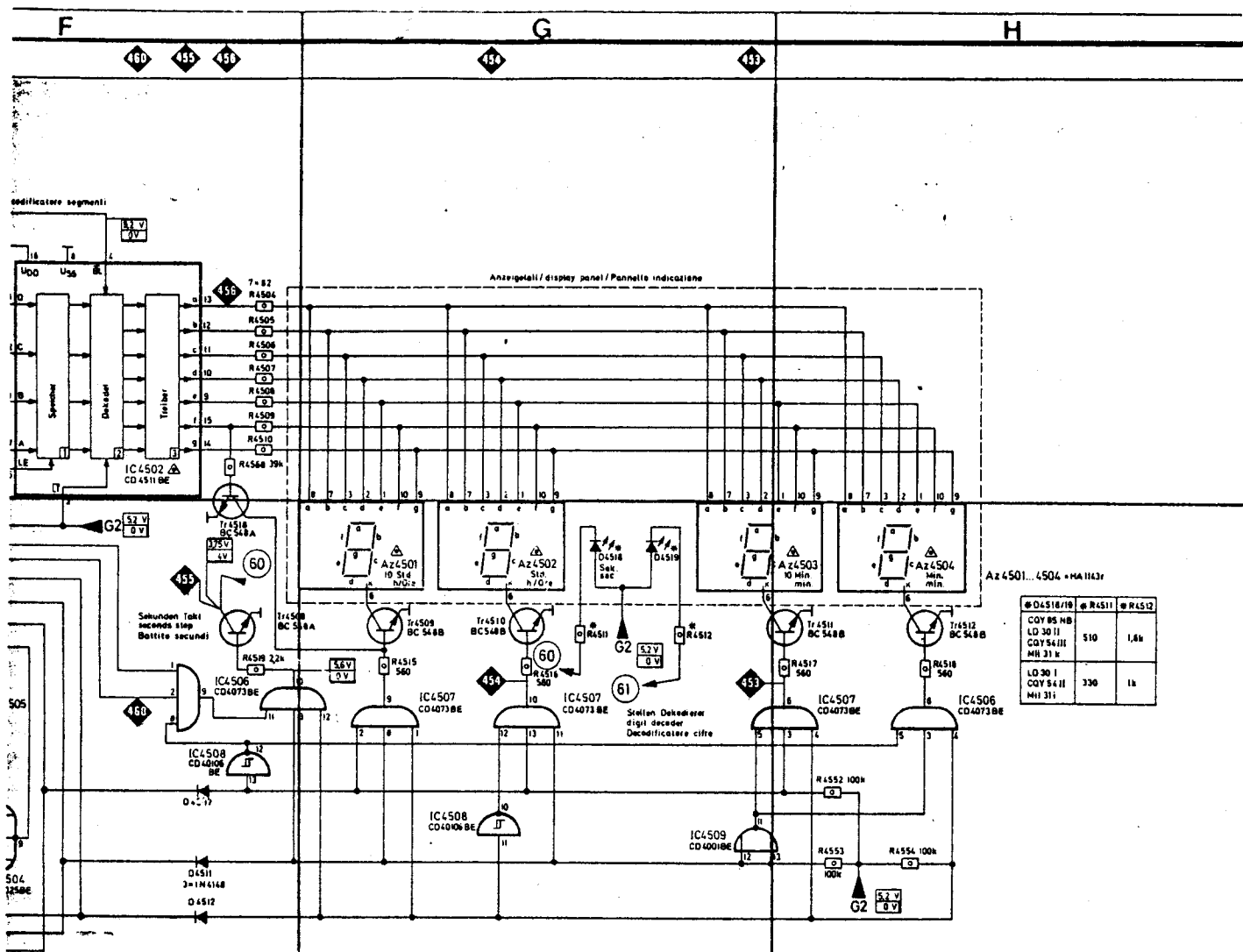


- ne ung  
:zentel:  
Ersatzteil verwenden!  
in Ersatzteil-Liste  
original spare part only!  
parts list for order number  
teile can components original!  
diversa vedere lista  
ricambio  
Leistung  
volume  
Volume  
Helligkeit  
brightness  
Luminosità
- IC 200  
1. gain controlled IF amplifier/Amplicatore FI controllato  
2. noise blanking/Eliminazione rumore  
3. AGC-detector, noise limiter/Amplicatore tensione a controllo  
4. synchronous demodulator/Demodulatore sincrono  
5. video amplifier/Amplicatore video  
6. AP1-synchronous demodulator/Demodulatore sincrono per  
7. limiter-amplifier/Amplicatore limitatore
- IC 501  
1. clamping control/Regolazione ripristinazione livello  
2. matrix/Matrice  
3. display blanking/Cancellazione scritta  
4. differential amplifier/Amplicatore differenziale
- IC 671  
1. phase detector/Comparazione di fase  
2. gating pulse separator/Separatore impulsi porta  
3. oscillator/Oscillatore  
4. flipflop/Multivibratore  
5. H/2-Detector  
6. divider/Divisor  
7. PAL-switch/Interruttore PAL  
8. color killer/Color killer  
9. B-Y demodulator/Demodulatore  
10. G-Y matrix/Matrice  
11. R-Y demodulator/Demodulatore
- IC 601  
1. contrast control/Regolazione contrasto  
2. saturation control/Regolazione saturazione  
3. blanking/black level-clamping/Cancellazione/  
4. gelad amplifier/Amplicatore comando a porta  
5. gating pulse separator/Separatore impulsi porta

**Metz** COLOR 6964 6983\*  
6984\* 6998\*  
7064

\* auch als Modelle A/E/N/T  
also models/anche modelli  
Chassis 679 G-0038  
Ton- und Bildsignalstufen  
Sound and picture circuits  
Circuiti suono ed immagine  
Tafel 1  
Board 1  
Tavola 1



Q4518/19	R4511	R4512
Q4518 MB	510	1.6k
Q4519 MB	510	1.6k
Q4520 MB	510	1.6k
Q4521 MB	510	1.6k
Q4522 MB	510	1.6k
Q4523 MB	510	1.6k
Q4524 MB	510	1.6k
Q4525 MB	510	1.6k
Q4526 MB	510	1.6k
Q4527 MB	510	1.6k
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Q4594 MB	510	1.6k
Q4595 MB	510	1.6k
Q4596 MB	510	1.6k
Q4597 MB	510	1.6k
Q4598 MB	510	1.6k
Q4599 MB	510	1.6k
Q4600 MB	510	1.6k

TS-Mod.  
678 TS0028

- IC4501**
- 1 QP counter
  - 2 digit decoder
  - 3 seconds minutes and hours multiplexer
  - 4 shaping circuit
  - 5 24 hours counter
  - 6 60 minutes counter
  - 7 60 minutes counter
  - 8 60 minutes counter
  - 9 60 seconds counter
  - 10 50 sec. pre-scale counter
  - 11 Predivisor 50 x 60
  - 12 comparator
  - 13 control logic and QP buffers
  - 14 Pilotaggio logica e stadi d'uscita

**Achtung:** Trimmer C4501 nicht verstellen!  
Nach Ausfall neben stehender Bauelemente ist das TS-Modul ins Werk zur Reparatur einzusenden:

**Attention:** Do not adjust trimmer C4501!  
After falling-out of the components listed on the right the TS-Module should be repaired at the factory:

**Attenzione:** Non ritoccare il trimmer C4501!  
Il modulo TS dovrà essere inviato in fabbrica in caso di guasto dei componenti a fianco:

Änderungen vorbehalten! Subject to changes! Soggetto a leggere varianti!

Bestell-Nr. siehe Bauteilungs-Plan  
for ident. no. see component scheme  
of p.c.  
Il n. di ordinazione si trova presso il  
piano di montaggio

