

## **Serviceanleitung.**

Service Manual.

**M 2106**



**Xelos M155 TM 61478**

**Xelos M155 TM  
Art.-Nr. 61478**

**Xelos M155 H  
Art.-Nr. 61477**

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## Allgemeine Hinweise

### Vor dem Öffnen des Gehäuses zuerst den Netzstecker ziehen!

#### Leitungsverlegung

Bevor Sie die Leitungen und insbesondere die Masseleitungen lösen, muss die Leitungsverlegung zu den einzelnen Baugruppen wie z.B. Chassis, Netzschalterplatte, Bedieneinheit, Bildrohrplatte, Ablenkeinheit, Lautsprecher usw. beachtet werden.

Nach erfolgter Reparatur ist es notwendig, die Leitungsführung wieder in den werkseitigen Zustand zu versetzen um evtl. spätere Ausfälle oder Störungen zu vermeiden.

#### Netzkabel

Diese Geräte dürfen nur mit dem Original-Netzanschlusskabel mit integrierter Entstördrossel betrieben werden. Dieses Netzkabel verhindert Störungen aus dem Netz und ist Bestandteil der Gerätezulassung. Im Ersatzfall bestellen Sie bitte ausschließlich das Netzkabel laut Ersatzteilliste.

## General Notes

### Before opening the cabinet disconnect the mains plug!

#### Wiring

Before disconnecting any leads and especially the earth connecting leads observe the way they are routed to the individual assemblies like the chassis, mains switch panel, keyboard control panel, picture tube panel, deflection unit, loudspeaker and so on.

On completion of the repairs the leads must be laid out as originally fitted at the factory to avoid later failures or disturbances.

#### Mains cable

The TV receiver must only be operated with an original mains connecting cable with an interference suppressor choke integrated in the mains plug. This mains cable prevents interference from the mains supply and is part of the product approval. For replacement please order exclusively the mains connecting cable specified in the spare parts list.

#### Typenschild des Gerätes

Zusätzlich zum Gerätetyp und der Chassisbezeichnung enthält das Gerätetypenschild einen sogenannten "Version Code" z.B. VNA. Diese Kennzeichnung gibt Aufschluß über den technischen/mechanischen Fertigungsstand.

Für die Bestellung von Ersatzteilen sind deshalb folgende Angaben unbedingt erforderlich:

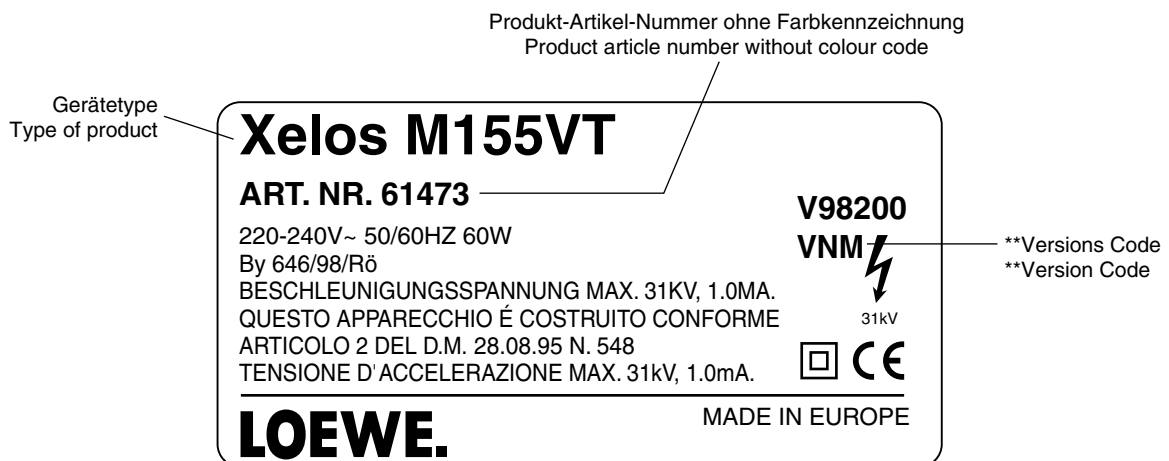
- Gerätetyp (z.B. "Xelos M155 VT")
- Produkt-Artikel-Nummer (z.B. "61473")
- Version Code (z.B. "VNM")
- Materialnummer des Ersatzteils

#### Type Label on the set

In addition to the type of the TV set and the designation of the chassis, a so-called "Version code", e.g. VNA, is printed on the type label. This identification gives information on the technical/mechanical state of production.

