

## Farbfernsehgeräte Color TV Televisore a colori

FS 337 V 4

Kurzfassung der Serviceschrift für Grundchassis  
Service manual for basis chassis  
Istruzioni d'assistenza il telaio

# CS 9501

P 99 A 1



Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Ident-Nr. 53 10 54, sowie zusätzlich eventuell abweichende, landesspezifische Vorschriften!

The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, Ident-no. 53 10 54, as well as the respective national deviations.

Valgono le prescrizioni e note di sicurezza secondo il Manuale di Servizio "Norme di sicurezza" Nr. di identificazione 53 10 54, così pure le eventuali disposizioni specifiche vigenti nel singolo stato.

Weitere chassisbezogene Informationen entnehmen Sie bitte dem zugehörigen Service Manual.

For more detailed information on the chassis, please see the appropriate Service Manual.

Ulteriori informazioni a seconda della chassis Le rilevi per favore dal relativo Manuale di Servizio.

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# Abgleich

Alle nicht beschriebenen Einstellelemente sind werkseitig abgeglichen und dürfen im Service-Fall nicht verstellt werden.

## 1. Chassisplatte – Tuner / ZF-Verstärker

Meßgeräte: Oszilloskop mit Tastkopf 10:1, Voltmeter

Servicearbeiten nach Austausch von

- IC847: Abgleich Nr. 1
- Tuner: Abgleich Nr. 1
- ZF-Verstärker: Abgleich Nr. 1

Nach sonstigen Arbeiten am ZF-Verstärker: Abgleich Nr. 1

Abgleich	Vorbereitung	Abgleichvorgang
1. Tuner-AGC	<p>Normtestbild auf hohen UHF-Kanal legen und auf Programmplatz 1 abspeichern; dabei muß die HF mindestens 1,5mV (64dBµV) betragen. Gerät mit Netzschalter ausschalten. Servicemenü aufrufen (Gerät einschalten, dabei Taste "1" mindestens 3 Sekunden gedrückt halten). Mit <math>\checkmark</math> die Zeile "AGC ALIGN" anwählen.</p>	<p>Mit den Tasten &lt; und &gt; die Spannung am Tuner Kontakt 2 auf 3,3V einstellen.</p>

## 1.1 Chassisplatte – RGB / PAL

Meßgeräte: Oszilloskop, Tastkopf 10:1

Servicearbeiten nach Austausch von IC130, R119, F118:

Abgleich Nr. 1, 2

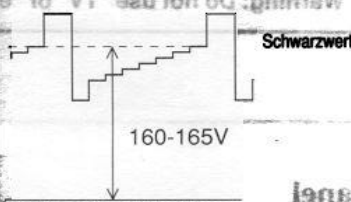
Abgleich	Vorbereitung	Abgleichvorgang
1. Blauphase	<p>PAL-Testbild mit Unbuntfeld Blau einspeisen - im Testbild muß ein blaues Farbdifferenzsignal mit von Zeile zu Zeile alternierender Polarität vorhanden sein. Oszilloskop mit Tastkopf an IC130-(7) anschließen. (10µs/cm einstellen) <b>Achtung: nicht auf Stellung TV oder extern triggern</b></p>	<p>Mit dem Regler R119 (BP) die zeilenweise alternierenden Amplituden des blauen Unbuntfeldes zur Deckung bringen.</p>
2. Laufzeit	<p>PAL-Farbbalkentestbild einspeisen Oszilloskop mit Tastkopf an IC130-(7) anschließen. (10µs/cm einstellen) <b>Achtung: nicht auf Stellung TV oder extern triggern</b></p>	<p>Mit der Laufzeitpule F118 (LZ) die Doppelbilder des Blausignals zur Deckung bringen.</p>

## 2. Bildrohrplatte

Meßgeräte: Oszilloskop mit Tastkopf 10:1

Servicearbeiten nach Austausch der Bildröhre, der Bildrohrplatte bzw. Reparatur der Bildrohrplatte:

Abgleich Nr. 1, 2

Abgleich	Vorbereitung	Abgleichvorgang
1. Weißabgleich	FuBK-Testbild einspeisen. Farbkontrast (⊕) Minimum. Kontrast (⊖) Maximum. Bildschirmhelligkeit (☉) so einstellen, daß die Abstufung vom dunkelsten Graubalken zu Schwarz gerade noch sichtbar ist.	Regler VG und VB so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.
2. Schirmgitterspannung	Graubalken-Testbild einspeisen. Bildschirmhelligkeit so einstellen, daß die Abstufung vom dunkelsten Graubalken zu schwarz gerade noch sichtbar ist. Kontrast (⊖) Minimum. Von den Meßpunkten R, G, B den Meßpunkt mit dem höchsten Schwarzwertpegel ermitteln und an das Oszilloskop anschließen.	Mit dem Einstellregler SG den Schwarzwert an dem Meßpunkt mit dem höchsten Schwarzwert auf 160...165V abgleichen. 

GB

## Alignment

All adjustment controls not mentioned in this description are adjusted during production and must not be re-adjusted in the case of repairs.

### 1. Chassis board – Tuner / IF-amplifier

Measuring instruments: Oscilloscope, 10:1 test probe, voltmeter

Service works after replacement of:

- IC847: Alignment no. 1
- Tuner: Alignment no. 1
- IF Amplifier: Alignment no. 1

After all other actions on the IF Amplifier: Alignment no. 1

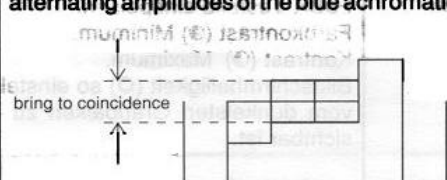
Alignment	Preparations	Alignment Process
1. Tuner-AGC	Feed in a standard test pattern at a channel in the upper range of the UHF band and store it at programme position 1; the RF should be 1.5mV (64dBµV) at least. Switch the TV off with powerswitch Call up the Service Menu (press and hold the button "i" for at least 3 seconds while switching the TV on). With √ select the menu item "AGC ALIGN".	With the buttons < and > set the voltage at Tuner contact 2 to 3.3V.

## 1.1 Chassis board – RGB / PAL

Measuring instruments: Oscilloscope, 10:1 test probe

Service works after replacement of IC130, R119, F118:

Alignment no. 1, 2

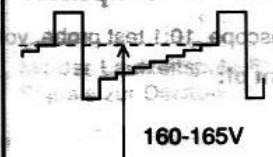
Alignment	Preparations	Alignment Process
1. Blue phase	<p>Feed in a PAL test pattern with achromatic aera, blue - the test pattern must contain a blue colour difference signal with the polarity alternating line-by-line (<math>\pm U</math>).</p> <p>Connect the oscilloscope with test probe to IC130-(7). (10<math>\mu</math>s/cm setting)</p> <p><b>Warning: Do not use "TV" or "external" for triggering</b></p>	<p>Adjust the control <b>R119 (BP)</b> so that the line-by-line alternating amplitudes of the blue achromatic aera coincide.</p> 
2. Delay time	<p>Feed in a PAL colour bar test pattern.</p> <p>Connect the oscilloscope with the test probe to IC130-(7). (10<math>\mu</math>s/cm setting)</p> <p><b>Warning: Do not use "TV" or "external" for triggering</b></p>	<p>Adjust the delay time coil <b>F118 (LZ)</b> so that the double pictures of the B-signal coincide.</p>

## 2. Picture tube panel

Measuring instruments: Oscilloscope, 10:1 test probe

Service works after replacement of the picture tube, picture tube panel or after repair of the picture tube panel:

Abgleich Nr. 1, 2

Alignment	Preparations	Alignment Process
1. White balance	<p>Feed in a FuBK test pattern.</p> <p>Set the colour contrast (⊕) to minimum.</p> <p>Set the contrast (⊙) to maximum.</p> <p>Adjust the screen brightness (⊙) so that the gradation from the darkest grey scale value to black is just still visible.</p>	<p>Set the controls <b>VG</b> and <b>VB</b> so that no discolouration is visible in the grey scale.</p>
2. Screen grid voltage	<p>Feed in a grey scale test pattern.</p> <p>Adjust the screen brightness so that the gradation from the darkest grey scale value to black is just still visible.</p> <p>Set the contrast (⊙) to minimum.</p> <p>Measure test points R, G, B to determine the test point with the highest black level and connect this point to the oscilloscope.</p>	<p>With the control <b>SG</b> set the black level of the test point with the highest black level to <b>160...165V</b>.</p> 

# Taratura

Tutti i componenti non descritti, sono stati tarati in fabbrica e non devono essere regolati in caso di servizio.

## 1. Telaio - Tuner/Amplificatore FI

Strumenti: Oscilloscopio, Sonda 10:1, Voltmetro

Operazioni di servizio dopo la sostituzione di:

- IC847, Taratura N. 1
- Tuner, Taratura N. 1
- Amplificatore FI, Taratura N. 1

Topo eventuali interventi nell' amplificatore FI è necessario eseguire le Taratura: N. 1

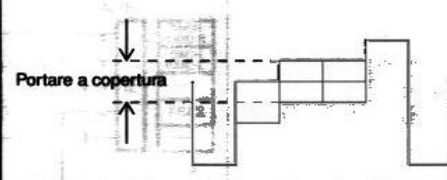
Taratura	Preparazione	Procedimento
1. Tuner AGC	<p>Applicare un monoscopio su un canale alto UHF nel programma 1. Livello AF 1,5mV (64dBμV).                      Spegner l'apparecchio con l'interruttore di rete.                      Durante l'accensione tenere premuto il tasto "i" al minimo 3 sec.                      Con <math>\checkmark</math> scegliere la riga "AGC ALIGN".</p>	<p>Con i tasti &lt; e &gt; regolare la tensione al collegamento 2 al tuner a 3,3V.</p>

### 1.1 Telaio - RGB / PAL

Strumenti: Oscilloscopio, Sonda 10:1

Operazioni dopo la sostituzione di IC130, R119, F118:

Taratura N. 1, 2.