Tr4513, Tr4514  
R4550, R4551, R4552  
C4501, C4503  
Q4501



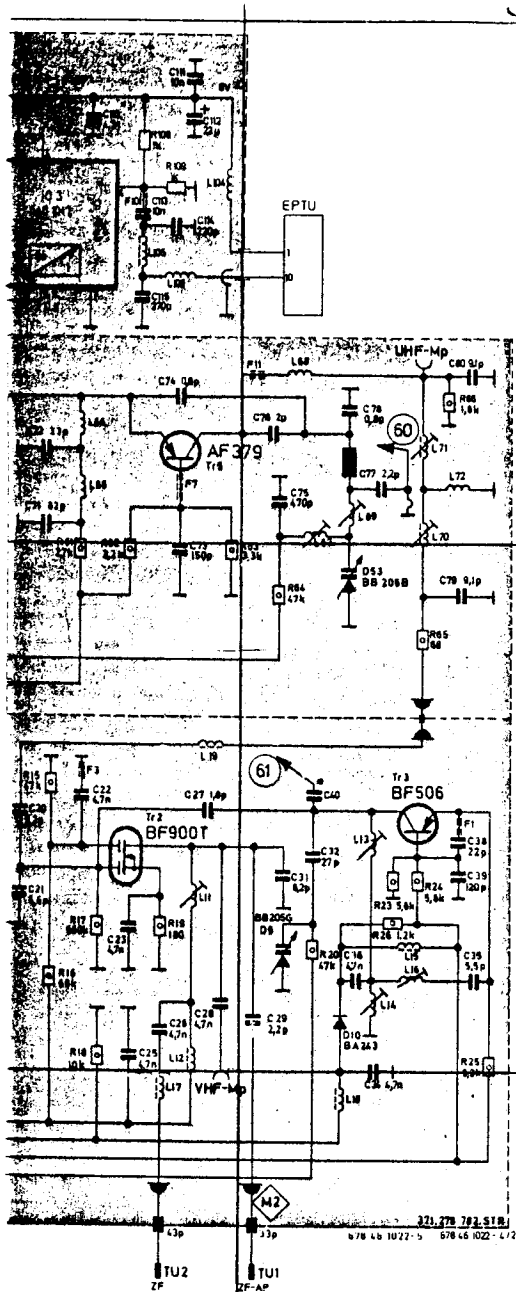
COLOR 6964\* 6984\*  
6998\* 7064

\* auch als Modelle A/E/N/T  
also models / anche modelli

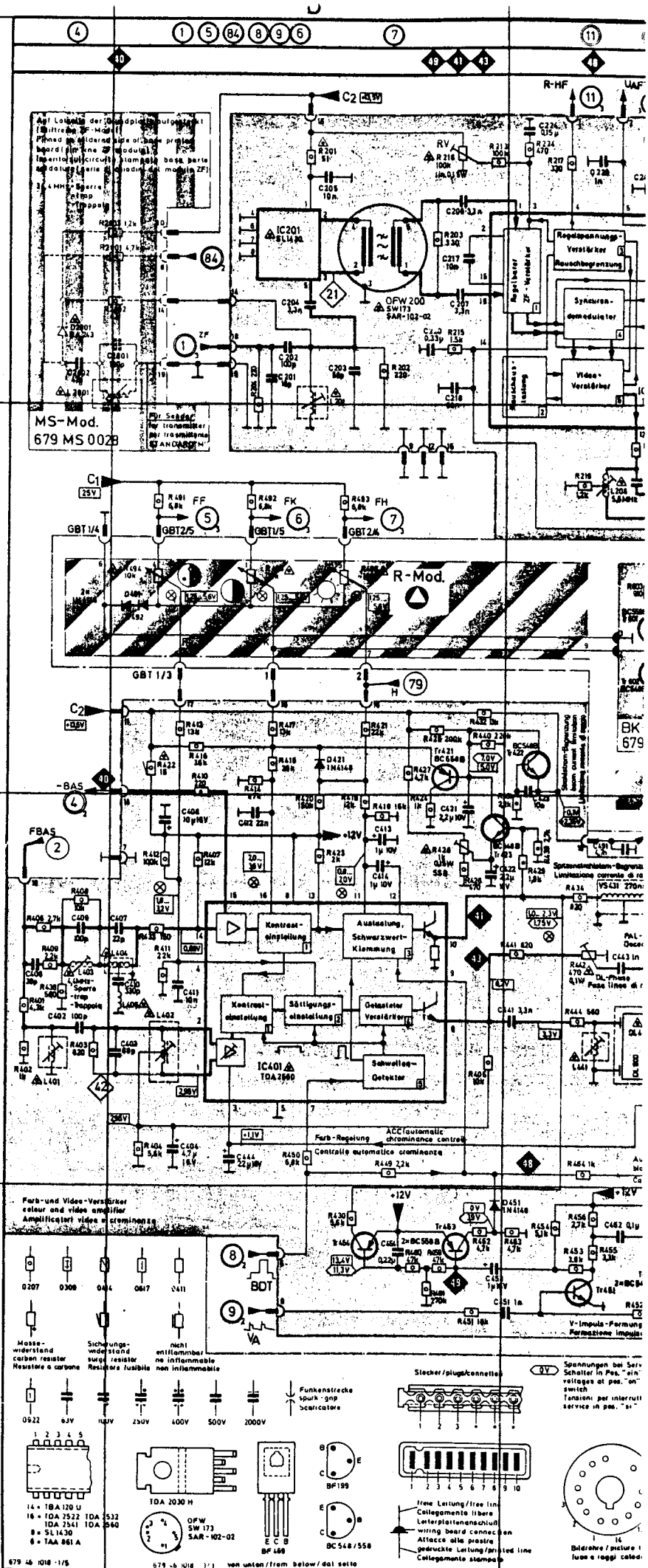
Chassis 679 G-0038

Quarz-Elektronik-Uhr  
Electronic digital clock  
Orologio elettronico a quarzo

S 679 46 8019/28008



grammwahl-Electronic (Tafel 3)  
ronic program-selection (board 3)  
uito v. selezione programmi (tavola 3)  
ia vedere l'apposito schema allegato.







A

B

C

BF-Mod.  
678 BF0014  
678 BF0022

Test/verif/teste  
Symbols  
symboli

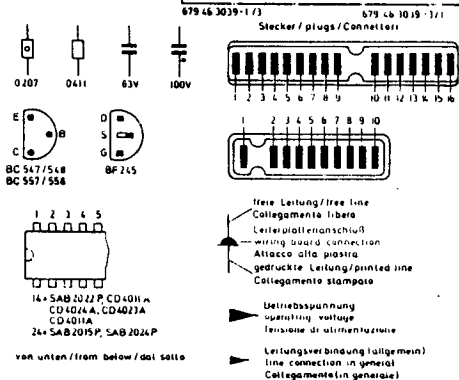
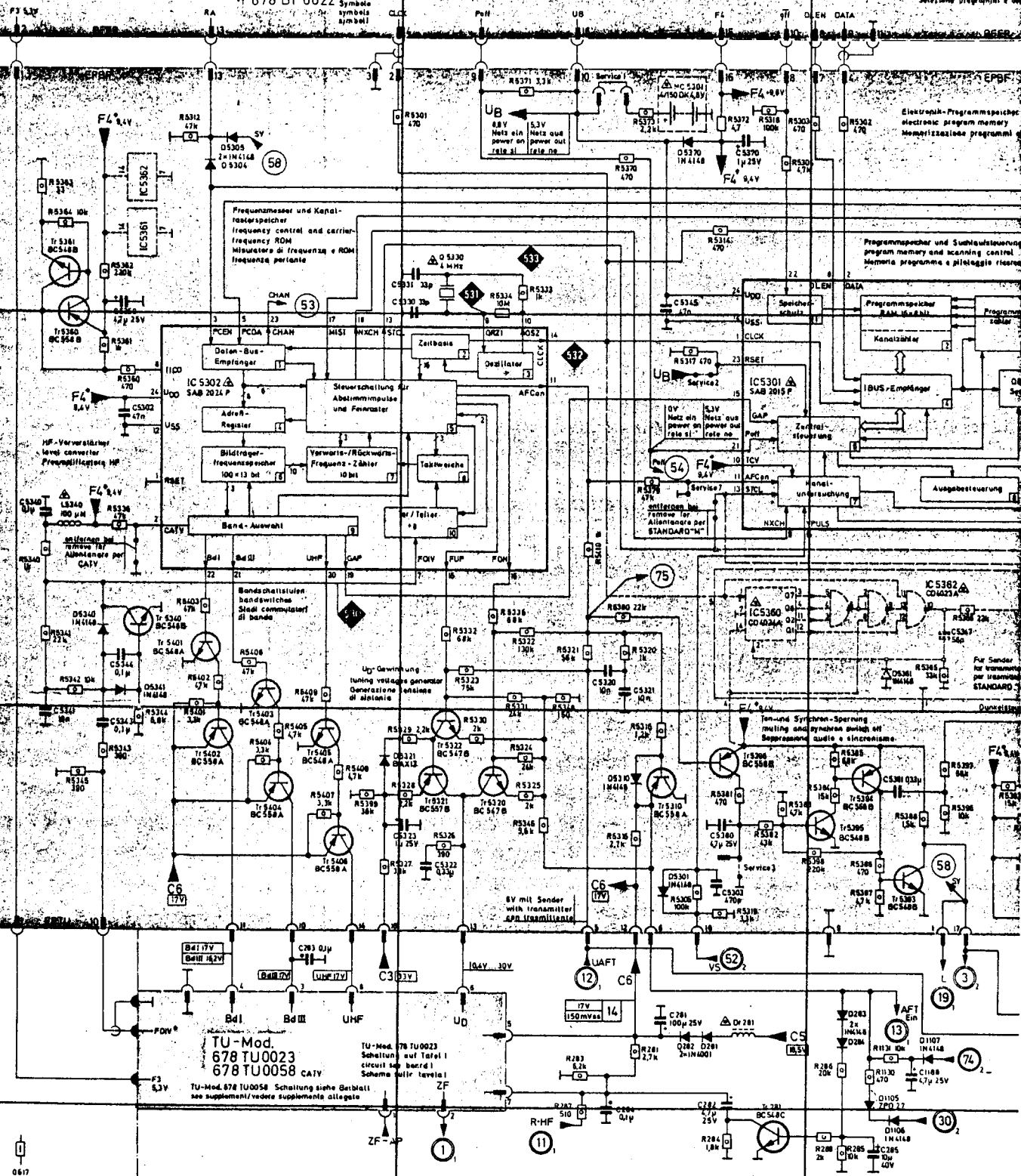
Programmwahl-Beitrag:  
program selection and scan  
Selezione programmi e scan

1

2

3

4



Spannungen mit Schwarz-Weiß-Signal gemessen  
voltages measured with black and white signal  
tensioni misurate con segnale bianco nero

Betriebsspannung/operating voltage/tensione di alimentazione

Diagnose Punkt/diagnostic point/punto diagnostico

Drumspannung/hum voltage/tensione di rumore  
gemessen ohne Ton, Strahlstrom max. 220V -  
measured without volume, beam current max. 220V -  
misurate senza volume, corrente di raggio max. 220V -

Leitungen fahrend auf Tafel 1 ad 2  
lines conduct to board 1 ad 2  
collegamenti: condurre alle tavole 1 e 2

Tafel/board/tavola

Messpunkt/Oscillogramm  
waveform test point  
Punto di misura con oscillogramma

Attention: For Original Ersatzteile verwenden!  
Install-Nr. siehe Ersatzteile Liste  
Attention: please use original spare parts list for order number  
Attenzione: Sostituire soltanto con componente originale!  
Per la ordinazione vedere lista componenti  
di ricambio

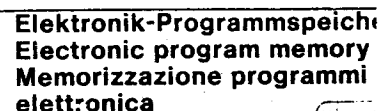
IC5302

- 1 Data Bus receiver/Bus data del ricevitore
- 2 clock/Marcatore di tempo
- 3 oscillator/Oscillatore
- 4 address register/Registro indirizzi
- 5 control unit for tuning voltage generation and micro function/Unità di controllo per la generazione tensione di sintonia e tensione a microgradini
- 6 ROM for carrier frequency/ROM per frequenze portanti
- 7 Up/down frequency counter 10 bit/Contatore di frequenza in avanti/alla reverse
- 8 control/Quarantena marcatore tempo
- 9 band selection/Selezione banda di frequenza
- 10 gate and 8 bit divider/Porta e divisore per 8