Do not fail to give the following particulars when ordering spare parts:

- type of TV set (e.g. "Xelos M155 VT")
- product article number (e.g. "61473")
- version code (e.g. "VNM")
- part number of spare part



#### \*\* Hinweis !

**Versions-Code VNM**  
mit Grundig-Tuner (295043010100) 90338.958

**Versions-Code VNA**  
mit Philips-Tuner (295045010100) 90373.911

#### \*\* Note !

**Version Code VNM**  
with Grundig Tuner (295043010100) 90338.958

**Version Code VNA**  
with Philips Tuner (295045010100) 90373.911

## Hinweise zum Schutz gegen Elektrostatik

### 1. Elektrostatisch gesicherte MOS-Arbeitsplätze

Der Umgang mit gegen Elektrostatik empfindlichen Bauteilen muss an einem elektrostatisch gesicherten MOS-Arbeitsplatz erfolgen. Ein elektrostatisch gesicherter MOS-Arbeitsplatz ertdet über Entladungswiderstände sämtliche leitende Materialien einschließlich der Person. Nichtleiter werden durch Luftionisation entladen. Die Integration von LötKolben und Messgeräten in den gesicherten MOS-Arbeitsplatz ist nur mit Trenntrafo in jedem der verwendeten Geräte möglich. Die Messgeräte-Massen werden ebenfalls mit Entladungswiderständen geerdet.

### 2. Gesicherte Verpackung durch leitfähige Materialien

Zum Schutz gegen Elektrostatik werden elektrisch leitende Kunststoffe für Verpackung und Transportmittel verwendet. Leitende Kunststoffe gibt es als schwarze oder transparente Schutzbeutel, Schaumstoff, Folien und als Behälter.

Empfindliche Bauteile dürfen nur am gesicherten MOS-Arbeitsplatz aus der Verpackung entfernt bzw. verpackt werden.

## Sicherheitsvorkehrungen

### Allgemeine Richtlinien

1. Diese Geräte sind über einen Wandler-Trafo vom Netz getrennt. Bei Service-Arbeiten an der Primärseite dieses Trafos ist ein Trenntransformator erforderlich.
2. Bei der Durchführung von Servicearbeiten dürfen die ursprünglichen Kabelanschlüsse nicht vertauscht werden. Dies gilt insbesondere für die Anschlüsse im Hochspannungsteil. Hat sich ein Kurzschluss ereignet, dann sind alle Teile, an denen Spuren von Überhitzung sichtbar sind, auszuwechseln.
3. Da verschiedene Teile dieser Geräte Sicherheitsfunktionen aufweisen nur Original-Hersteller-Ersatzteile verwenden. Kritische Teile im Netzteil sollten nicht durch ähnliche Teile anderer Hersteller ersetzt werden. Alle kritischen Teile sind im Schaltbild und in der Platinendarstellung mit dem Symbol  $\triangle$  gekennzeichnet.
4. Nach Beenden der Servicearbeiten ist sicher zustellen, dass alle Sicherheitsvorrichtungen, wie Isolationsstege, Isolationspapiere, Abschirmungen und Isolations R-C Glieder wieder richtig eingesetzt sind.
5. Wenn der Fernseher während längerer Zeit nicht in Betrieb gesetzt wird, sollte der Netzstecker aus der Netzsteckdose gezogen werden.
6. Im Betrieb sind Spannungen bis zu 29,9kV in diesem Gerät vorhanden. Die Inbetriebnahme des Fernsehers ohne aufgesetzte Rückwand bringt die Gefahr eines elektrischen Schlages der Fernsehstromversorgung mit sich. Servicearbeiten sollten daher auch nicht von Personen durchgeführt werden, die nicht in vollem Umfang mit den Sicherheitsvorkehrungen beim Umgang mit Hochspannungsgescherten vertraut sind. Vor der Handhabung mit der Bildröhre ist die Anode der Bildröhre immer an dem Empfängerchassis zu entladen.
7. Nach Beenden der Servicearbeiten sind die folgenden Kriechstrom-Prüfungen durchzuführen, um den Kunden vor der Gefahr eines elektrischen Schlages zu schützen.