Taratura	Preparazione	Procedimento
1. Fase del Blu	<p>Applicare un monoscopio PAL con campo acromatico blu. Nel monoscopio deve essere disponibile un segnale blu differenza colore con polarità alternata riga per riga. Collegare l'oscilloscopio con sonda al IC130-(7). (regolare 10μs/cm).  <b>Attenzione:</b> non triggerare su TV o esterno.</p>	<p>Con R119 portare a copertura le ampiezze in alternanza riga per riga del campo acromatico del Blu.</p> 
2. Tempo di transito	<p>Applicare un monoscopio a colori PAL. Collegare l'oscilloscopio al IC130-(7). (10μs/cm).  <b>Attenzione:</b> non triggerare su TV o esterna.</p>	<p>Con F118 (LZ) portare a copertura lo sdoppiamento del segnale B.</p>

## 2. Piastra cinescopio

Strumenti: Oscilloscopio, Sonda 10:1

Operazioni dopo la sostituzione del cinescopio, della piastra cinescopio rispettiv. dopo la riparazione della stessa.

Taratura N. 1, 2.

Taratura	Preparazione	Procedimento
1. Taratura del bianco	<p>Applicare un monoscopio a norma                      Regolare contrasto colore al minimo                      Regolare contrasto B/N al massimo                      Regolare la luminosità in modo che siano appena visibili le gradazioni di grigio.</p>	<p>Regolare VG e VB (sulla piastra cinescopio) in modo da non vedere colorazioni nei grigi.</p>
2. Tensione di griglia schermo	<p>Applicare un monoscopio a barre grige.                      Regolare la luminosità finchè è appena visibile la gradazione dei grigi.                      Regolare il contrasto B/N al minimo.                      Tra i punti di misura RGB individuare quello a maggior livello del nero.                      Oscilloscopio punti di misura RGB.</p>	<p>Tarare con SG (piastra cinescopio) il valore del nero più alto individuato a circa 160...165V.</p>  <p>The image shows an oscilloscope trace of a staircase waveform. The waveform starts at a low level and increases in steps. The highest step is labeled 'Valore nero' and '160-165V'. The trace is shown on a grid.</p>

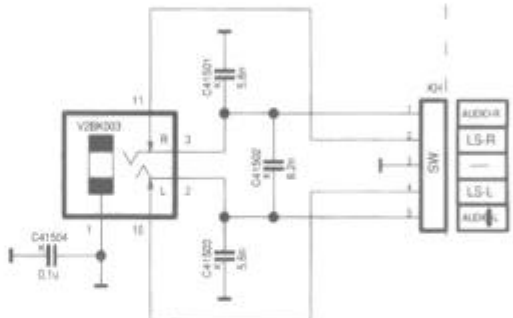
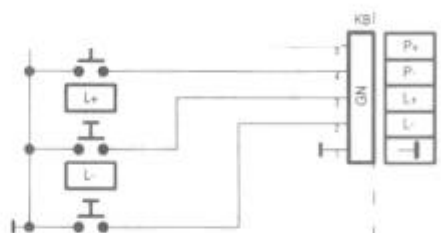
# Bedieneinheit / Control Unit / Unita di Comando

## NETZSCHALTERPLATTE 29305-165.50

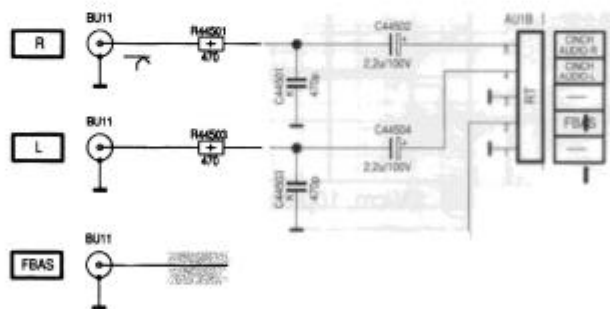
MAINS SWITCH BOARD  
C.I. INTERR. SECTEUR  
PIASTRA INTERR. DI RETE  
PLACA INTERRUPTOR REC

## BEDIENEINHEIT 29501-082.04

CONTROL UNIT  
UNITÉ DE COMMANDE  
UNITÀ DI COMANDO  
UNIDAD DE MANDO



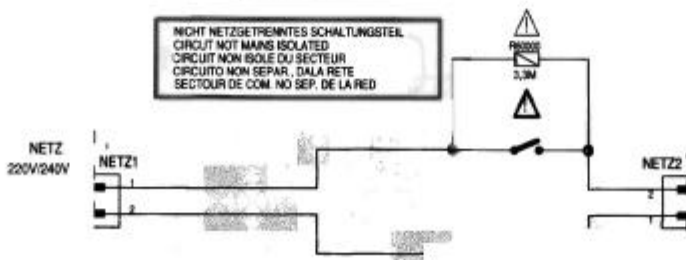
ZUM CHASSIS  
TO CHASSIS  
VERS CHASSIS  
ALLO CHASSIS  
AL CHASSIS



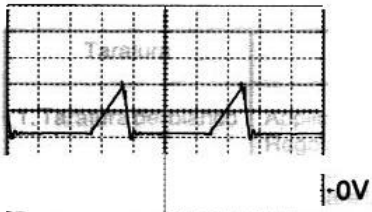
nur bei 29305-165.50

nur bei 29501-082.04

NICHT NETZGETRENNTES SCHALTUNGSTEIL  
CIRCUIT NOT MAINS ISOLATED  
CIRCUIT NON ISOLE DU SECTEUR  
CIRCUITO NON SEPAR. DALLA RETE  
SECTOR DE COM. NO SEP. DE LA RED



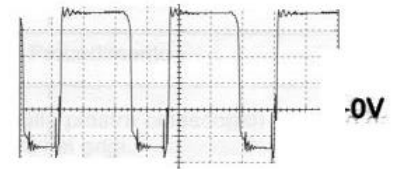
# Oszillogramme - Chassis / Oscillograms Chassis / Oscillogrammi telaio



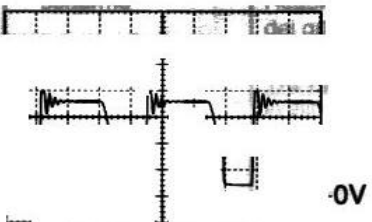
1 0,5V/cm, 2µs/cm



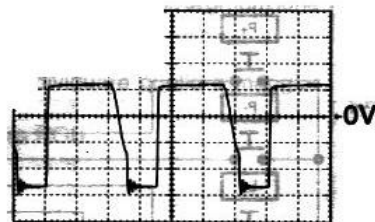
2 2V/cm, 2µs/cm



3 0,2V/cm, 2µs/cm



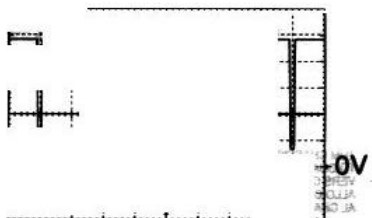
4 100V/cm, 2µs/cm



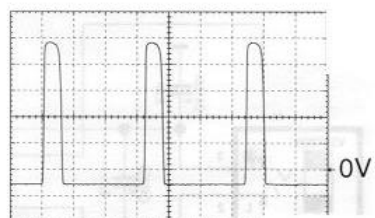
5 100V/cm, 2µs/cm



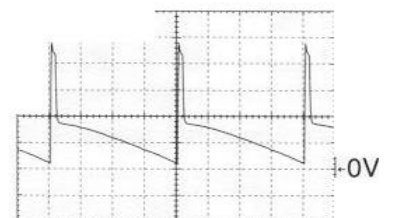
12 1V/cm, 10µs/cm



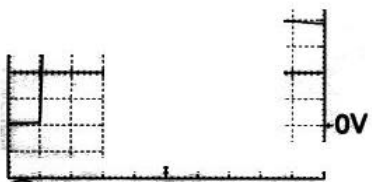
14 2V/cm, 5ms/cm



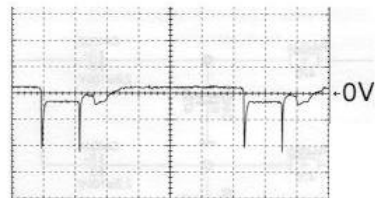
20 1V/cm, 20µs/cm



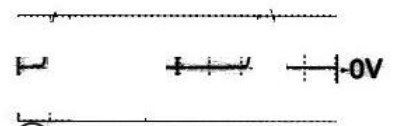
25 10V/cm, 5ms/cm



28 5V/cm, 10µs/cm





29 5V/cm, 10µs/cm





30 500V/cm, 10µs/cm

# Schaltplansymbole / Circuit Diagram Symbols / Simboli sullo schema

 Zeilenbreite / Line width / Amplitude horizontale / Larghezza di riga  
Amplitudo Horizontal


 Hor. Frequenz / Hor. Frequency / Fréqu. horiz. / Frequ. orizz. / Frequ. horiz.


 Hor. Linearität / Hor. linearty / Linéar. Horizont / Linear. orizz. / Lineal. Horizontal

 Bildlage hor. / Hor. picture position / Cadrage horizont. / Posizione orizz. d'immagine / Centrado horizontal


 Ost-West Amplitude / East-West amplitude / Amplitude Est-Ouest / Ampiezza Est-Ovest / Amplitud E-O


 Ost-West Symmetrie / East-West symm. / Symm. Est-Ouest / Simm. Est-Ovest / Simetria E-O

 Bildamplitude / Frame ampl. / Ampl. verticale / Ampiezza d'immagine / Ampl. vertical

 Vert. Frequenz / Vert. frequency / Fréqu. vert. / Frequ. vert. / Frequ. vert.

 Vert. Linearität / Vert. linearity / Linéarité vert. / Linear. vert. / Linealidad vert.