IC5301

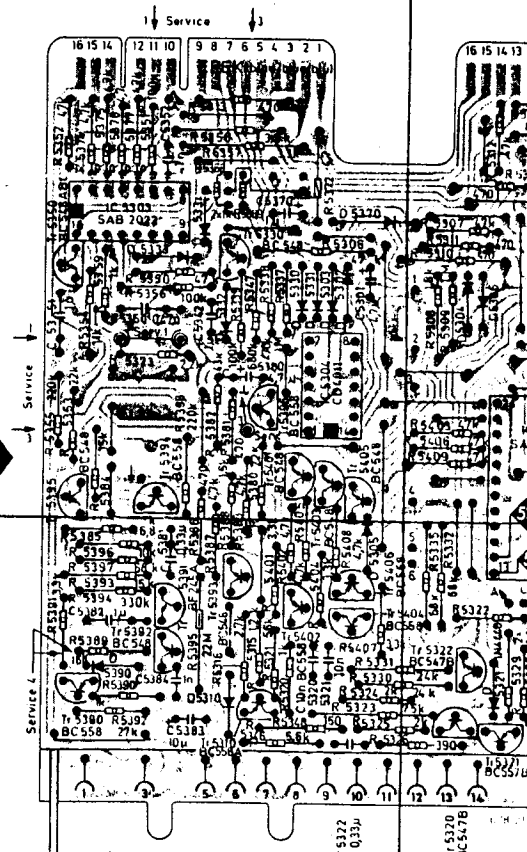
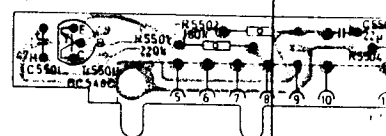
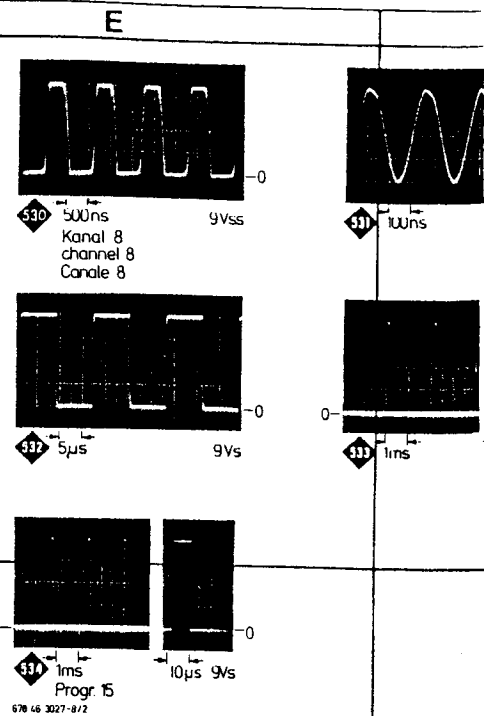
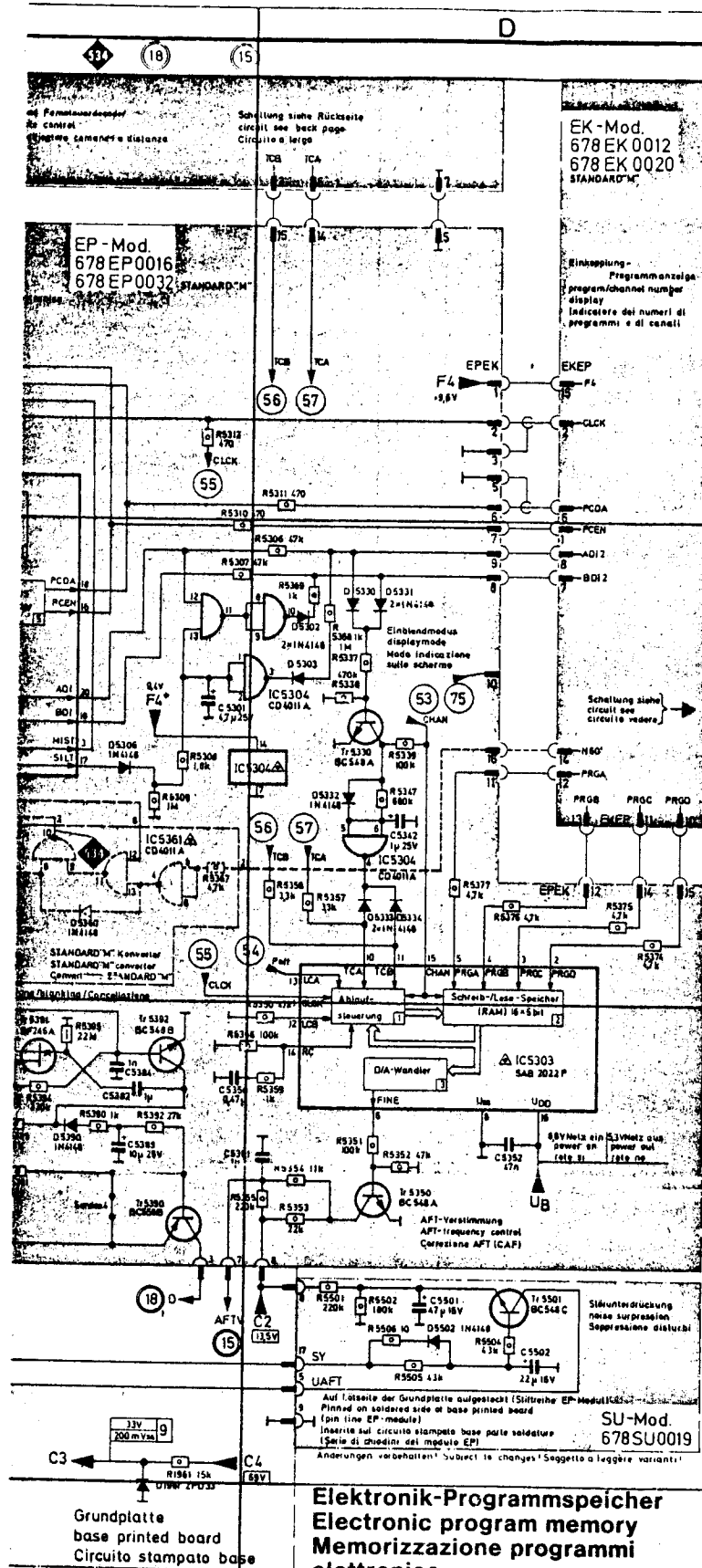
- 11 control unit/Pilottaggio udimento
- 12 16 x 5 bit RAM
- 13 D/A converter/Convertitore D/A

Service



Service 7 Abschaltung Kanaluntersuchung  
switch off IV signal recognizing  
Disinserzione indagine canale





**EP-Mod. 678 EP 0016 678 EP 0032 Standard "M"**

Sicht auf gelötete Seite! View on to solder



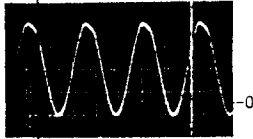
E

F

G



530 500ns  
9Vs  
Kanal 8  
channel 8  
Canale 8



531 100ns  
11Vs



532 5µs  
9Vs

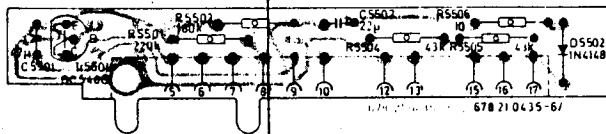


533 1ms  
10µs 9Vs

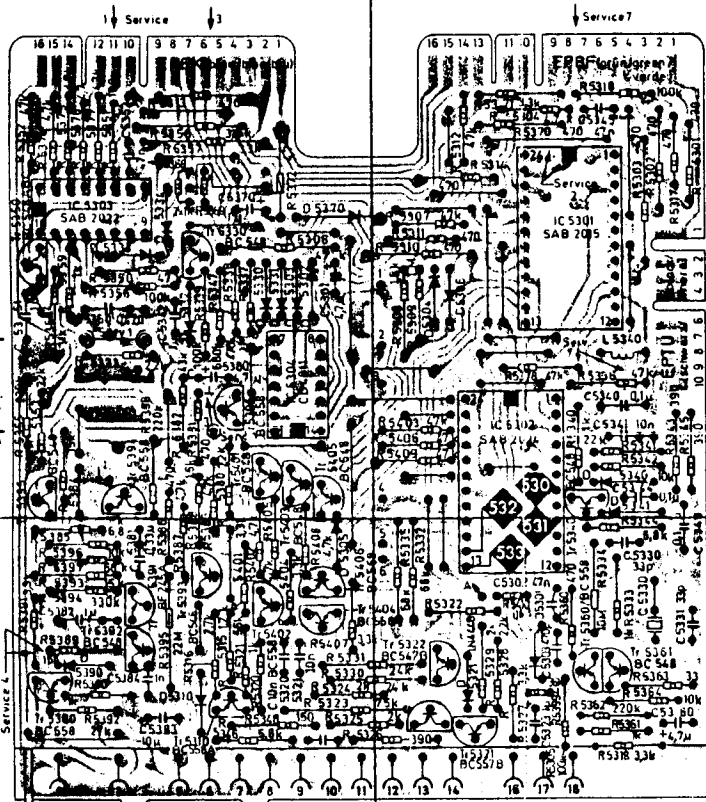


534 1ms  
10µs 9Vs

678 16 3027-6/2

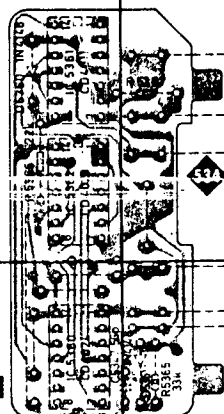


**SU-Mod.**  
**678 SU 0019**

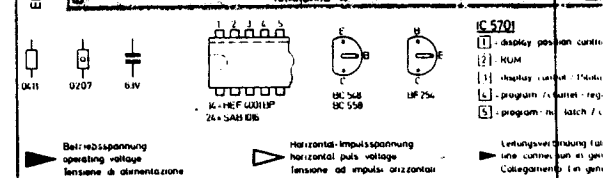
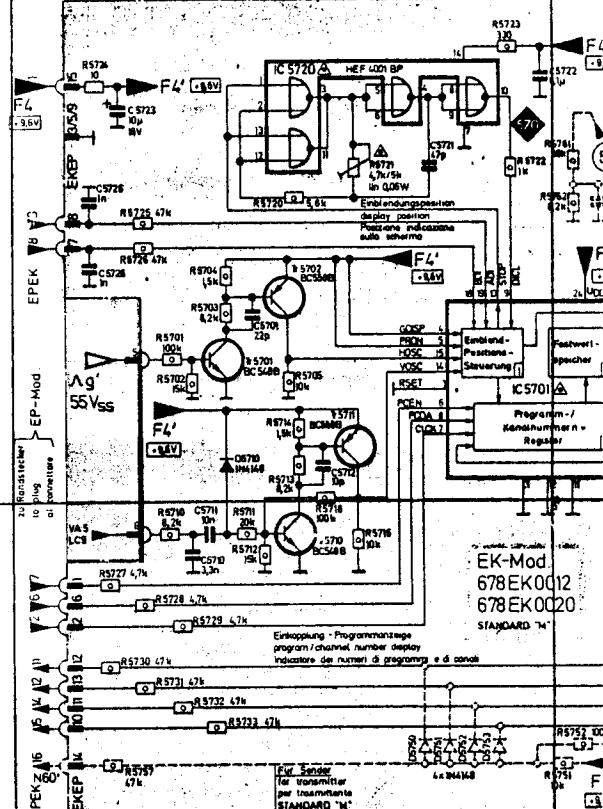


**EP-Mod.**  
**678 EP 0016**  
**678 EP 0032 Standard „M“**

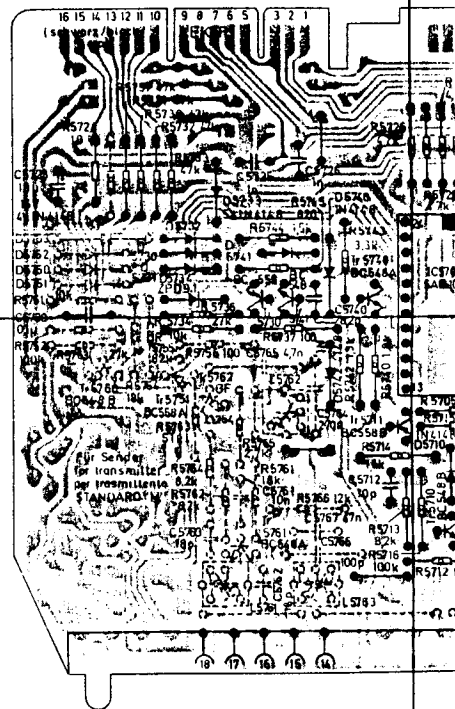
Nicht auf gelötete Seite! View on to soldered side! Vista dalla parte saldata!  
Änderungen vorbehalten! Subject to changes! Soggetto a leggere varianti!