## Messung des Isolationswiderstandes im abgeschalteten Zustand

1. Den Netzstecker aus der Netzsteckdose ziehen und die beiden Steckerstifte kurzschließen.
2. Den Geräteschalter des Fernsehgerätes einschalten.
3. Mit einem Ohmmeter den Widerstandswert zwischen dem überbrückten Netzkabelstecker und jedem zugänglichen Metallteil am Gehäuse des Fernsehgerätes, wie Schraubenköpfe, Antennen, Achsen der Regler, Griffassungen usw. messen. Wenn ein zugängliches Metallteil eine Rückleitung zum Chassis hat, sollte die Anzeige zwischen  $4M\Omega$  und  $20M\Omega$  betragen. Wenn ein zugängliches Metallteil keine Rückleitung zum Chassis hat, muss die Anzeige unendlich betragen.

## Messung des Kriechstromes im eingeschalteten Zustand

1. Den Netzstecker direkt in eine Netzsteckdose stecken. Für diese Messung keinen Trenntransformator verwenden.
2. Einen  $2k\Omega/10W$ -Widerstand in Serie mit einem von außen zugänglichen Metallteil am Fernsehgerät und einer guten Erdung, z.B. Wasserleitung, anschließen (Abb.1a).
3. Ein Wechselstrom-Voltmeter mit einem Eingangswiderstand von  $1000\Omega/Volt$  oder größer verwenden, um die Spannung über dem Widerstand zu messen.
4. Jedes zugängliche Metallteil prüfen, und an jedem Punkt die Spannung messen.
5. Den Netzstecker umgekehrt in die Steckdose stecken und jede der obigen Messungen wiederholen.
6. Die Spannung darf an keinem der Punkte  $1,4V_{eff}$  überschreiten. Wird dieser Wert nicht eingehalten, besteht die Gefahr eines elektrischen Schlages, und das Fernsehgerät sollte daher repariert und nachgeprüft werden, bevor es an den Kunden zurückgegeben wird.

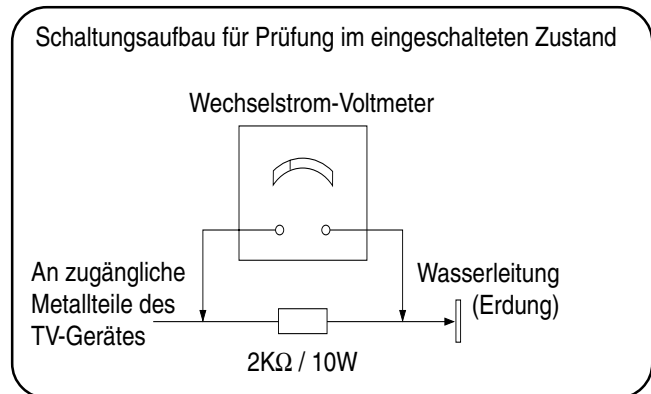


Abb.1a Messung des Kriechstromes

## Achtung, Röntgenstrahlung!

1. Potentielle Quellen von Röntgenstrahlung in Fernsehgeräten sind das Hochspannungsteil und die Bildröhre.
2. Bei Verwendung eines Bildröhren-Prüfgerätes für den Service ist sicherzustellen, dass es für die Belastung von  $31,0kV$  geeignet ist, ohne dass eine Röntgenstrahlung verursacht wird.