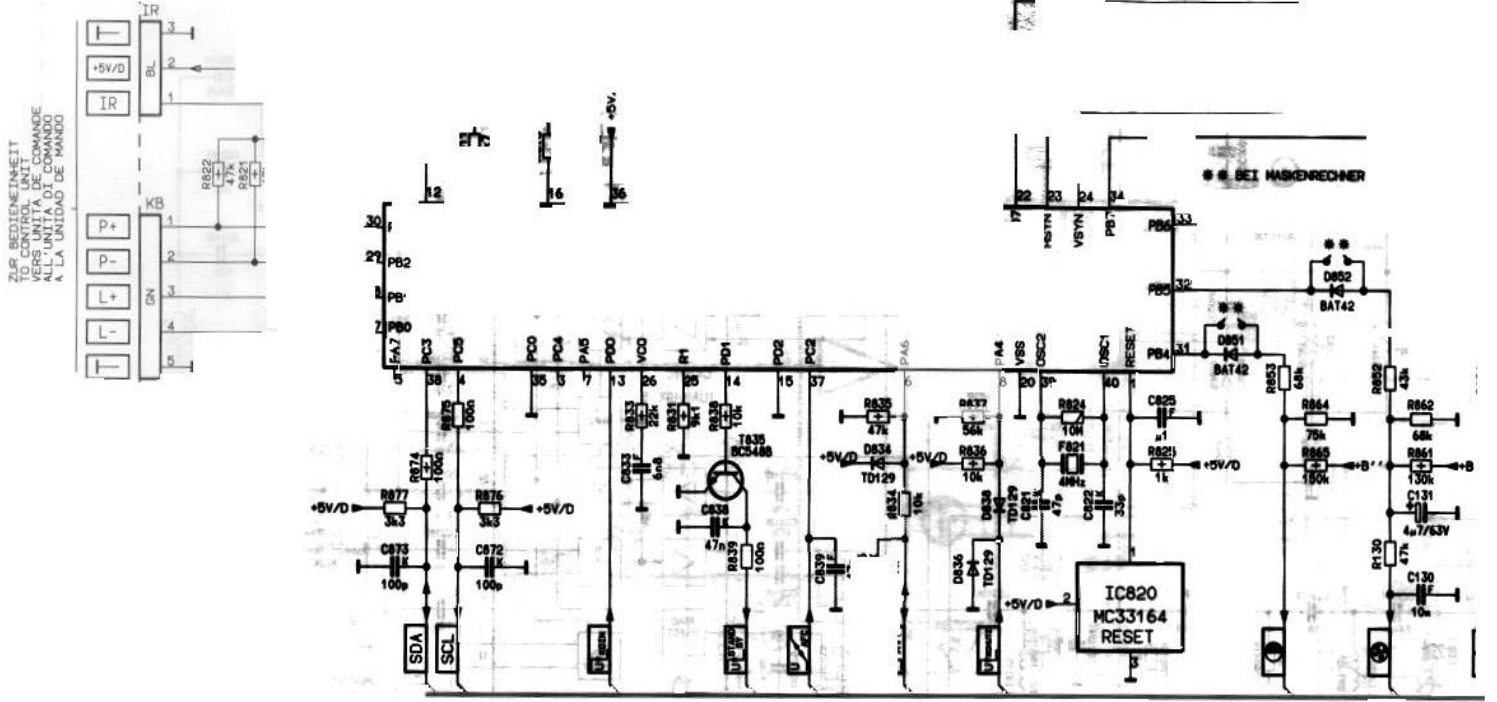
 Bildlage vert. / Vert. picture position / Cadrage vertical / Posiz. vert. d'immagine / Centrado vert.

 Focusregler / Focus control / Réglage de focalisation / Regolat. di focalizz. / Control de foco

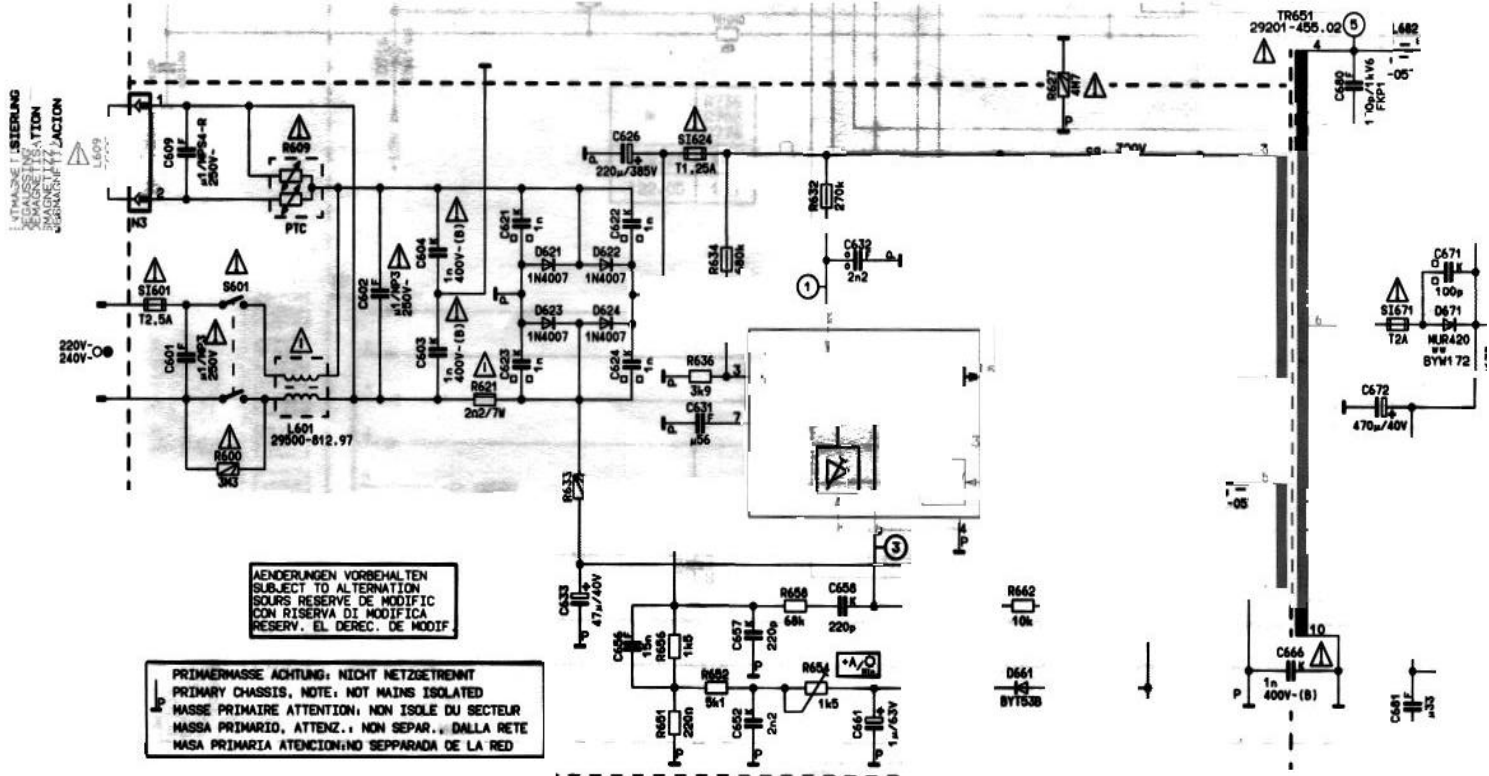
 Trapez / Trapezium / Trapèze / Trapezio / Trapecio