**EK-Mod.**  
**678 EK 0012/2**  
**678 EK 0020/2 Standard „M“**

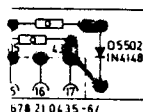


**Einkopplung - Programmanzeige**  
**Program/channel number display**  
**Indicatore dei numeri di programmi e di ca**



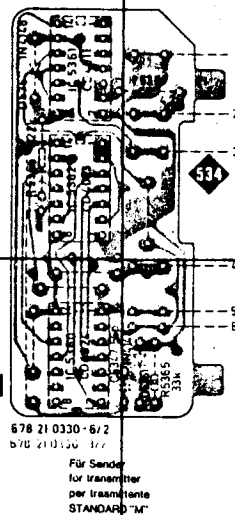
**EK-Mod.**  
**678 EK 0012/2**  
**678 EK 0020/2 Standard „M“**

0



Nur während der Einblendung vorhanden:  
appearing on the screen only during indication  
Solo durante l'indicazione sullo schermo

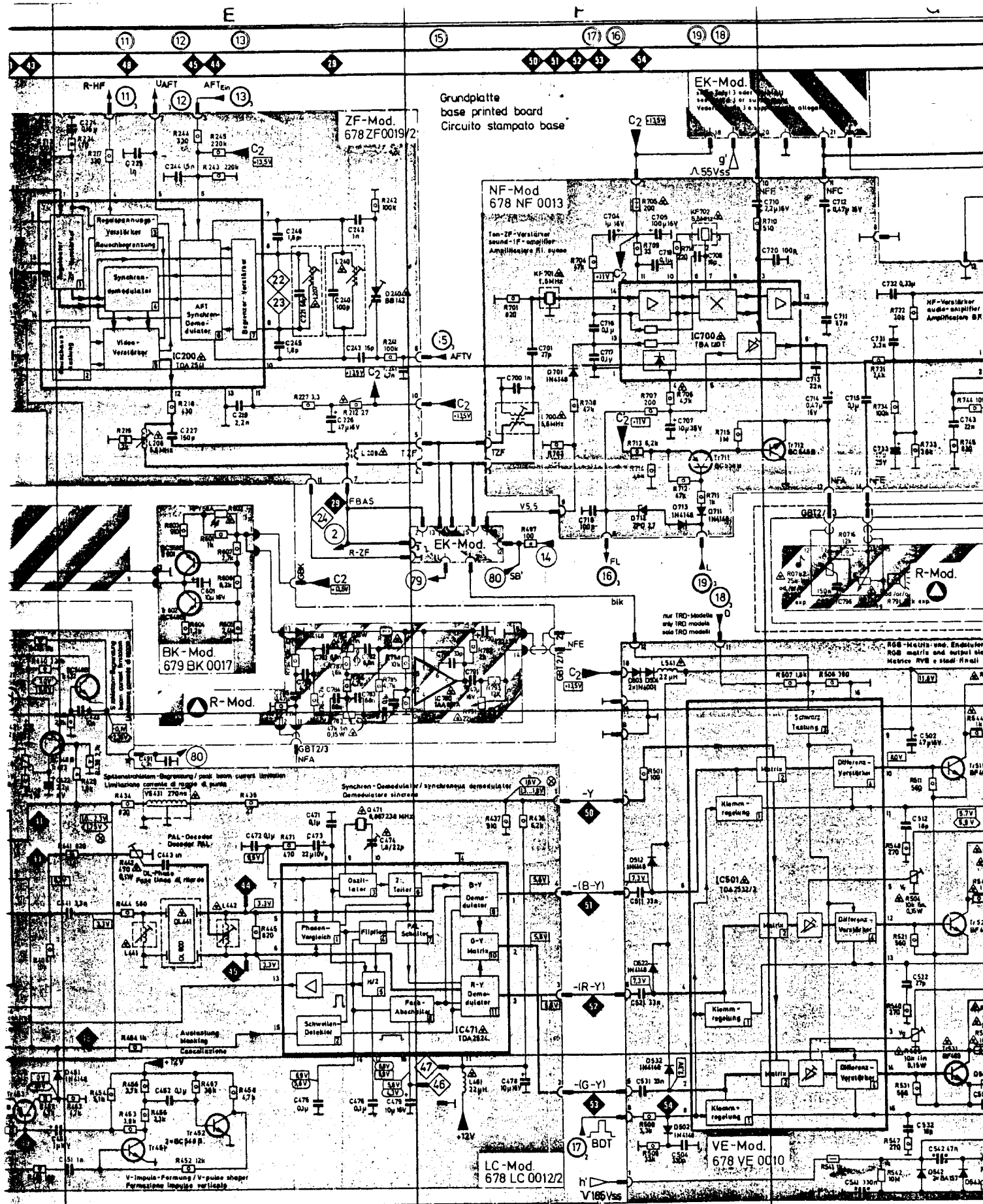
678 46 3027 - 12



le! Vista dalla parte saldature!  
Soggetto a leggere varianti!

E

F



Vor-/plugconnector



Leitung/free line  
legamento libero  
teripulationeschluss  
ring board connection  
raccordo alla piastra  
druckte Leitung/printed line  
legamento stampato

Spennungen bei Service-Schalter in Pos. "on" voltages at pos. "on" service switch

Tensione per interruttore service in pos. "si"

Spennungen mit Schwarz-Weiß-Signal gemessen voltages measured with black and white signal  
Tensione misurate con segnale bianco nero  
Spennungen mit Farbsignal gemessen voltages measured with chroma signal  
Tensione misurate con segnale a colori

Meßpunkt Oscillogramm waveform testpoint  
Punto di misura con oscillogramma  
Meßpunkt Testpoint  
Punto di misura  
Leitungen leitend auf lot 2 & 3 lines conduct to board 2 & 3  
I collegamenti conduttori alle tavole 2 & 3  
Tavol/board/tavola  
Leitungsverbindung (allgemein) line connection in general  
Collegamento in generale

Betriebsspannung operating voltage

Tensione di alimentazione

Horizontal-Impulsspannung horizontal pulse voltage  
Tensione ad impulsi orizzontali  
Achtung: Nur Original-Ersatzteile verwenden! Best.-Nr. siehe Ersatzteil-Liste  
Attention: please use original spare parts only! compare spare parts list for order number  
Attenzione: Sostituire soltanto con componenti originali! Per il n. d'ordine vedere lista componenti di ricambio

Kontrast Contrast  
Contrasto  
Farbstärke colour saturation  
Intensità di colore  
Lautstärke volume  
Volume  
Klang tone  
Tono  
Helligkeit brightness  
Luminosità  
Bässe bass  
Bassi

IC 200

1 - gain controlled IF amplifier/Amplificatore FI controllato  
2 - noise blanking/Eliminazione rumore  
3 - AGC-detector, noise limiter/Amplificatore tensione di controllo  
4 - synchronous demodulator/Demodulatore sincrono  
5 - video amplifier/Amplificatore video  
6 - AF-synchronous demodulator/Demodulatore sincrono per controllo automatico di frequenza  
7 - limiter-amplifier/Amplificatore limitatore

IC 501  
1 - clamping control/Regolazione ripristinazione livello  
2 - matrix/Matrice  
3 - display blanking/Cancelazione scritta  
4 - differential amplifier/Amplificatore differenziale

IC 701  
1 - phase detector/Can  
2 - gating pulse separator/Oscillatore/Oscillatore  
3 - flipflop/Multivibrator  
4 - H2-Detector  
5 - divider/Divisor  
6 - PAL-switch/Interruttore  
7 - colour killer/Color  
8 - B-Y demodulator  
9 - G-Y matrix/Matrice  
10 - R-Y demodulator  
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100 - R-Y demodulator

IC 701

1 - phase detector/Can  
2 - gating pulse separator/Oscillatore/Oscillatore  
3 - flipflop/Multivibrator  
4 - H2-Detector  
5 - divider/Divisor  
6 - PAL-switch/Interruttore  
7 - colour killer/Color  
8 - B-Y demodulator  
9 - G-Y matrix/Matrice  
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99 - R-Y demodulator  
100 - R-Y demodulator

IC 501

1 - clamping control/Regolazione ripristinazione livello  
2 - matrix/Matrice  
3 - display blanking/Cancelazione scritta  
4 - differential amplifier/Amplificatore differenziale

IC 701  
1 - phase detector/Can  
2 - gating pulse separator/Oscillatore/Oscillatore  
3 - flipflop/Multivibrator  
4 - H2-Detector  
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IC 701

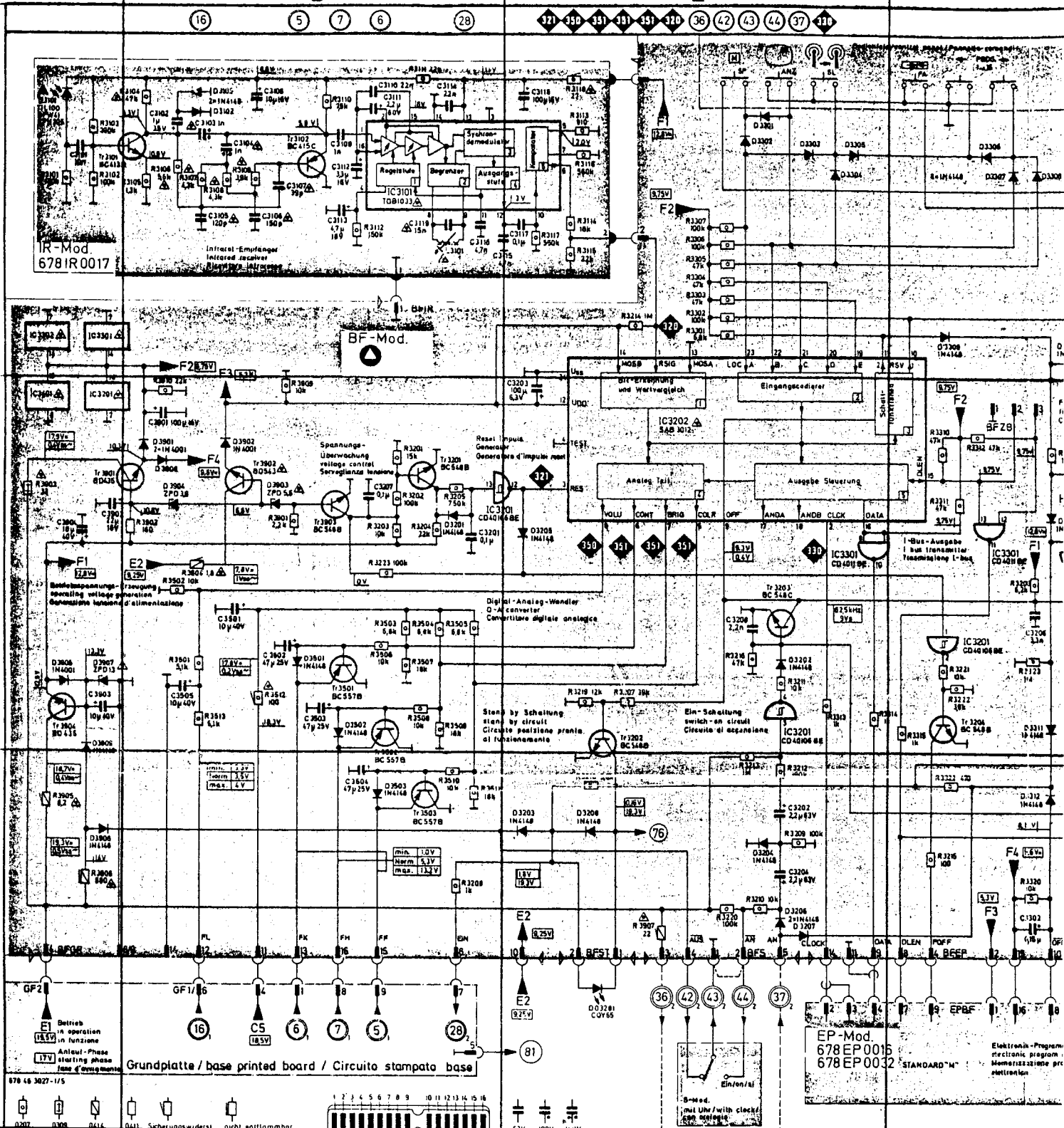
1 - phase detector/Can  
2 - gating pulse separator/Oscillatore/Oscillatore  
3 - flipflop/Multivibrator  
4 - H2-Detector  
5 - divider/Divisor  
6 - PAL-switch/Interruttore  
7 - colour killer/Color  
8 - B-Y demodulator  
9 - G-Y matrix/Matrice  
10 - R-Y demodulator  
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IC 501  
1 - clamping control/Regolazione ripristinazione livello  
2 - matrix/Matrice  
3 - display blanking/Cancelazione scritta  
4 - differential amplifier/Amplificatore differenziale

IC 701  
1 - phase detector/Can  
2 - gating pulse separator/Oscillatore/Oscillatore  
3 - flipflop/Multivibrator  
4 - H2-Detector  
5 - divider/Divisor  
6 - PAL-switch/Interruttore  
7 - colour killer/Color  
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E



## Programmwahl-Bedienteil Program selection and remote control

### IC 3401

- 1 - 14 stage ripple counter
- 2 - Contatore di oscillazioni a 14 stadi

### IC 3101

- 1 - control stage / stadio di regolazione
- 2 - limiter / limitatore
- 3 - synchronous demodulator / demodulatore sincrono
- 4 - output stage / stadio d'uscita

### IC 3202

- 1 - bit identification and word comparison
- 2 - bit identification e comparazione di parola
- 3 - input code / Codificatore d'entrata
- 4 - switching function / Funzione di commutazione
- 5 - analog section / Parte analogica
- 6 - output control / Pilotaggio dati d'uscita



Bestell-Nr. siehe Bestückungsplan  
For ident. no. components scheme at p.c.  
If n. di ordinazione si trova presso il piano di montaggio

⚠ **Attenzione:** Non Original-Ersatzteile verwenden!  
Do not use original spare parts only!

