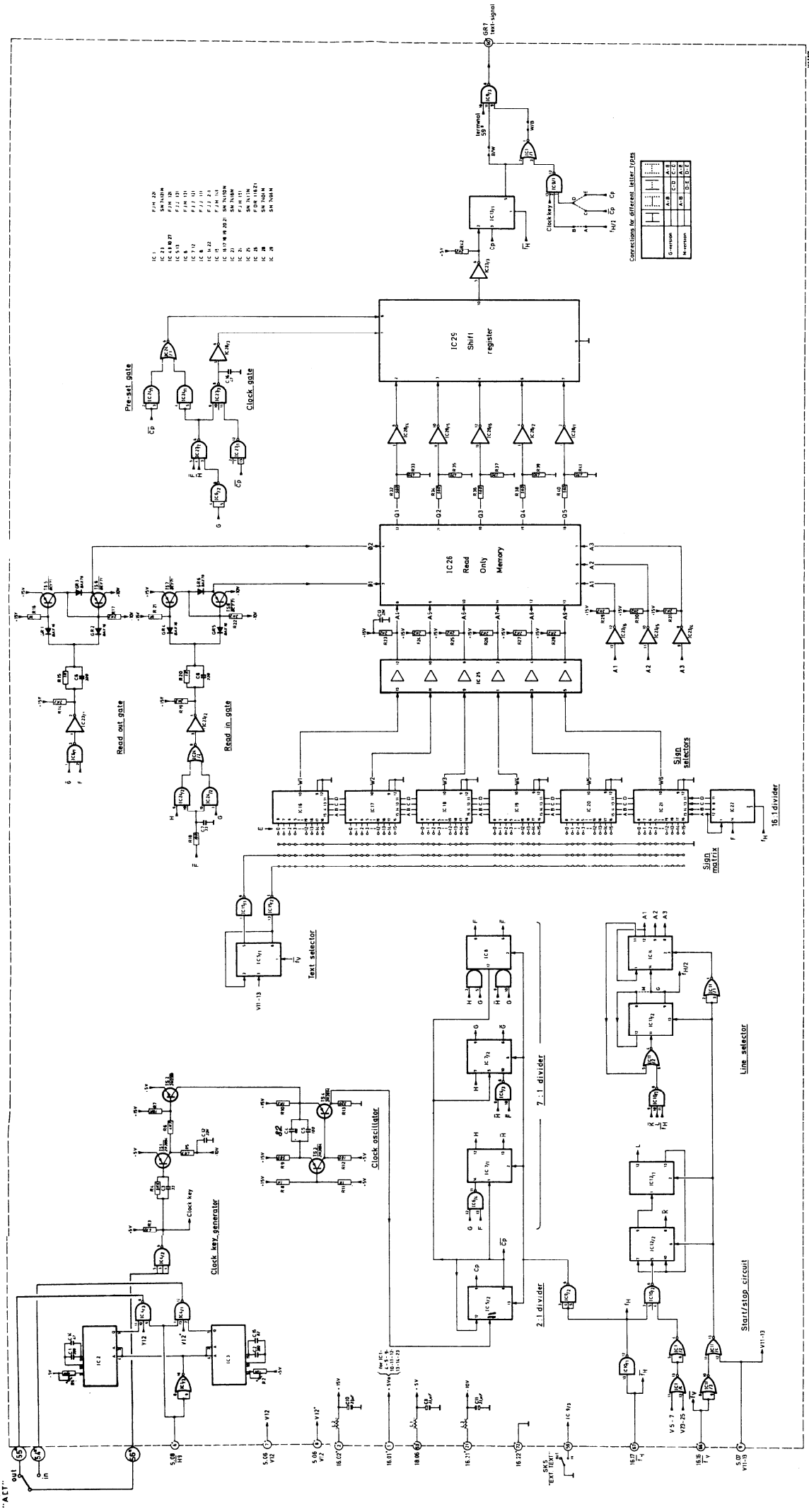
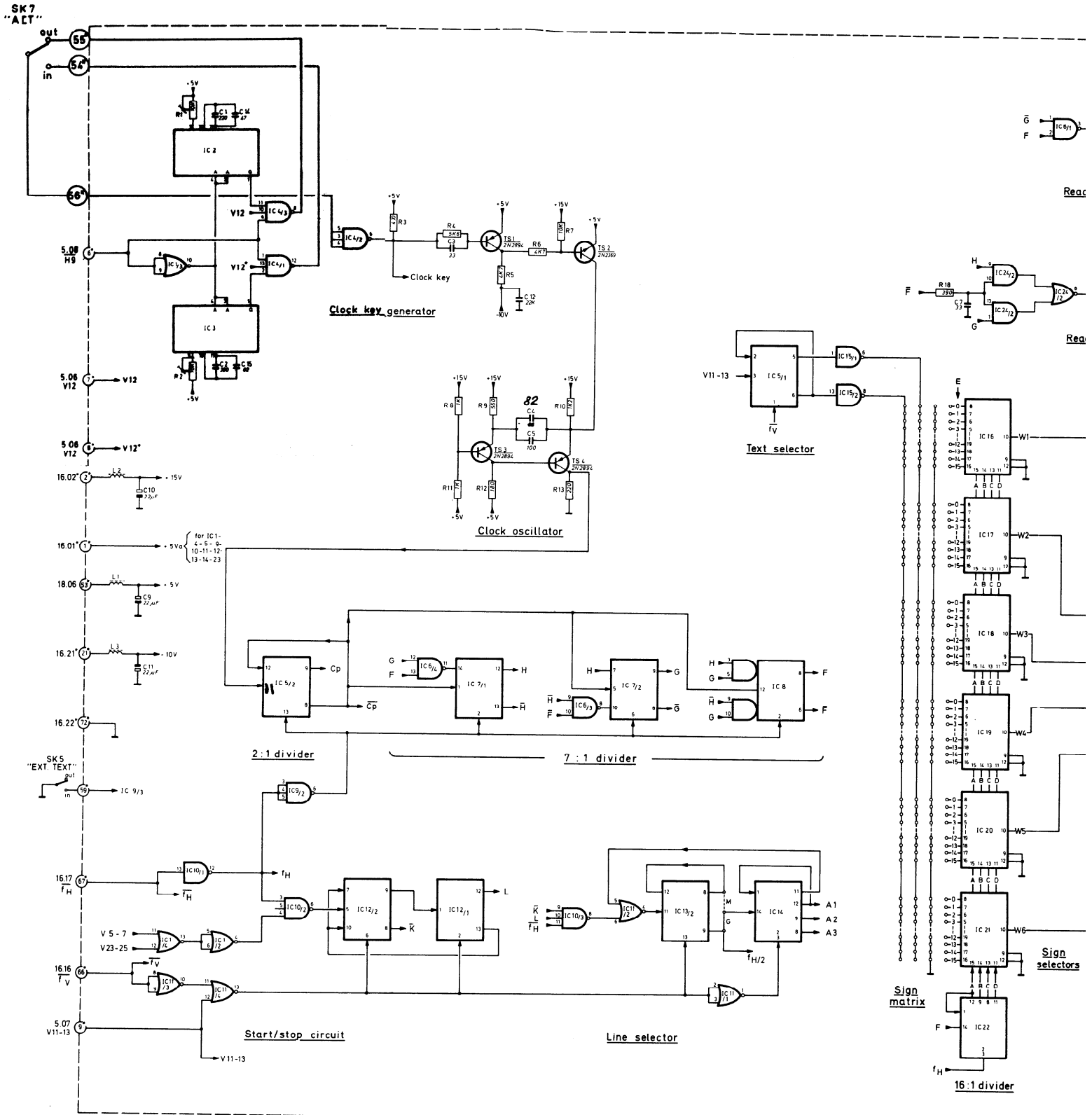


Fig. 7. Circuit diagram PM 5543


SK 7
"ALT"
out
in