# Gesamtschaltplan / General Circuit Diagram / Schema Completo

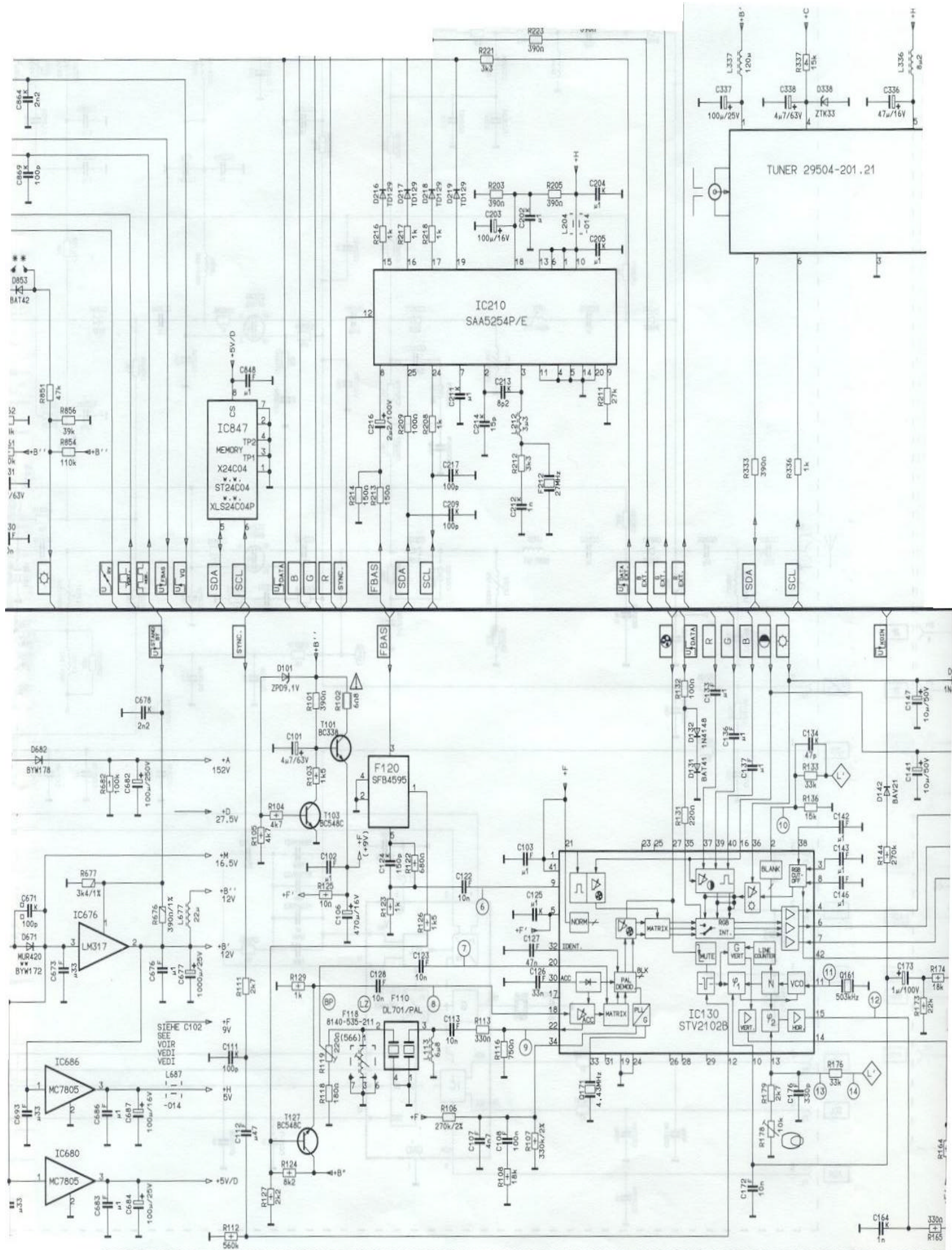


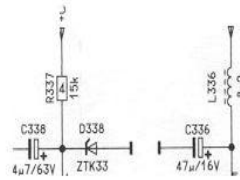
- .. 2...3V
- .. 2...4V
- .. 2...4V



ÄNDERUNGEN VORBEHALTEN  
SUBJECT TO ALTERATION  
SOUIS RESERVE DE MODIFIC  
CON RISERVA DI MODIFICA  
RESERV. EL. DEREC. DE MODIF.

PRIMÄRMASSE ACHTUNG: NICHT NETZGETRENNT  
PRIMARY CHASSIS, NOTE: NOT MAINS ISOLATED  
MASSE PRIMARIA ATTENCION: NON ISOLE DU SECTEUR  
MASSA PRIMARIA ATTENCION: NON SEPAR. DALLA RETE  
MASA PRIMARIA ATENCION: NO SEPARADA DE LA RED