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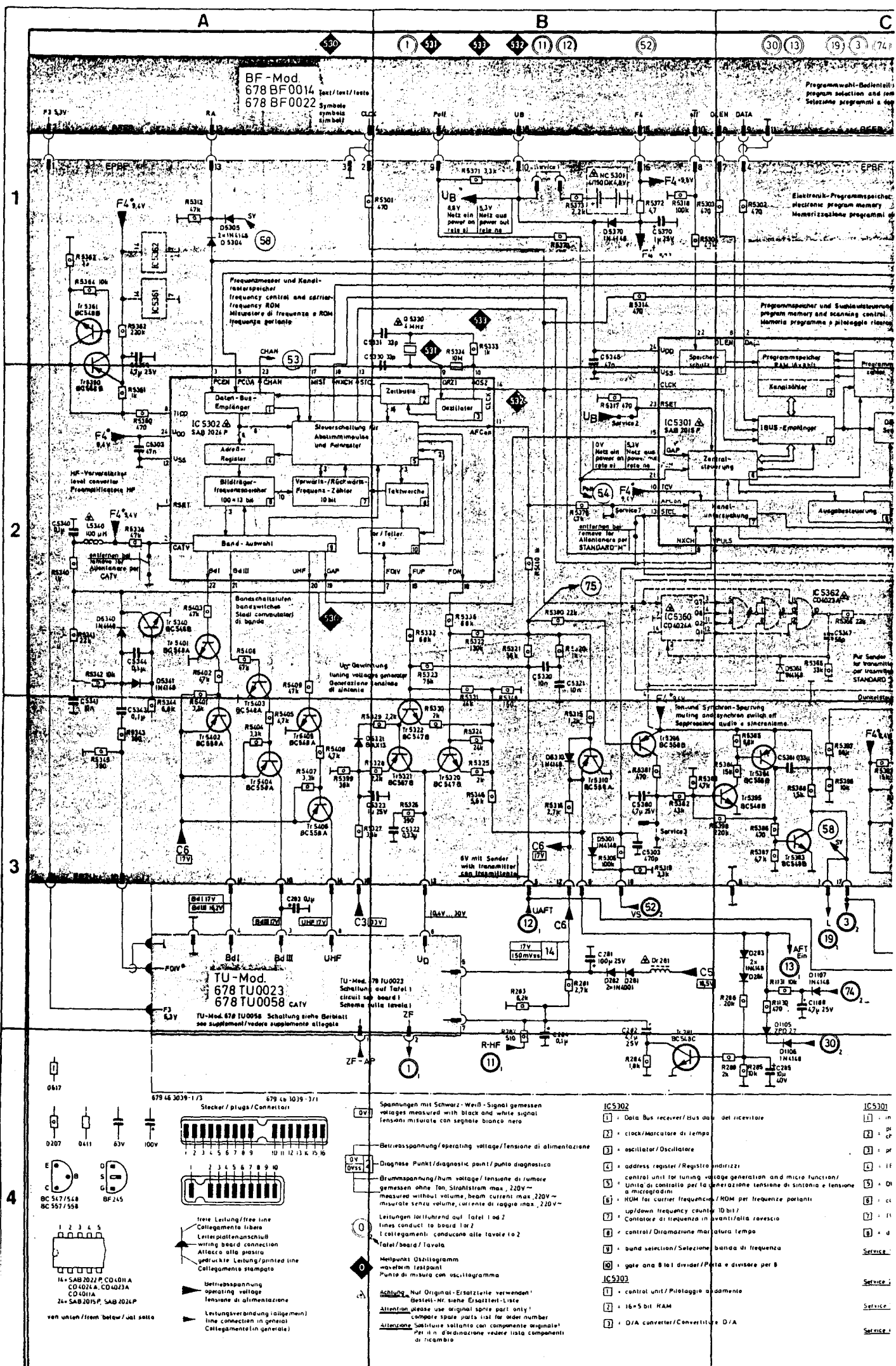
⚠ **Attenzione:** Non Original-Ersatzteile verwenden!  
Do not use original spare parts only!

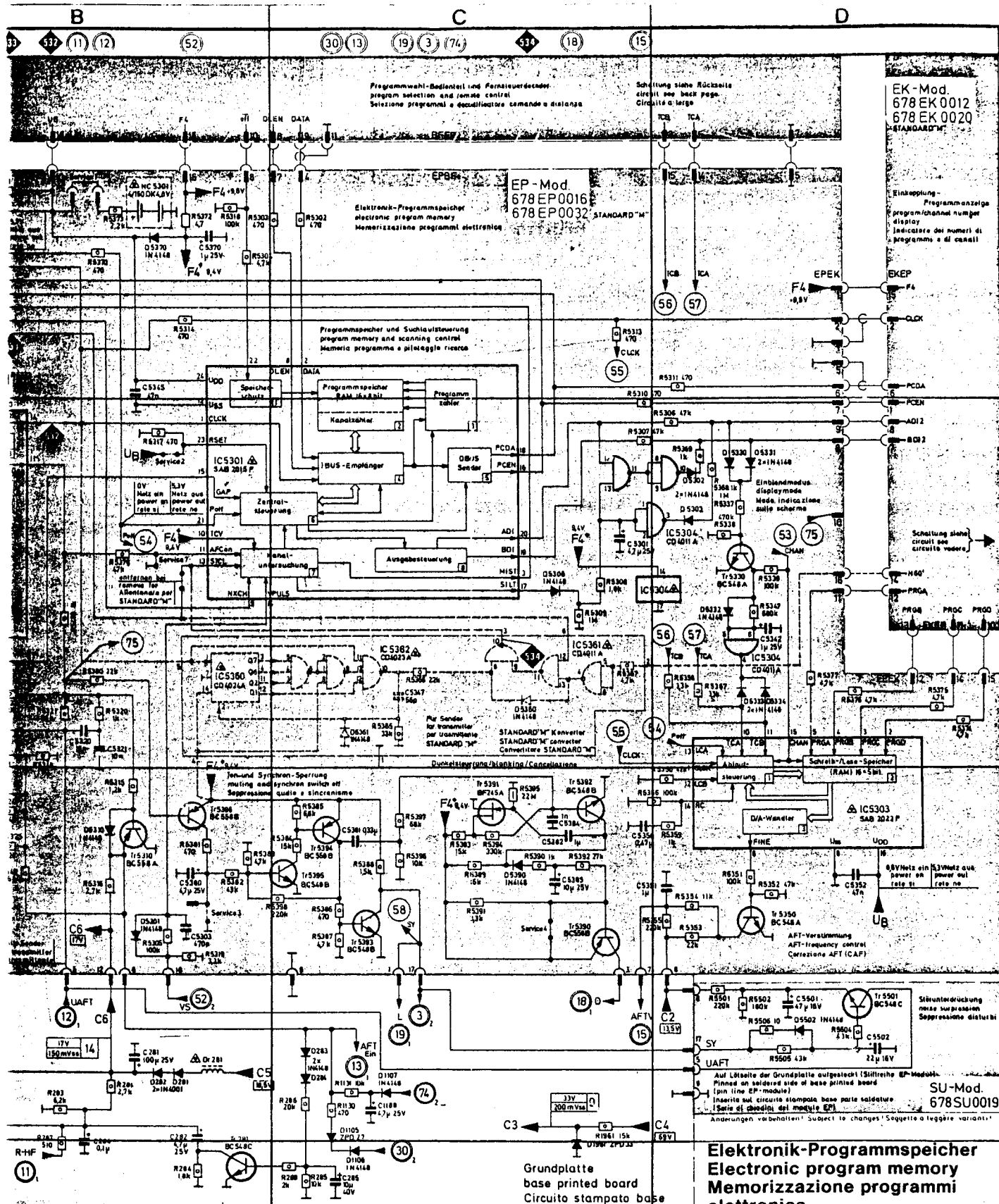
⚠ **Attenzione:** Non Original-Ersatzteile verwenden!  
Do not use original spare parts only!

⚠ **Attenzione:** Non Original-Ersatzteile verwenden!  
Do not use original spare parts only!









11 - Signal gemessen  
x and white signal  
te bianco nero

Voltage/Tensione di alimentazione

point/punto diagnostica

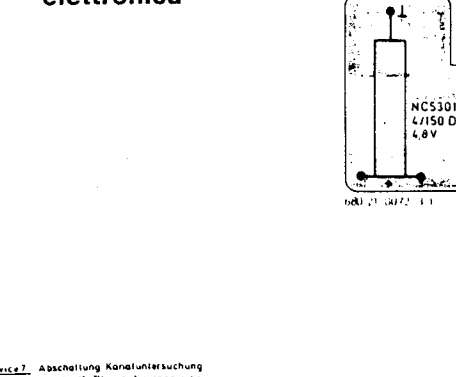
ge/tensione di rumore  
from max. 220V ~  
ram current max. 220V ~  
erie di raggi max. 220V ~  
uati 100.2  
ile livello te 2

gramma

teile verwendet:  
ratteil-Liste  
 spare part only!  
ts list for order number  
 con componenti originali  
 one vedere lista componenti

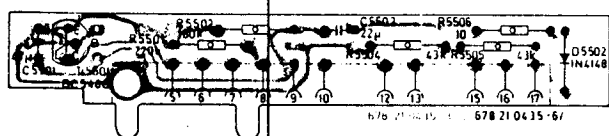
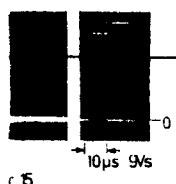
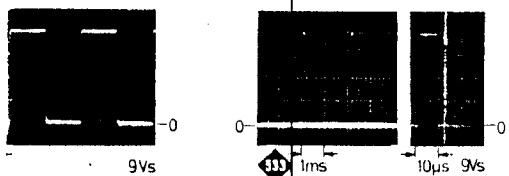
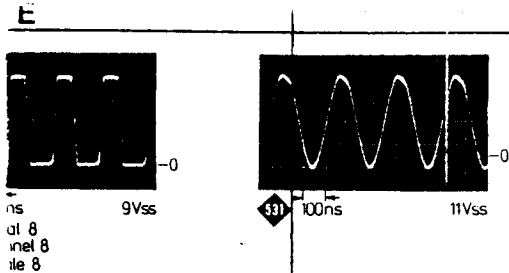
- IC5302**
- 1 Data Bus receiver/Bus dati del ricevitore
  - 2 clock/Marcatore di tempo
  - 3 oscilator/Oscillatore
  - 4 address register/Registro indirizzi
  - 5 control unit for tuning voltage generation and mic function/Unità di controllo per la generazione tensione di sintonia e tensione a microgradini
  - 6 ROM for carrier frequency/ROM per frequenze portanti
  - 7 Up/down frequency counter 10 bit/Contatore di frequenza in avanti/indietro a 10 bit
  - 8 central/Dramazione mai aiuta tempo
  - 9 band selection/Selezione banda di frequenza
  - 10 gate and bit divider/Porta e divisore per 8
- IC5303**
- 1 control unit/Pilotaggio a distanza
  - 2 16-5 bit RAM
  - 3 -A converter/Convertitore D/A