## Messung der Hochspannung

1. Helligkeit auf Minimum stellen.
2. Die Hochspannung messen. Die Anzeige des Instrumentes sollte  $29,0kV \pm 0,7kV$  betragen. Falls die Anzeige diese Toleranzgrenzen überschreitet, ist die sofortige Behebung nötig, um die Möglichkeit vorzeitigen Komponentenausfalls zu verhüten.
3. Um die Möglichkeit von Röntgenstrahlung zu begrenzen, ist es wichtig, dass nur die vorgeschriebene Bildröhre verwendet wird.  
**Anmerkung:** Es ist wichtig, dass ein präzises, regelmäßig geprüfetes Voltmeter verwendet wird.

## Note on electrostatic shielding

### 1. Electrostatically shielded MOS workstations

Components sensitive to electrostatic discharge must be handled at workstation with electrostatic shielding. An electrostatically shielded MOS workstation is fitted with discharge resistor which earth all conductive materials, including the technician working there. Dielectrics are discharged by air ionisation. The use of soldering irons and measuring equipment at shielded workstation is only possible in conjunction with isolating transformer in each of the devices used. Measuring equipment chassis are also earthed with discharge resistors.

### 2. Shielded packaging using conductive materials

To protect against electrostatic charges, electrically conductive plastics are used for packaging and transport purposes. Conductive plastics are available in the form of transparent protective bags, foam plastic, film sheeting or containers. Sensitive components requiring the use of protective packaging must only be packed and unpacked at shielded workstations.

## Safety Precautions

### General Guide Lines

1. These television sets are isolated from the electric power mains by the power transformer. An additional isolation transformer is necessary for servicing work on the primary side of the power transformer.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. Since many parts in the unit have special safety related characteristics, always use genuine producer replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts marked with  $\Delta$  in the circuit diagram and printed wiring board.
4. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
5. When the receiver is not being used for a long period of time, unplug the power cord from the AC outlet.
6. Potentials as high as 29.9kV are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the chassis before handling the tube.
7. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

### Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs of the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aeriels, connectors, control shafts etc. When the exposed metallic part has a return path to the chassis the reading should be between  $4M\Omega$  and  $20M\Omega$ . When the exposed metal does not have a return path to the chassis the reading must be infinite.

### Leakage current hot check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a  $2k\Omega/10W$  resistor in series with an exposed metallic part on the receiver and an earth such as a water pipe (fig.1a).
3. Use an AC voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed Metallic part and check the voltage at each point.
5. Reverse the AC plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1.4Vrms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

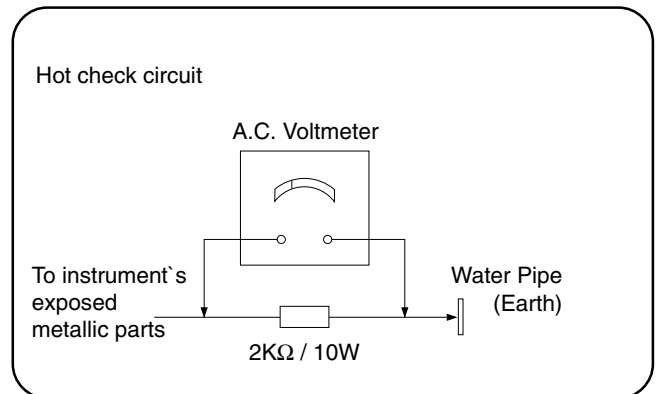


Fig.1a Leakage current hot check

### X-Radiation warning

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service ensure that the jig is capable of handling 31.0kV without causing X-Radiation.