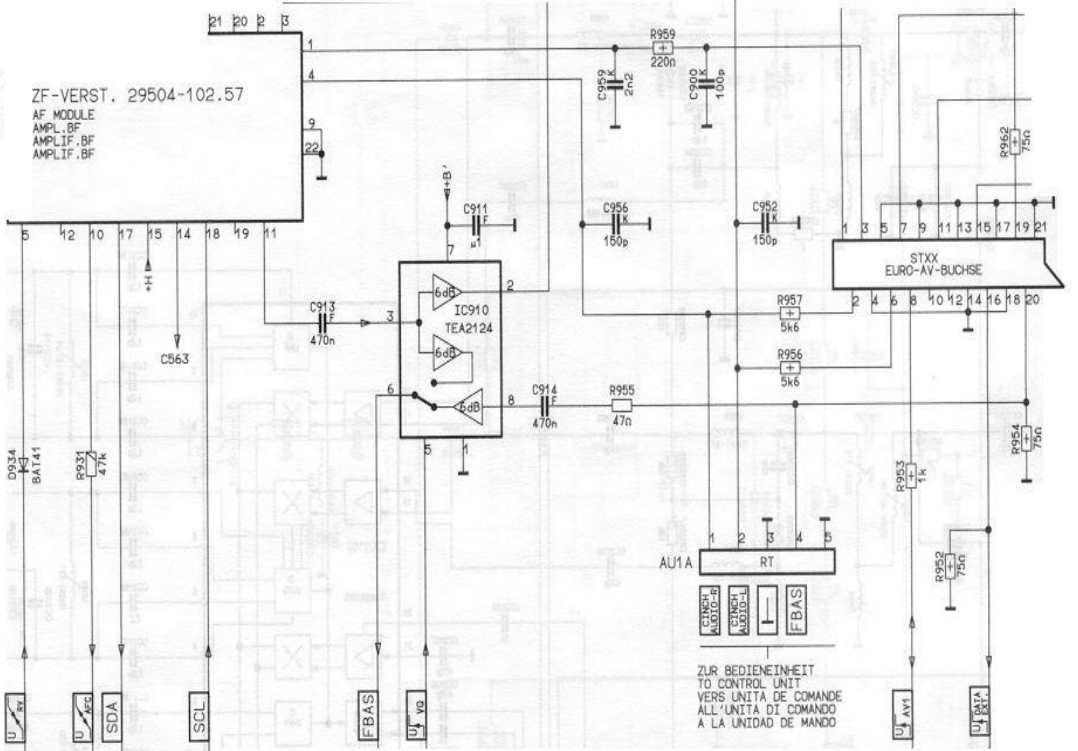




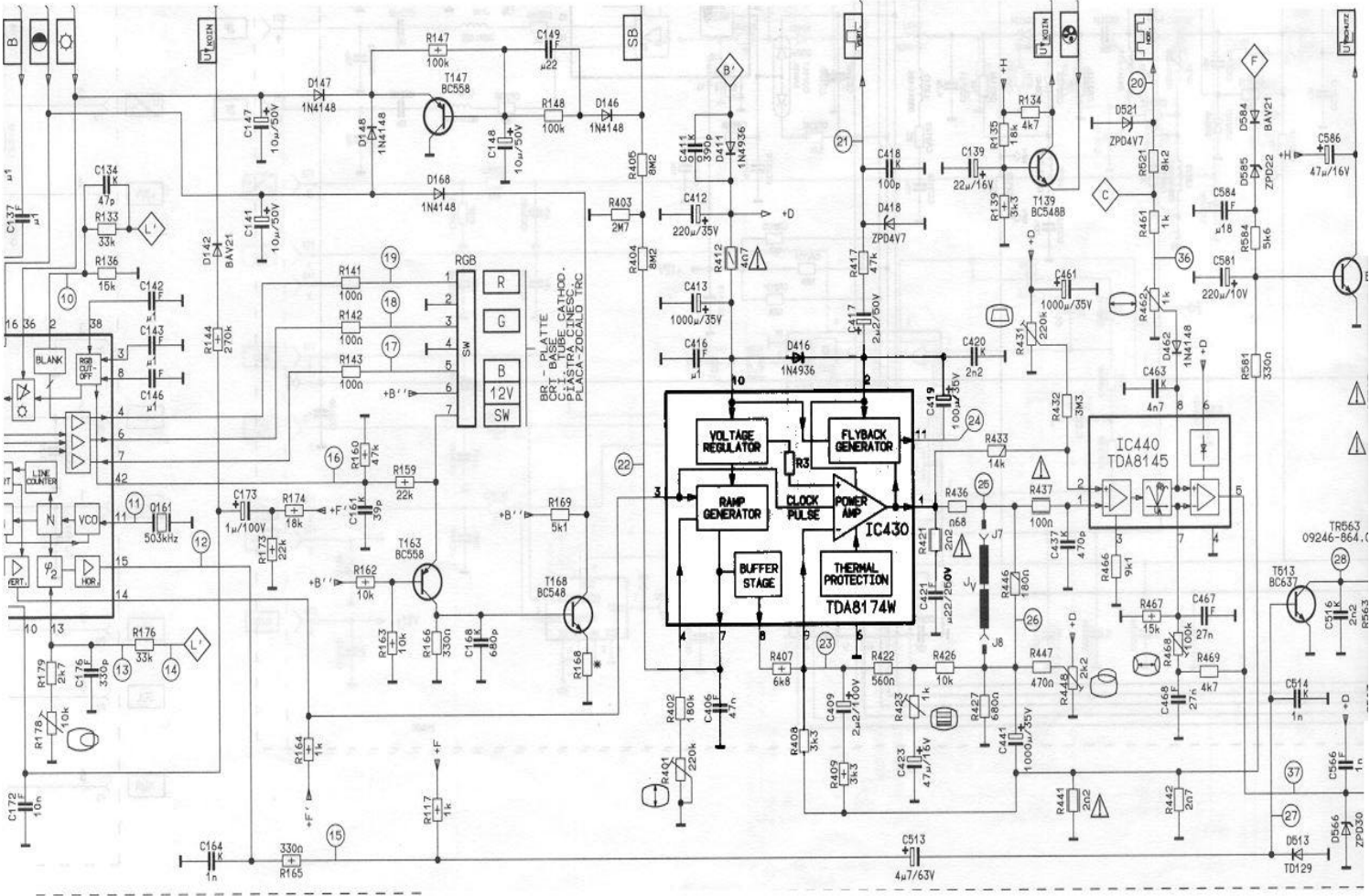
UNER 29504-201.21

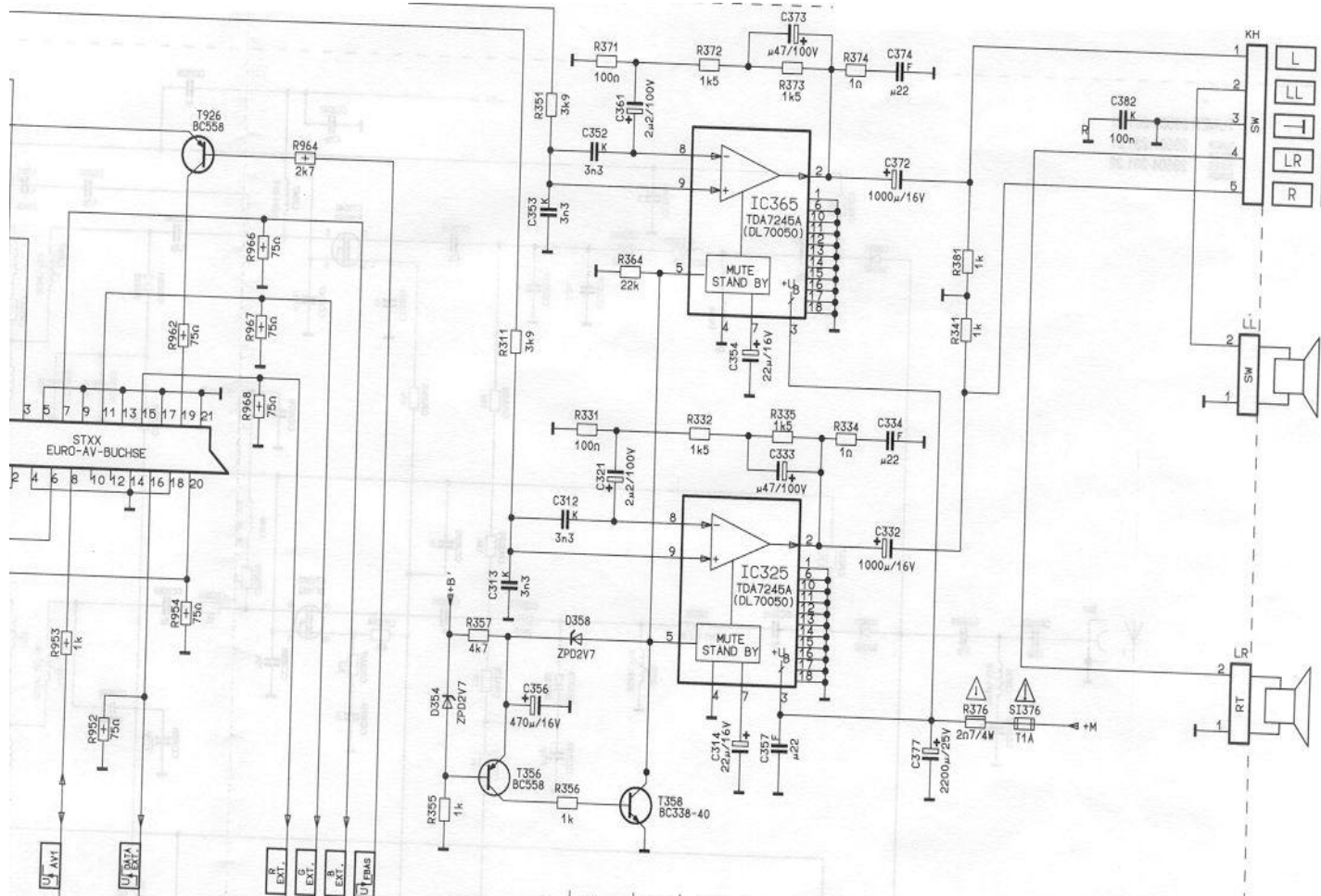


ZF-VERST. 29504-102.57  
 AF-MODULE  
 AMPL. BF  
 AMPLIF. BF  
 AMPLIF. BF



ZUR BEDIENEINHEIT  
 TO CONTROL UNIT  
 VERS UNITÀ DI COMANDO  
 A LA UNIDAD DE MANDO

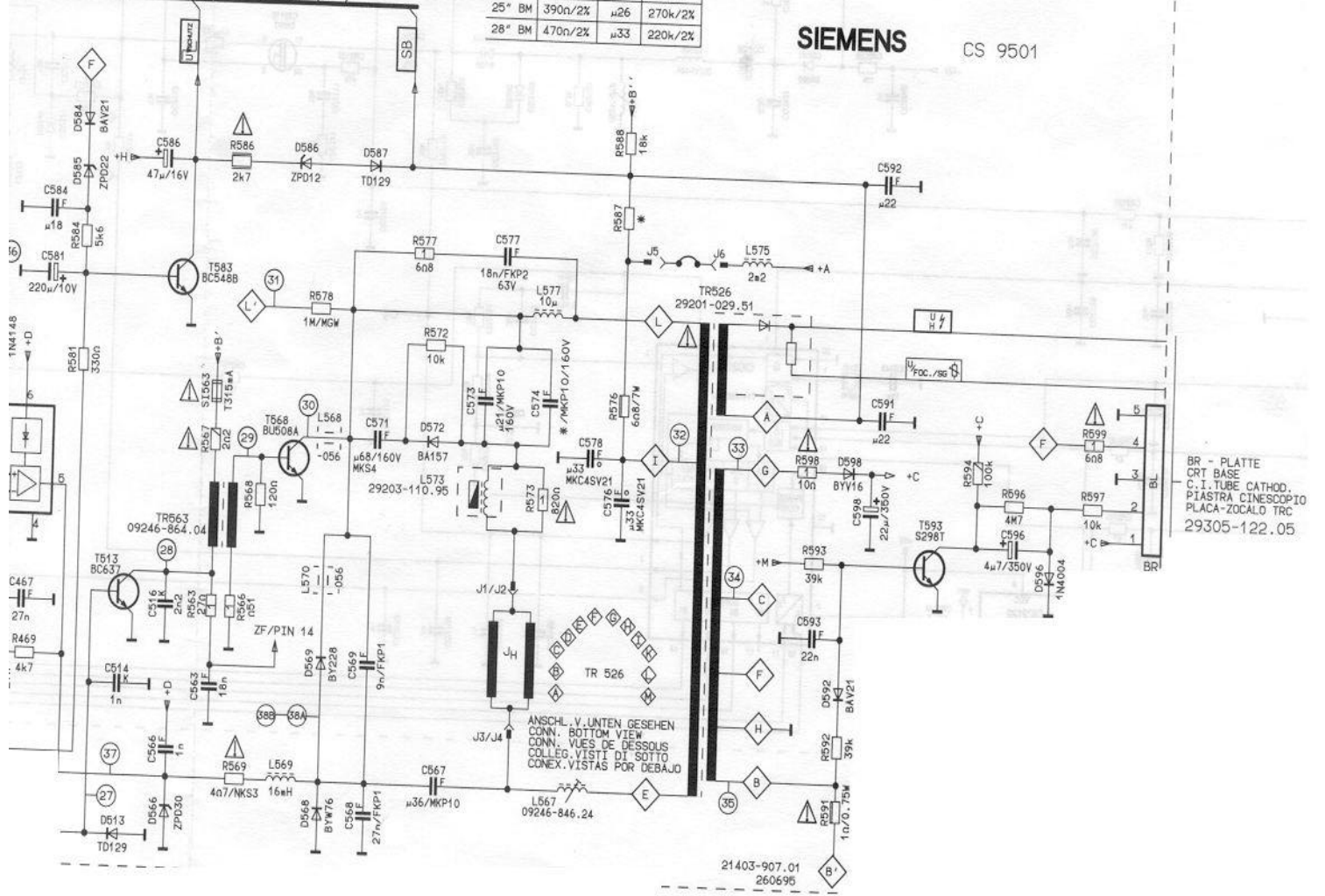




ZUR BEDIENHEIT  
 CONTROL UNIT  
 VERS UNIT  
 ALL UNIT  
 COMMAND  
 ALL UNIT  
 DI  
 COMANDO  
 ALL UNIT  
 DI  
 MANDO