- IC5301**
- 1 memory protection/Protezione memoria
  - 2 program memory/Memoria programma
  - 3 channel counter/Contatore dei canali
  - 4 program counter/Contatore programmi
  - 5 IBUS receiver/Ricevitore IBUS
  - 6 IBUS transmitter/Trasmettitore IBUS
  - 7 central/Pilotaggio centrale
  - 8 TV signal recognizing/Indagine canale
  - 9 display control/Pilotaggio indicazione sullo schermo
- Service 1** Bei Reparaturarbeiten am Modul Brücke ziehen  
for repair remove bridge on module  
lavori di riparazione togliere il ponticello sul modulo
- Service 2** Reset nach Batterie-Wechsel  
reset after battery change  
Neset dopo il cambio batteria
- Service 3** Abschalten Ton u. Synchron-Sperrung  
switch off tuning and synchron suppression  
Disinsezione soppressione audio e sincronismo
- Service 4** Abschaltung Dunkelsteuerung  
blanking off  
Disinsezione cancellazione
- Service 7** Abschaltung Kanaluntersuchung  
switch off TV signal recognizing  
Disinsezione indagine canale

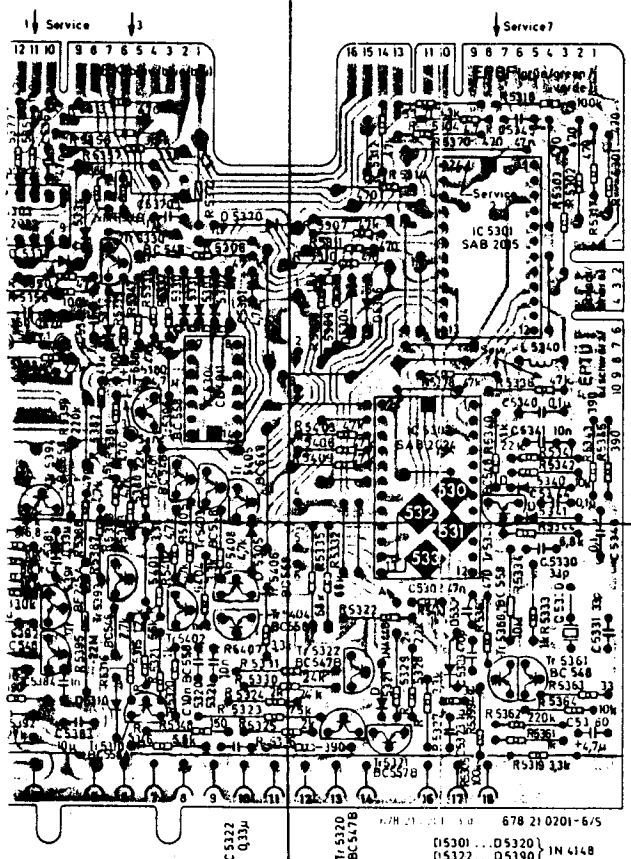






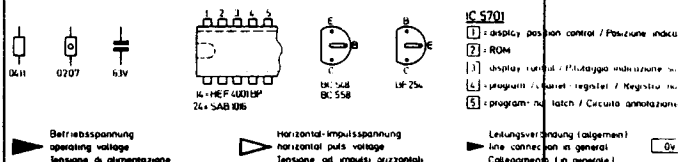
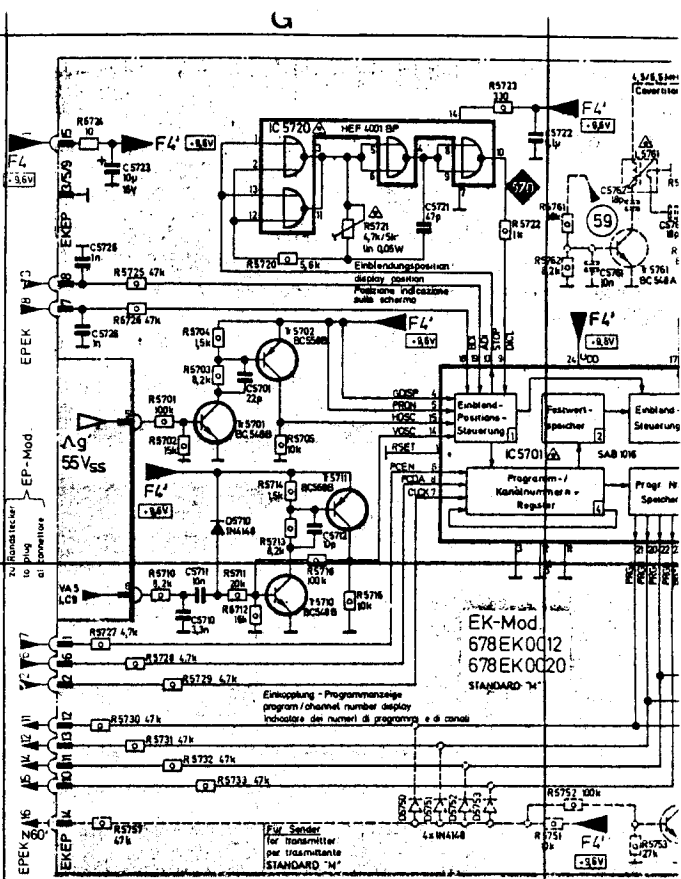


**SU-Mod.**  
678 SU 0019

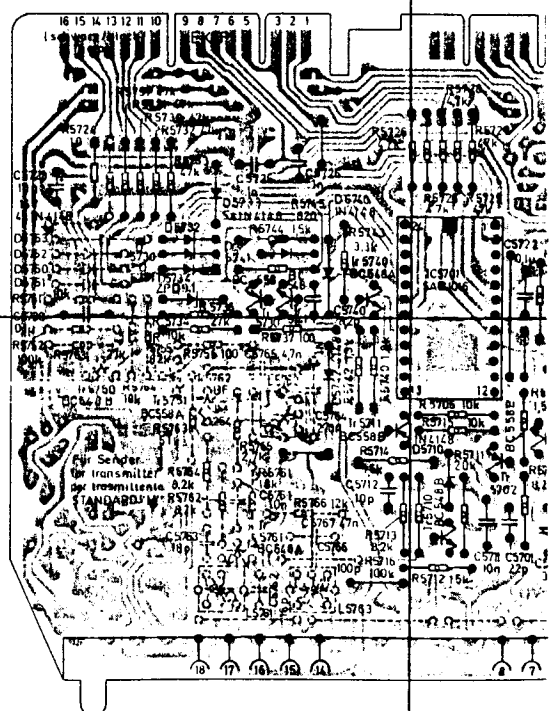


nd.  
P 0016  
P 0032 Standard „M“

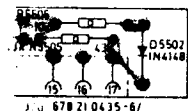
gelötete Seite! View on to soldered side! Vista dalla parte saldatore!  
jen vorbehalten! Subject to changes! Soggetto a leggere varianti!



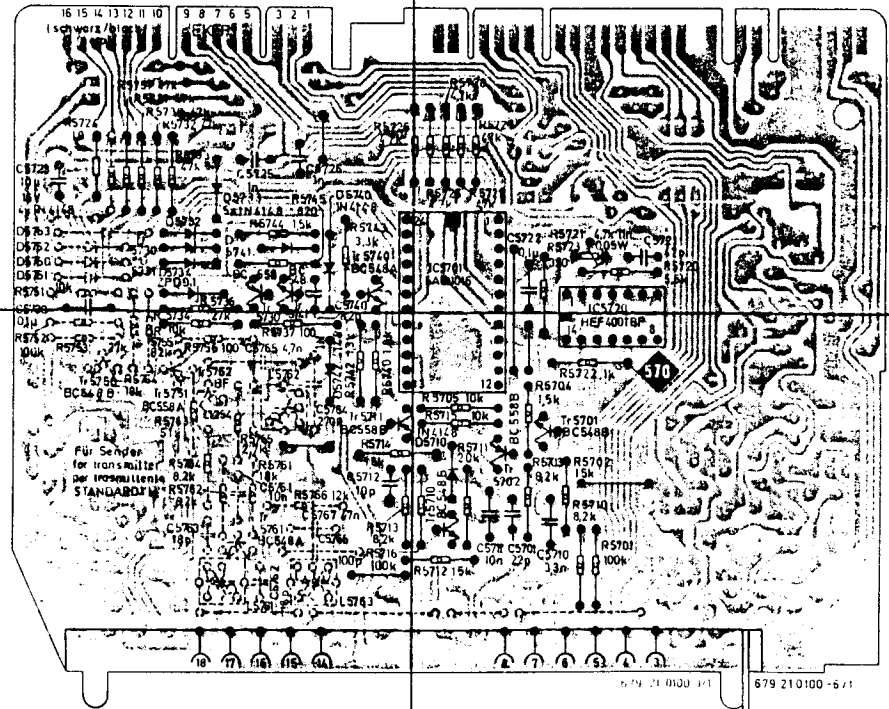
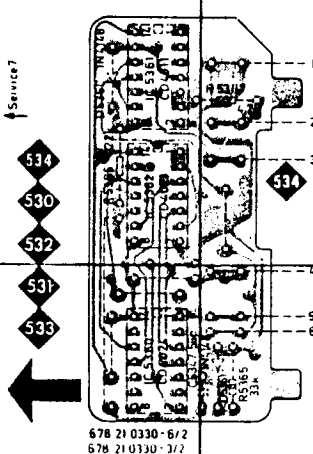
**Einkopplung - Programmanzeige**  
**Program/channel number display**  
**Indicatore dei numeri di programmi e di canali**