### Measuring high voltage

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate  $29.0kV \pm 0.7kV$  if the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

**NOTE:** It is important to use an accurate periodically calibrated high voltage meter

**Modulübersicht / Module List**

	Identnummer Ident Number	Xelos M155 H M 2106 (VNA)	Xelos M155 TM M 2106 (VNA)
Chassis		297040127100	297040127200
Tuner PLL	295045010100	●	●
Bildrohrplatte CRT Panel	293051223800	●	●
Interfaceplatte Interface Board	293051292100	●	●
Uhr Modul Clock Module	295010880100	-	●
Prozessorplatte Processor Board	293052192000	●	●
Netzteil 12/17V Power Supply 12/17V	293040508100	●	●
Hospital Modul Hospital Module	295041082500	●	-

**D****Bestellung von Ersatzteilen:**

Benutzen Sie für die Bestellung von Ersatzteilen nicht die in den Schaltplänen oder Platinenabbildungen verwendeten Sachnummern, sondern die Ersatzteil-Materialnummern aus der Ersatzteilliste.

**GB****Ordering of Spare Parts:**

For ordering spare parts do not use the part numbers indicated on the circuit diagrams or figures of the circuit boards but the spare part numbers specified in the spare parts list.

## Technische Daten / Technical Data

	<b>XELOS M155 H VNM / VNA (M 2106)</b>	<b>XELOS M155 TM VNM / VNA (M 2106)</b>
<b>Bildröhre / Picture Tube</b>		
Sichtbares Bild Visible picture	51cm	51cm
Bildröhre Picture tube	55cm (21") Black Matrix Philips 27,5kV small neck	55cm (21") Black Matrix Philips 27,5kV small neck
Ablenkwinkel Deflection angle	90°	90°
Bildwechselfrequenz Vertical frequency	50Hz	50Hz
<b>Elektronik / Electronic</b>		
Programmspeicherplätze Programme positions	99 TV + 1 AV	99 TV + 1 AV
Tuner	PLL-Frequenzsynthesizer Abstimmung UHF/VHF PLL frequency synthesizer tuning UHF/VHF	PLL-Frequenzsynthesizer Abstimmung UHF/VHF PLL frequency synthesizer tuning UHF/VHF
TV-Normen TV-Standards	PAL, via AV: NTSC 4,43MHz B/G	PAL, SECAM via AV: NTSC 4,43MHz + 3.58MHz B/G, I, D/K/K', L/L'
Videotext Teletext	7 Seiten TOP/FLOF-text 7-pages TOP/FLOF text	7 Seiten TOP/FLOF-text 7-pages TOP/FLOF text
Musikleistung Music power	Mono 8W	Mono 8W
<b>Anschlüsse Front / Connections Front</b>		
Kopfhörer Headphones	Mono 3,5mm Buchse, schaltet internen Lautsprecher ab Mono 3.5mm jack, switches off internal LS	—
<b>Anschlüsse Rückwand / Connections Rear Panel</b>		
Euro AV 1 (schwarz, black)	FBAS-Ein/Ausgang, S-Video-Eingang, RGB-Eingang, Digital Link  CCVS in-/output, S-Video input, RGB input, Digital Link	FBAS-Ein/Ausgang, S-Video-Eingang, RGB-Eingang, Digital Link  CCVS in-/output, S-Video input, RGB input, Digital Link
Lautsprecherbuchse Loudspeaker socket	optional	optional
Antennenanschluss terrestrisch Antenna for terrestrial reception	Koaxialbuchse Coaxial socket	Koaxialbuchse Coaxial socket
Interface	Communication interface 40 PIN	Communication interface 40 PIN
Netzanschluss Power supply plug	Netzkabel steckbar Power cord plug-in type	Netzkabel steckbar Power cord plug-in type
<b>Netzteil / Mains Stage</b>		
Netzspannung (Regelbereich) Mains voltage (variable)	230V±15%	230V±15%
Netzfrequenz Mains frequency	50 / 60Hz	50 / 60Hz
Leistungsaufnahme Power consumption	ca. 60W	ca. 65W
Standby	ca. 5W	ca. 5W