*	R168	C574	R587
25° BM	390n/2%	μ26	270k/2%
28° BM	470n/2%	μ33	220k/2%

**SIEMENS** CS 9501

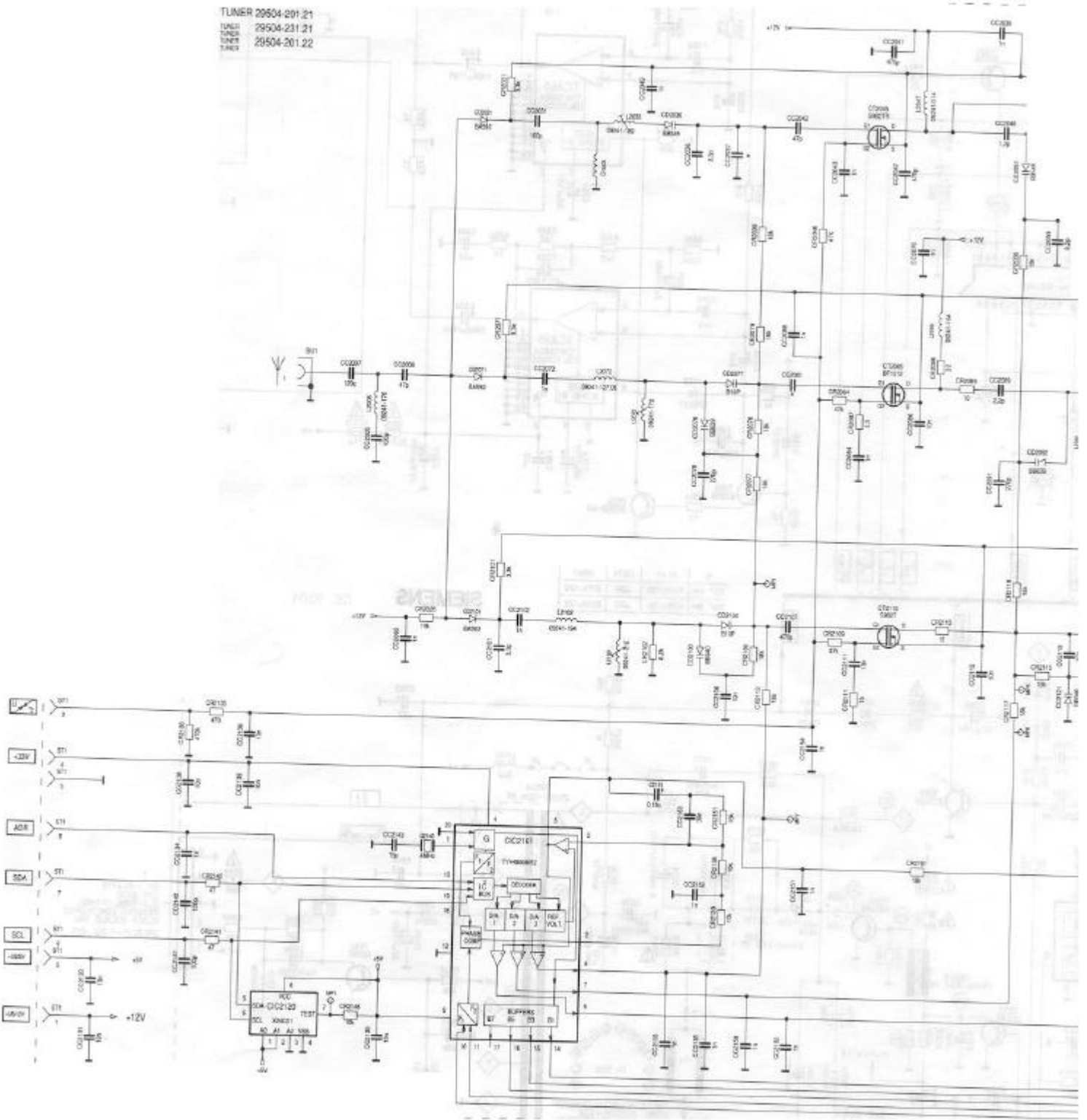


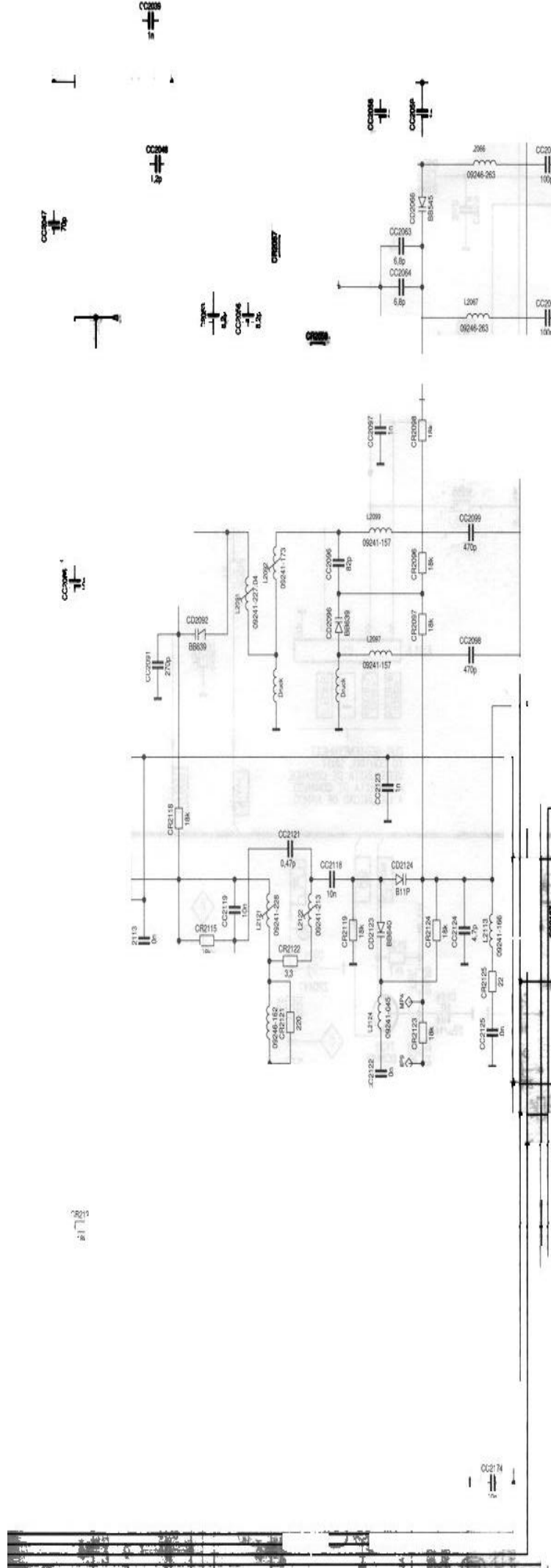
BR - PLATTE  
 CRT BASE  
 C.I. TUBE CATHOD.  
 PIASTRA CINESCOPIO  
 PLACA-ZOCALO TRC  
 29305-122.05

ANSCHL. V. UNTEN GESEHEN  
 CONN. BOTTOM VIEW  
 COLLEC. VUES DE DESSOUS  
 CONEX. VISTAS POR DEBAJO

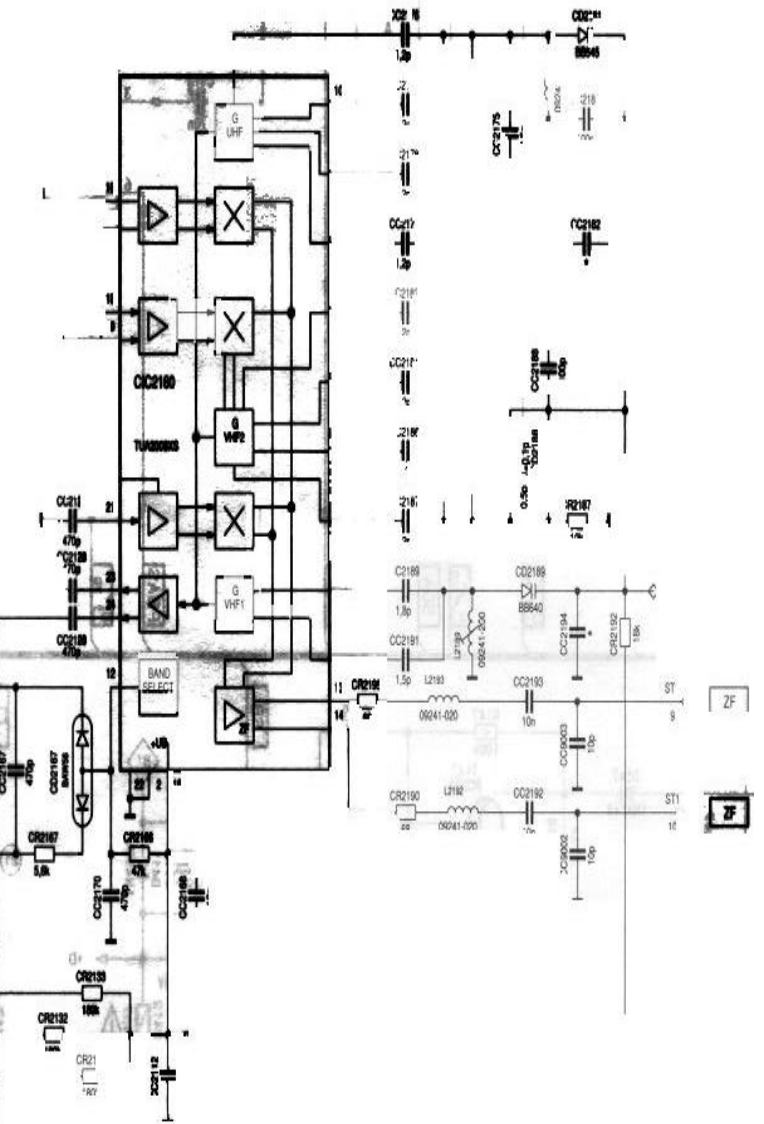
21403-907.01  
 260696

TUNER 29504-201.21  
 TUNE1 29504-231.21  
 TUNE2 29504-201.22





CC2097	CC2101	CC2102	CC2101	L2093	L2092	L2091	CC2091	CC2091
2004-01.21	3.0p	5p	5.0p	47p	-10	-10	10k	10k
2004-01.21	3.0p	4.7p	5.0p	47p	-10	-10	10k	10k
2004-01.22	3.0p	5p	5.0p	47p	-10	-10	10k	47p