**EK-Mod.**  
678 EK 0012/2  
678 EK 0020/2 Standard „M“

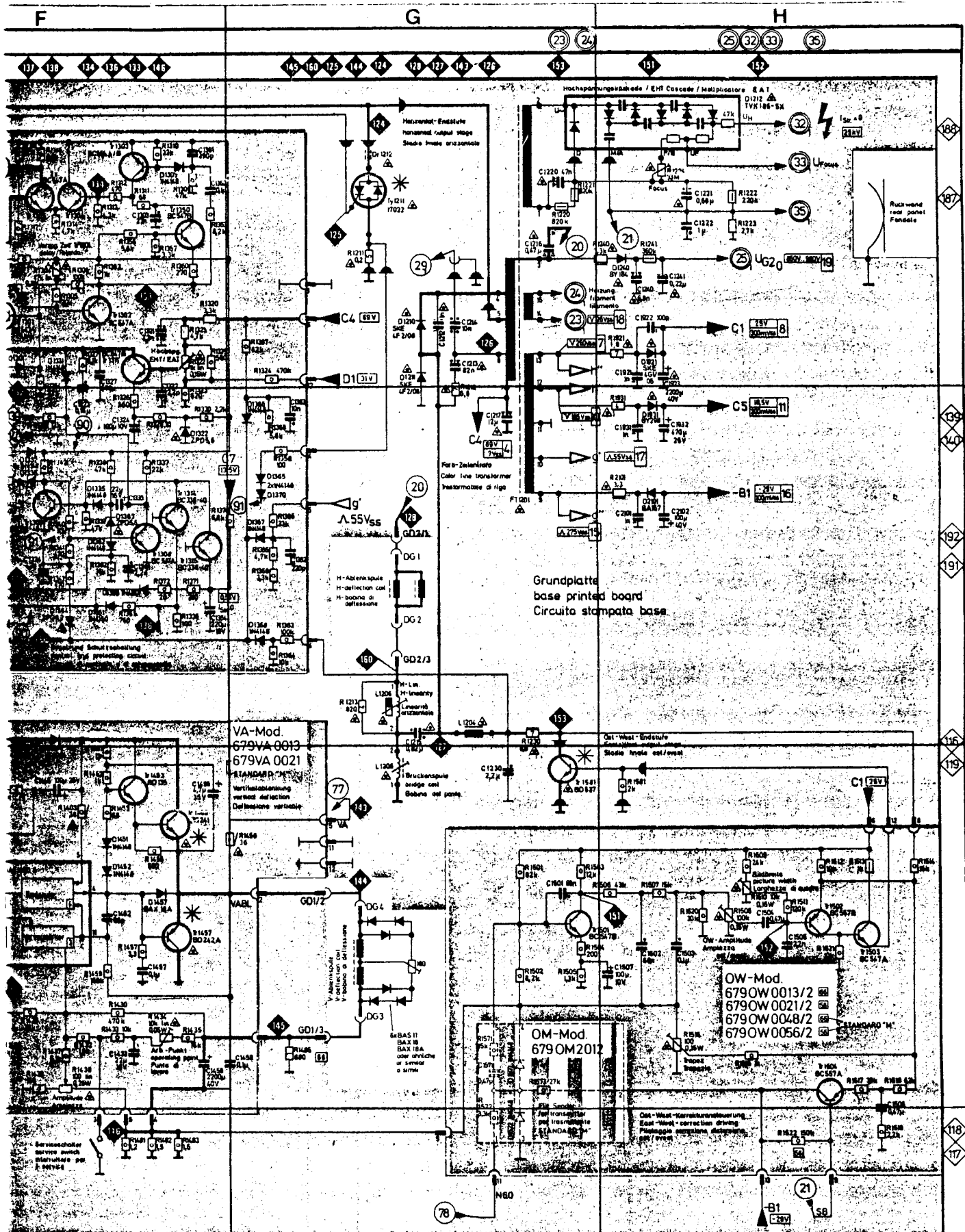


Nel momento dell'indicazione  
appearing on the screen only during indication  
Solo durante l'indicazione sullo schermo



EK-Mod.  
678 EK 0012/2  
678 EK 0020/2 Standard „M“

side! Vista dalla parte saldatore!  
si! Soggetto a leggere varianti!



- 1) V-type output / Uscite sincronizzazione verticale  
2) burst-gating and line-blanking pulse / Impulsi di porta burst / impulsi cancellazione di  
3) phase discriminator / Discriminatore di fase  
4) phase shifter / Sfasatore  
5) pulse duration switch / Commutazione durata impulsi  
6) output stage / Stadio d'uscita  
7) sync separator stage / Stadio di separazione sincronizzazione verticale  
8) output pulse generator / Generatore impulsi trigger  
9) switch / Interruttore  
10) gate S-V, gate S-N-G / Porta sync / vert  
11) gate mode switch / Commutatore  
12) sync gating pulse generator / Generatore impulsi di porta  
13) sync separator stage / Stadio di separazione impulsi di sincronismo  
14) noise separator / Soppressione disturbi  
15) coincidence detector / Rivelatore di coincidenza  
16) time constant switch / Commutazione costante di tempo  
17) current voltage limiter / Limitazione tensione  
18) oscillator / Oscillatore
- 19) H-Ablenkung / H-Deflection  
20) V-Ablenkung / V-Deflection  
21) Farb-Zeilenspanner / Color line transformer  
22) Stromversorgung / Power supply  
23) Synchronisation / Synchronization  
24) Sonstige Bauteile / Miscellaneous components
- 1) H-Ablenkung / H-Deflection  
2) V-Ablenkung / V-Deflection  
3) Farb-Zeilenspanner / Color line transformer  
4) Stromversorgung / Power supply  
5) Synchronisation / Synchronization  
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- 1) H-Ablenkung / H-Deflection  
2) V-Ablenkung / V-Deflection  
3) Farb-Zeilenspanner / Color line transformer  
4) Stromversorgung / Power supply  
5) Synchronisation / Synchronization  
6) Sonstige Bauteile / Miscellaneous components

Änderungen vorbehalten! Subject is changes! Soggetto a leggere variati!



COLOR 6964 6983\*  
6984\* 6998\*  
7064

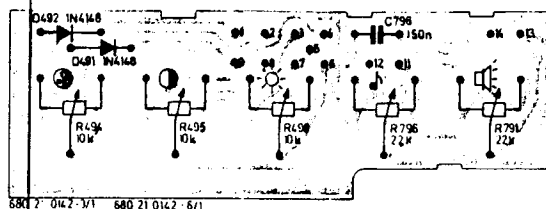
\* auch als Modelle A/E/N/T  
also models / anche modelli  
Chassis 679 G-0038

Ablenkteile und Stromversorgung  
Deflection and power circuit  
Deflessione ed alimentazione

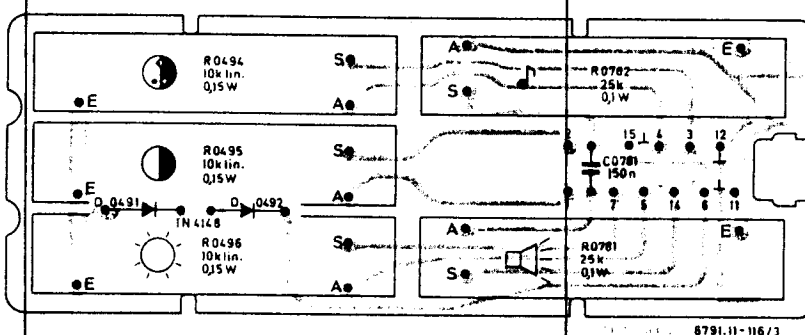
Tafel 2  
Board 2  
Tavola 2



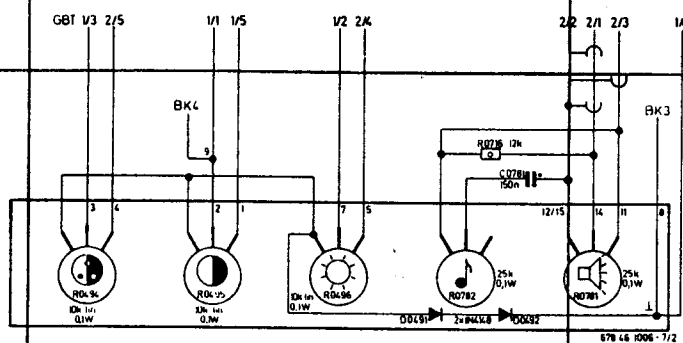
## H



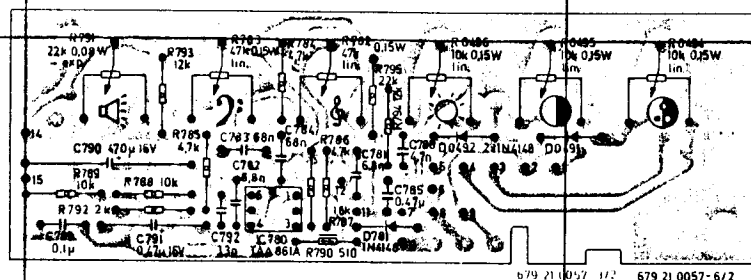
**R-Mod.**  
680 R- 0048 (7054, 7062, 7064, 7074)



**R-Mod.**  
678 R-0010 (6981)



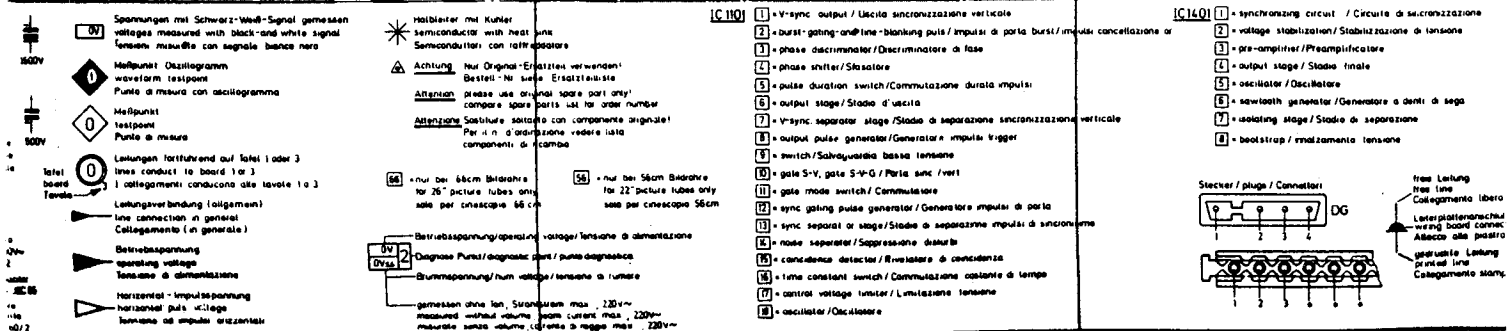
**R-Mod.**  
**679 R-0022** (6932, 6942, 6962, 6964, 6982, 6983,  
 6984, 7085, 7087, CTX 2200)  
**678 R-0045** (6974, CTX 2250)  
**680 R-0013** (7086)



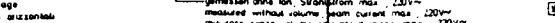
**R-Mod.**  
679 R-0014 (6992, 6994, 6996, 6997, 6998)

Sicht auf gelötete Seite! View on to soldered side! Vista dalla parte saldature!  
Änderungen vorbehalten! Subject to changes! Soggetto a leggere varianti!