# D Schaltungsymbole GB Circuit Diagram Symbols F Symboles schéma


## I Simboli sullo schema E Símbolos en los esquemas

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padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> </div> <div style="margin-bottom: 5px;">Kontrast / Contrast / Contraste / Contrasto / Contraste</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> </div> <div style="margin-bottom: 5px;">Farbkontrast / Colour contrast / Contraste des couleurs / Contrasto colore / Contraste de color</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> </div> <div style="margin-bottom: 5px;">Schutzschaltung / Protection circuit / Circuit de sécurité / Circuito di protezione / Circuito de protección</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">A-AM</span> </div> <div style="margin-bottom: 5px;">Audio AM</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">ABK</span> </div> <div style="margin-bottom: 5px;">(Burst Key): Burstaustastimpuls / Burst blanking pulse / Impulsion de suppress. de burst / Imp. di soppress. del burst / Imp. supresion burst</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO</span> </div> <div style="margin-bottom: 5px;">Ton-Signal / Audio signal / Signal audio / Segnale audio / Señal audio</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO-L</span> </div> <div style="margin-bottom: 5px;">Ton-Signal links / Audio signal left / Signal audio gauche / Segnale audio sinistra / Señal audio izquierda</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO-R</span> </div> <div style="margin-bottom: 5px;">Ton-Signal rechts / Audio signal right / Signal audio droit / Segnale audio destra / Señal audio derecha</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO MAC</span> </div> <div style="margin-bottom: 5px;">Tonsignal D2 Mac / Audio signal D2MAC / Signal audio D2MAC / Segnale audio D2MAC / Señal de sonido D2MAC /</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO L-MAC</span> </div> <div style="margin-bottom: 5px;">Tonsignal links D2 Mac / Audio signal left D2MAC / Signal audio gauche D2MAC / Segnale audio sinistro D2MAC / Señal de sonido izquierdo D2MAC</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO R-MAC</span> </div> <div style="margin-bottom: 5px;">Tonsignal rechts D2 MAC / Audio signal right D2MAC / Signal audio droit D2MAC / Segnale audio destro D2MAC / Señal de sonido derecho D2MAC /</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO SUB</span> </div> <div style="margin-bottom: 5px;">Audio Tieftöner / Audio sub woofer / Audio haut-parleur pour les frequences basses / Audio toni bassi / Audio sonido bajo</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO TV</span> </div> <div style="margin-bottom: 5px;">Audio-Signal FS Gerät / Audio signal TV set / Signal audio téléviseur / Segnale audio TV / Señal audio TV</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">AUDIO VCR</span> </div> <div style="margin-bottom: 5px;">Tonsignal VCR Gerät / Audio signal VCR unit / Signal audio magnetoscope / Segnale audio VCR / Señal audio VCR</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">A-ZF 1</span> </div> <div style="margin-bottom: 5px;">Audio ZF 1 / Audio IF 1 / Audio FI 1 / Audio FI 1 / Audio FI 1</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">A-ZF 2</span> </div> <div style="margin-bottom: 5px;">Audio ZF 2 / Audio IF 2 / Audio FI 2 / Audio FI 2 / Audio FI 2</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B</span> </div> <div style="margin-bottom: 5px;">Blau-Signal / Blue signal / Signal bleu / Segnale blu / Señal azul</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">BB</span> </div> <div style="margin-bottom: 5px;">Basisband / Baseband / Bande de base / Banda base / Banda base</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B EXT</span> </div> <div style="margin-bottom: 5px;">Blau-Signal extern / Signal blue external / Signal bleu externe / Segnale blu esterno / Señal azul externa</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B OSD</span> </div> <div style="margin-bottom: 5px;">OSD-Einblendung blau / OSD blue / Eblouissement OSD bleu / Visualizzazione OSD blu / Visualisacione OSD azul</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B PIP</span> </div> <div style="margin-bottom: 5px;">Blau-Signal PIP / PIP Blue signal / Signal bleu PIP / Segnale blu PIP / Señal azul PIP</div>	<div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B/50</span> </div> <div style="margin-bottom: 5px;">Blau - Signal - 50Hz vert., 15625Hz hor. / Blue signal - 50Hz vert., 15625Hz hor. / Signal bleu - 50Hz vert., 15625Hz hor. / Segnale blu - 50Hz vert., 15625Hz hor. / Señal azul - 50Hz vert., 15625Hz hor.