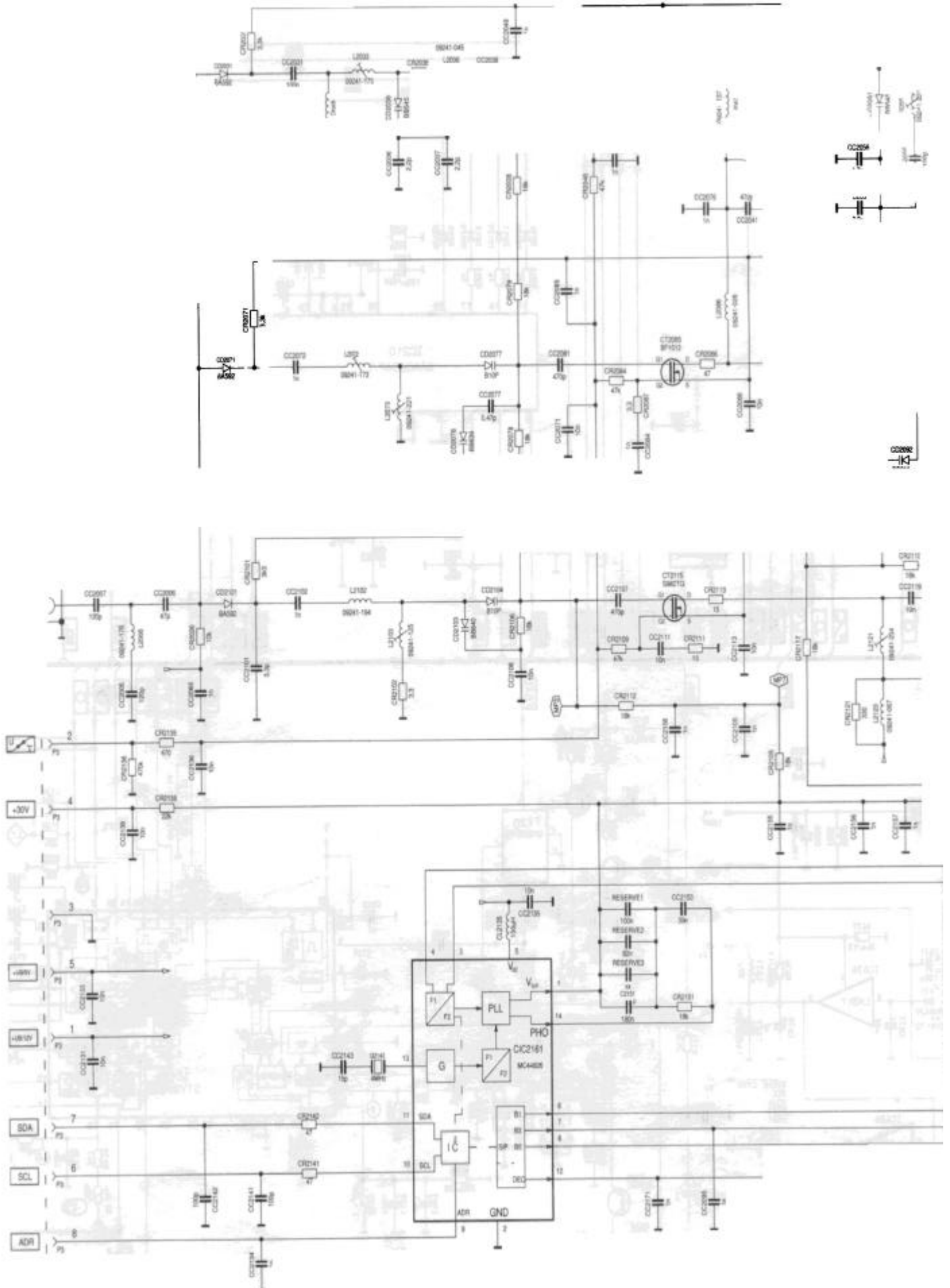
ZF

ZF

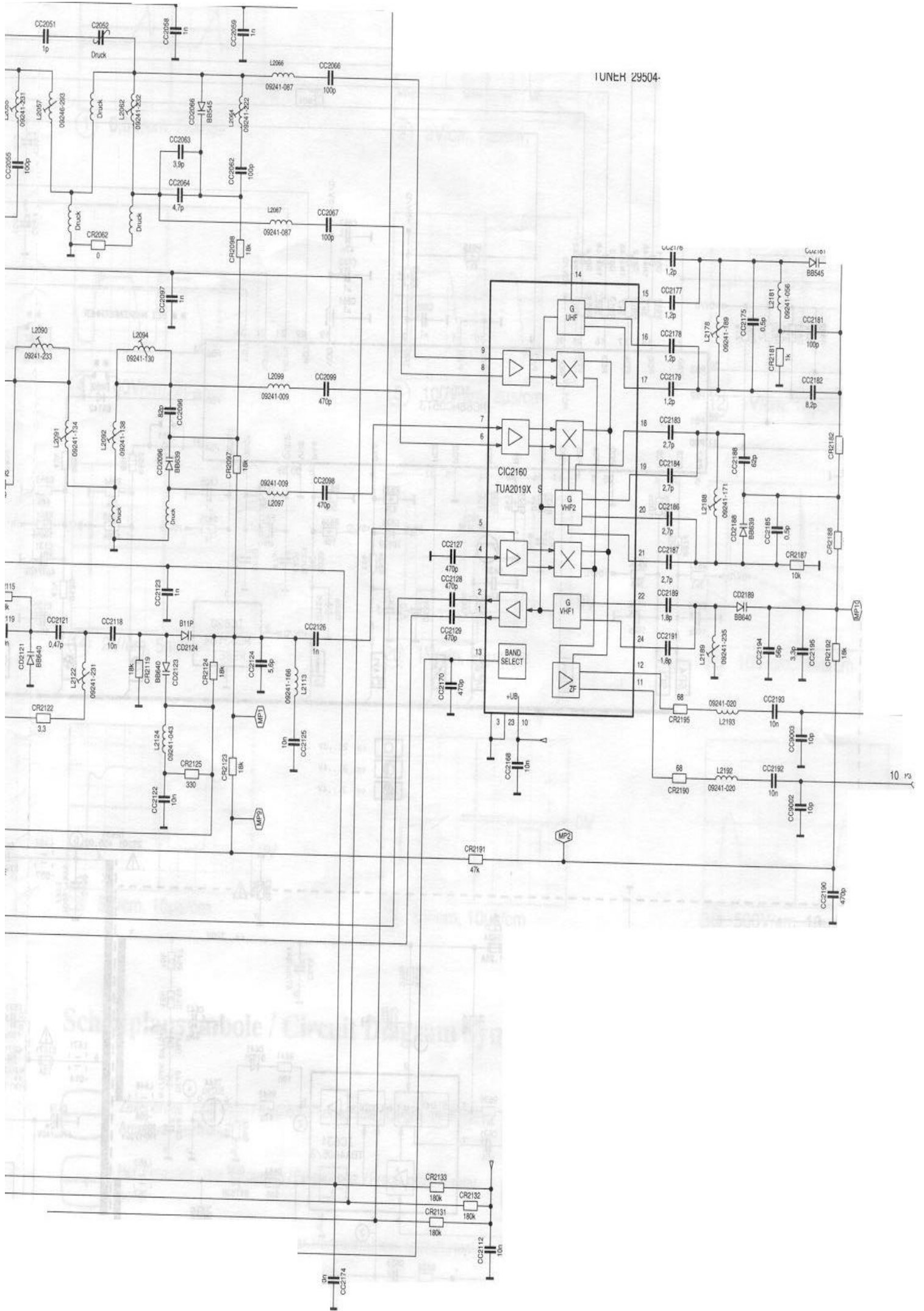
ZF

# Tuner

IF  
RF

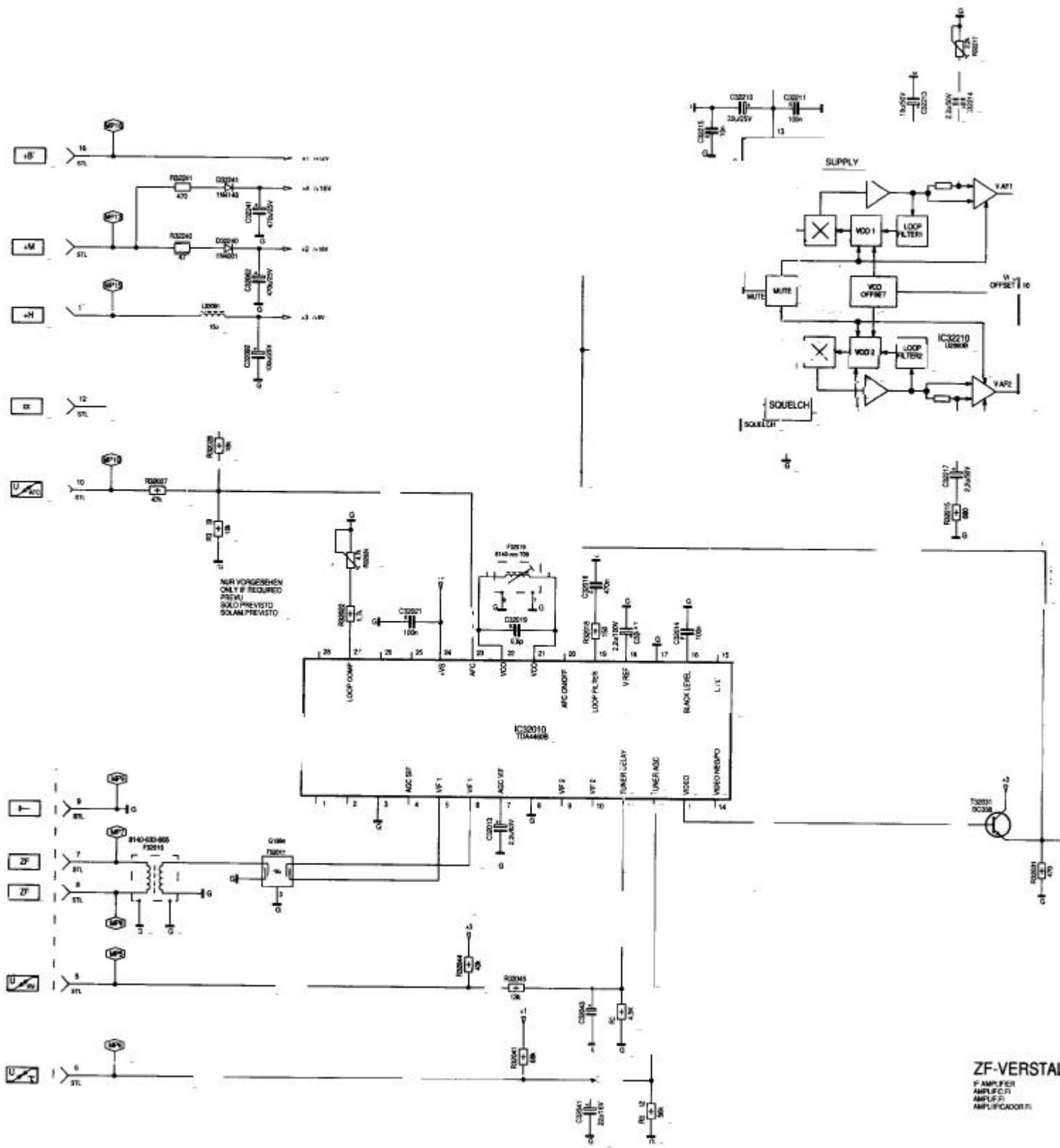


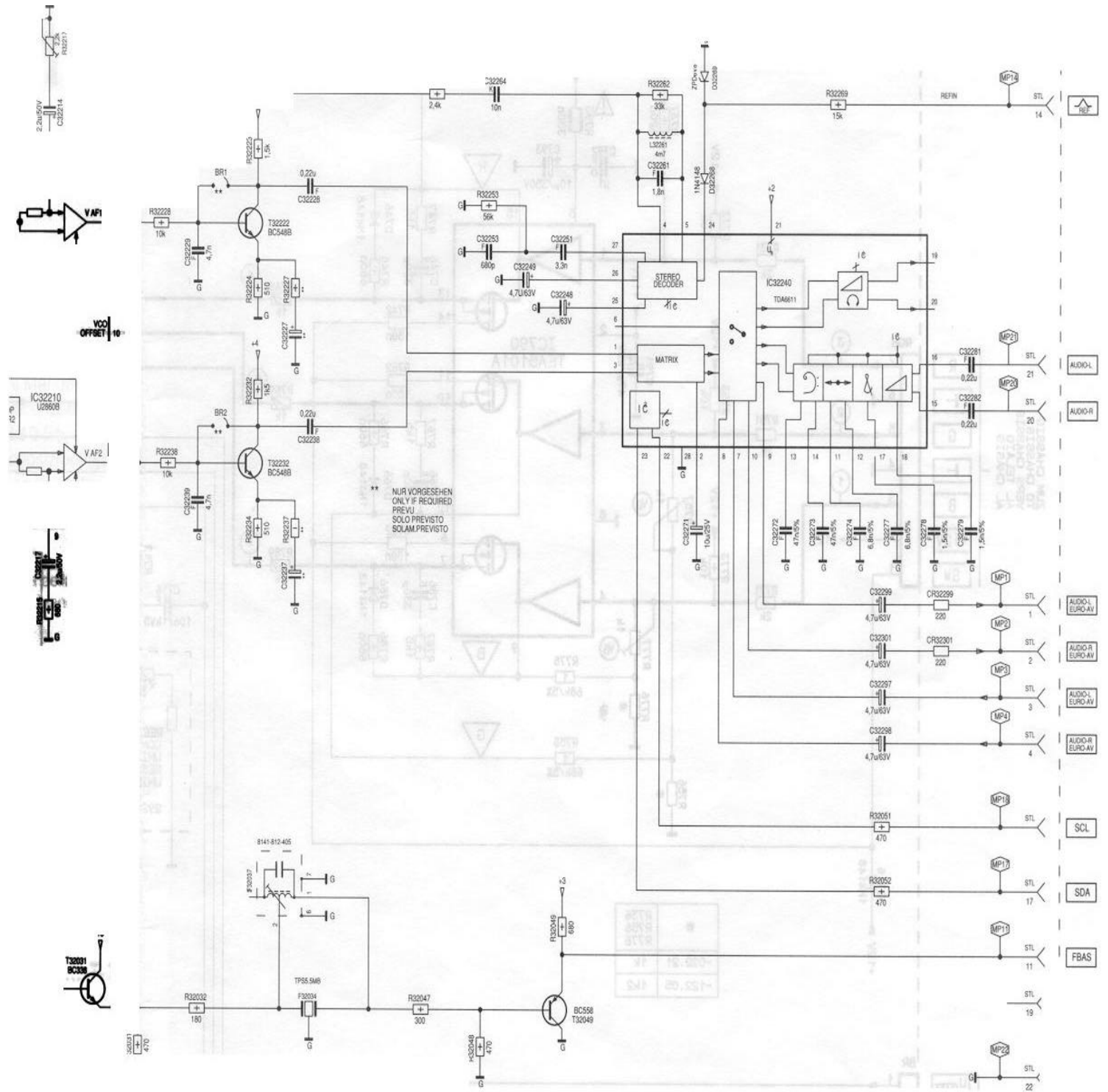
TUNER 29504





# ZF-Verstärker / IF Amplifier Amplificatore FI

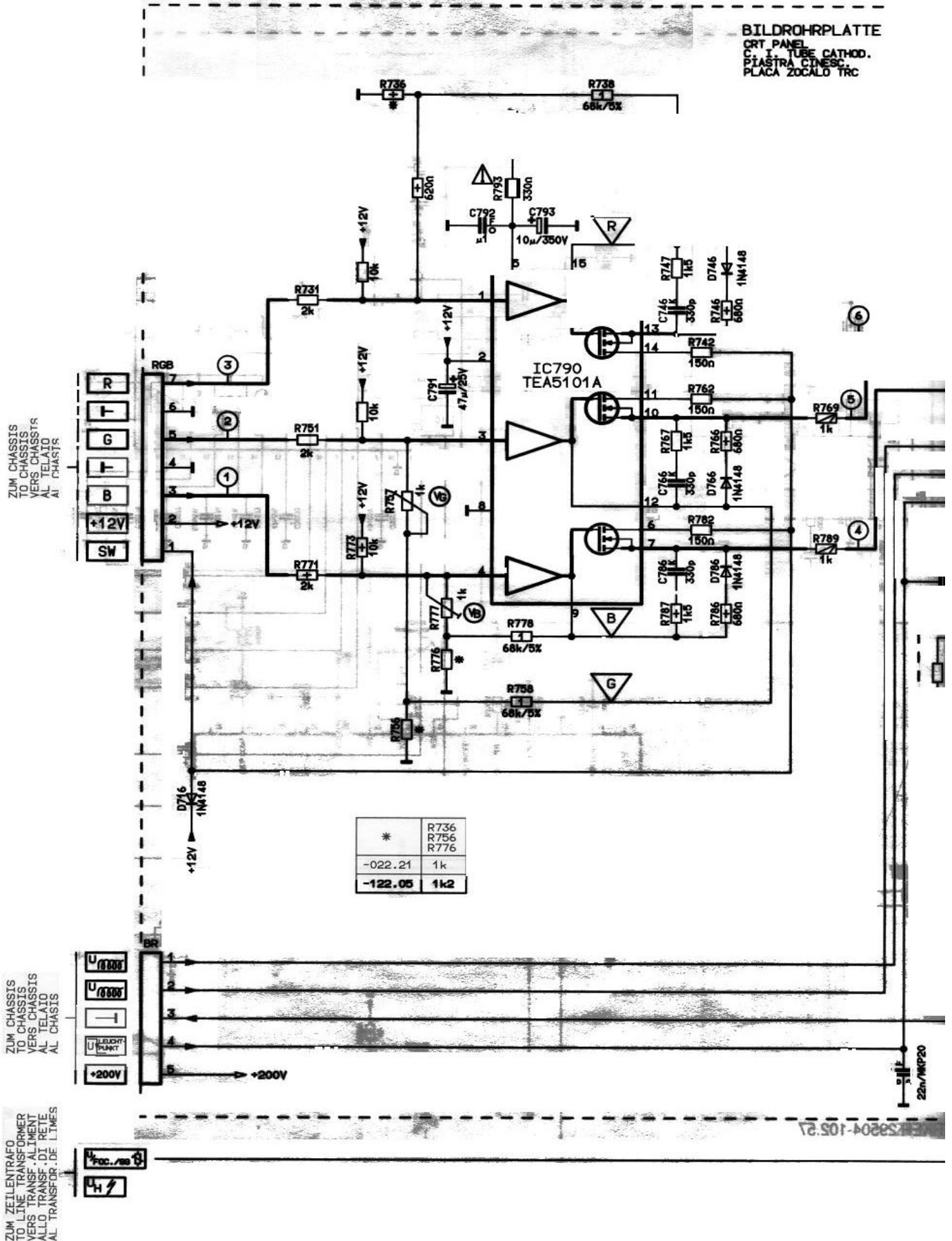




**ZF-VERSTÄRKER 29504-102.57**

F AMPLIFIER  
 AMPLIFICAZIONE  
 AMPLIF. F.  
 AMPLIFICADOR FI

# Bildrohrplatte / CRT Panel / Piastra Cinescopio



ZUM CHASSIS  
TO CHASSIS  
VERS CHASSIS  
AL TELAIO  
AL CHASSIS

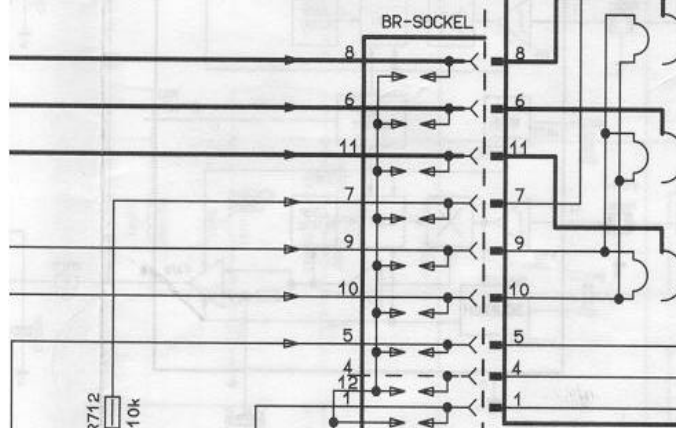