55
54
56
Clock key generator
Clock key
Clock oscillator
Text selector
2 : 1 divider
7 : 1 divider
SK 5
"EXT. TEXT"
Start/stop circuit
Line selector
Sign matrix
Sign selectors
16 : 1 divider
Reac
Reac

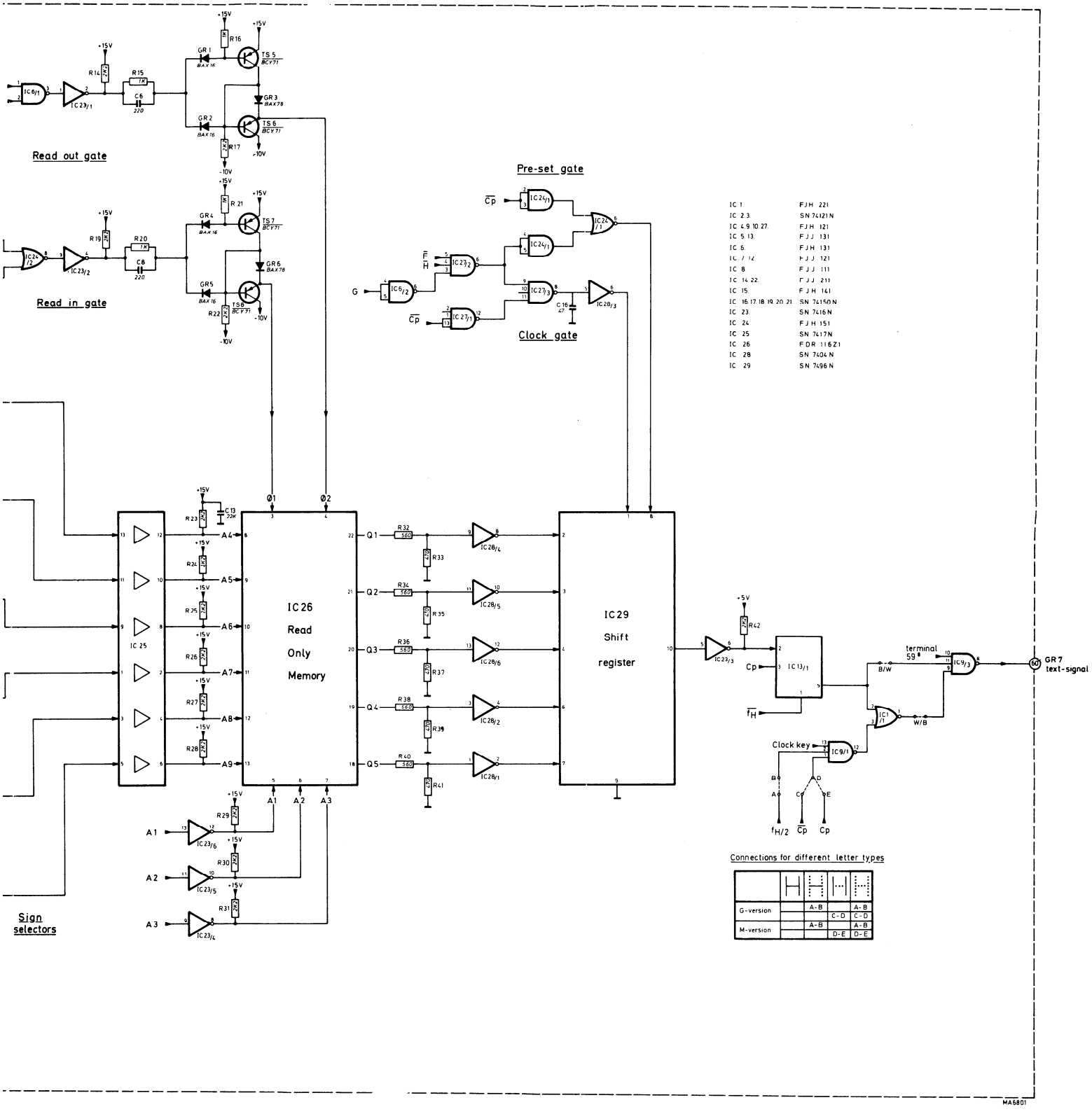


Fig. 7. Circuit diagram PM 5543