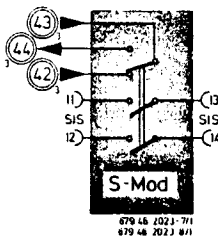




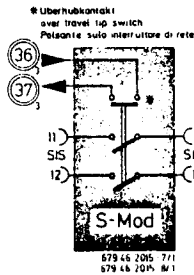


Modell Modello	S-Mod.	SI-Mod.	SV-Mod.
6964	678 S-0024	678 SI 0020	678 SV 0038
6983	678 S-0016	678 SI 0012	678 SV 0038
6984	678 S-0024	678 SI 0020	678 SV 0038
6994	678 S-0024	679 SI 0024	678 SV 0038
6998	679 S-0036	679 SI 0024	679 SV 0015
7064	680 S-0027	678 SI 0020	678 SV 0038
CTX 2200	678 S-0024	678 SI 0020	678 SV 0038

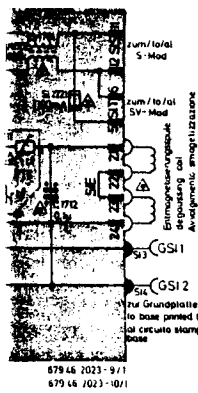
679 46 2023-15/2



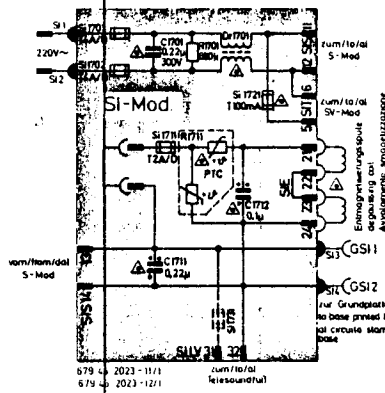
678 S-0024  
679 S-0036  
680 S-0027



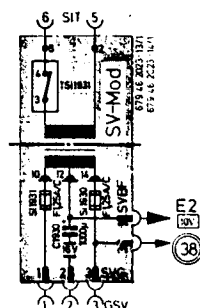
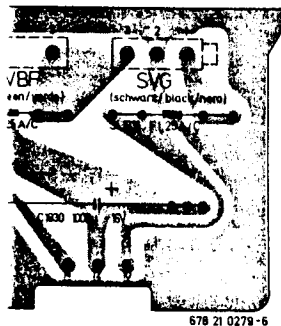
678 S-0016



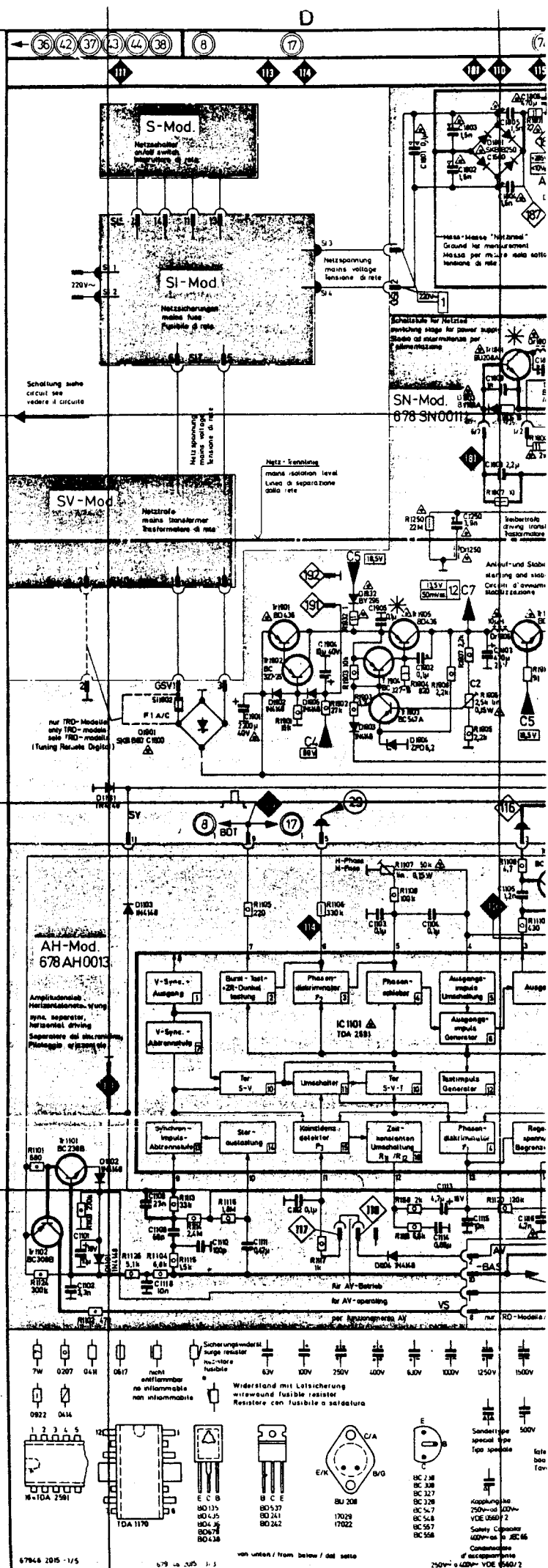
20



679 SI 0024



678 SV 0038  
679 SV 0015



1

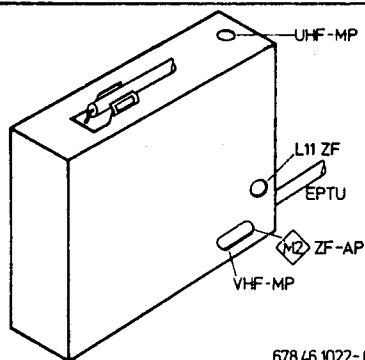
2

3

Tuner

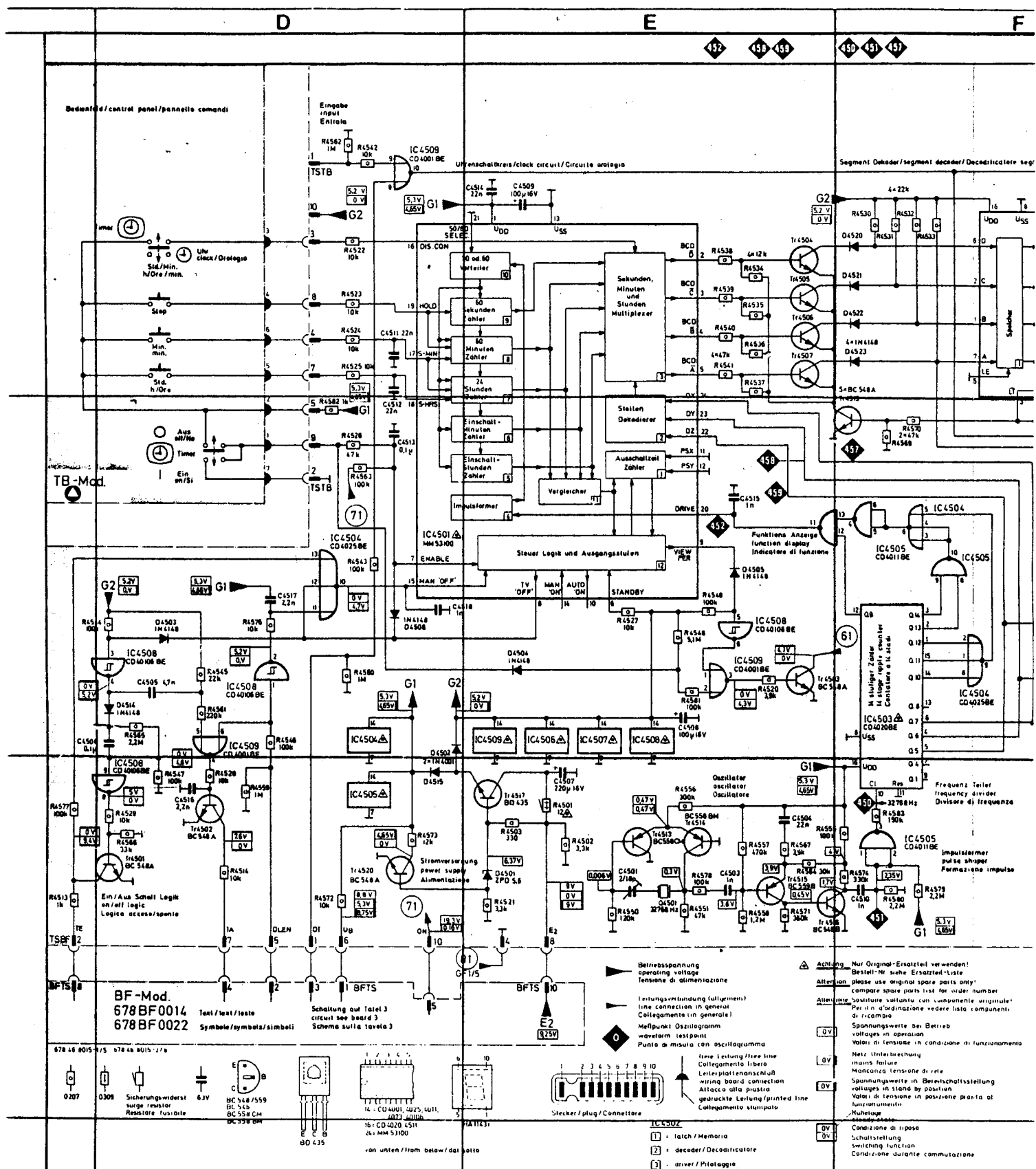
Zusammenschaltung siehe Programmwahl-Electronic (Tafel 3)  
 Connecting circuitry see electronic program-selection (board 3)  
 Collegamento al resto del circuito v. selezione programmi (tavola 3)  
 Per modelli con tuner per l'Italia vedere l'apposito schema allegato.

4



Anschlußbild für Tuner  
 Connection diagram for tuner  
 Schizzo per l'attacco al tuner





B

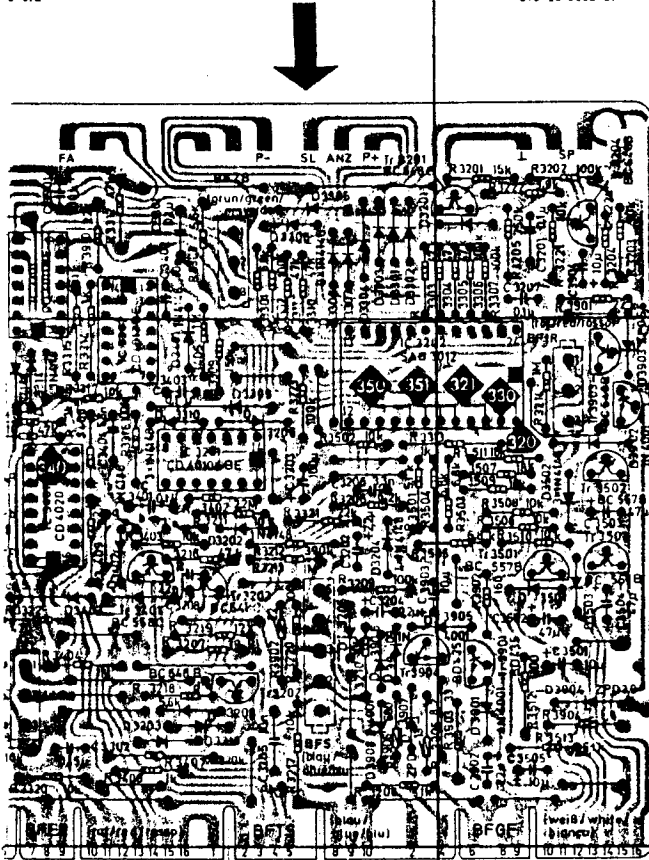
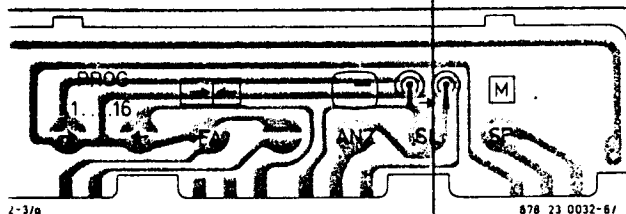
C

D

chrägstrich) sind voll austauschbar  
en nur für unterschiedliche

in the left of the slant) are fully  
slant refer to differences in

ella linea di separazione) sono  
a linea di separazione indicano



Mod.	mit/with/con Text/testo	mit/with/con Symbol/simboli
678 BF 0014	678 BF 0022 (6964, 6983, 6984, 6994, 6998, CTX 2200)	
680 BF 0017	680 BF 0025 (7064)	