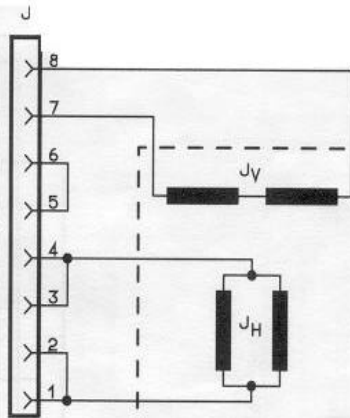
ZUM CHASSIS  
TO CHASSIS  
VERS CHASSIS  
AL TELAIO  
AL CHASSIS

ZUM ZEILENTRAFO  
TO LINE TRANSFORMER  
VERS TRANSF. ALIMENT  
ALLO TRANSF. DI RETE  
AL TRANSFOR. DE L'IMES

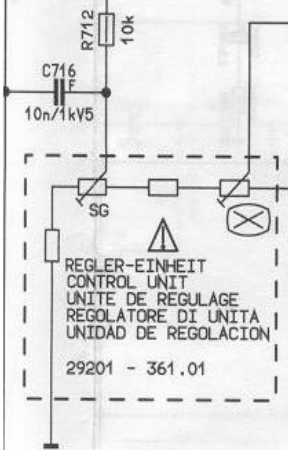
AENDERUNGEN VORBEHALTEN  
SUBJECT TO ALTERNATION  
SOURS RESERVE DE MODIFIC  
CON RISERVA DI MODIFICA  
RESERV. EL DEREC. DE MODIF.

29305-022.21 (21"-28")  
-122.05 (21"-28")

ZUM CHASSIS  
TO CHASSIS  
VERS CHASSIS  
AL TELAIO  
AL CHASIS



110°



22n/MKP20

250495