</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B/100</span> </div> <div style="margin-bottom: 5px;">Blau-Signal -100Hz vert., 31250Hz hor. / Blue signal -100Hz vert., 31250Hz hor. / Signal bleu -100Hz vert., 31250Hz hor. / Segnale blu -100Hz vert., 31250Hz hor. / Señal azul -100Hz vert., 31250Hz hor.</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B-Y / 50</span> </div> <div style="margin-bottom: 5px;">B-Y -Signal - 50Hz vert., 15625Hz hor. / B-Y -Signal - 50Hz vert., 15625Hz hor. / Signal B-Y - 50Hz vert., 15625Hz hor. / Segnale B-Y - 50Hz vert., 15625Hz hor. / Señal B-Y - 50Hz vert., 15625Hz hor.</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">B-Y / 100</span> </div> <div style="margin-bottom: 5px;">B-Y -Signal - 100Hz vert., 31250Hz hor. / B-Y -Signal - 100Hz vert., 31250Hz hor. / Signal B-Y - 100Hz vert., 31250Hz hor. / Segnale B-Y - 100Hz vert., 31250Hz hor. / Señal B-Y - 100Hz vert., 31250Hz hor.</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">C</span> </div> <div style="margin-bottom: 5px;">Kanalwahl / Channel selection / Sélection de canaux / Selez. canale / Selección canal</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CENTER</span> </div> <div style="margin-bottom: 5px;">Mittelpunkt-Lautsprecher / Center loudspeaker / Haut-parleur de centre / Alto parlante punto centrale / Altavoz del centro</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CHIP ADR</span> </div> <div style="margin-bottom: 5px;">Chip Adresse / Chip adress / Chip direction / Indiri. del chip / Direccion chip</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CINCH AUDIO L</span> </div> <div style="margin-bottom: 5px;">Ton-Signal Cinch links / Audio signal cinch left / Signal audio cinch gauche / Segnale audio cinch sinistra / Señal audio cinch izquierda</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CINCH AUDIO R</span> </div> <div style="margin-bottom: 5px;">Ton-Signal Cinch rechts / Audio signal cinch right / Signal audio cinch droit / Segnale audio cinch destra / Señal audio cinch derecha</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CHROMA</span> </div> <div style="margin-bottom: 5px;">Chroma Signal / Chroma signal / Signal dégree / Cromo segnale / Señal cromia</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CHROMA S-VHS</span> </div> <div style="margin-bottom: 5px;">Chroma S-VHS-Signal / Chroma S-VHS-Signal / Signal dégree de S-VHS / Cromo segnale S-VHS / Señal cromia S-VHS</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CLK</span> </div> <div style="margin-bottom: 5px;">Clock</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CL 1</span> </div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CL 2</span> </div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CSY</span> </div> <div style="margin-bottom: 5px;">Composite Sync. Imp. für VT / Composite sync pulse for TT / Imp. de sync. vidéo-composite pour TXT / Imp. hor. para Video Comp.</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">CS / 100</span> </div> <div style="margin-bottom: 5px;">Kombiniertes Hor./vert. Sync. Signal 31250Hz/100Hz (Composite Sync.) / Combined hor./vert. sync signal 31250Hz/100Hz (Composite Sync) / Signal synchr. hor./vert. combiné 31250Hz/100Hz (Synchr. composité) / Segnale sincr. orizz./vert. 31250Hz/100Hz (Sincr. Composito) / Señal combinada sincr. hor./vert. 31250/100Hz (Sincr. compuesto)</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">DATA</span> </div> <div style="margin-bottom: 5px;">Daten / Data / Données / Dati / Datos</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">DL</span> </div> <div style="margin-bottom: 5px;">Verzögerungsleitung / Delay line / Ligne à retard / Linea di ritardo / Linea de retardo</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">ENA</span> </div> <div style="margin-bottom: 5px;">Freigabe / Enable / Autorisation / Consenso / Habilitacion</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">ENA ZF</span> </div> <div style="margin-bottom: 5px;">Freigabe ZF / IF Enable / Validation FI / Consenso FI / Autorización FI</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">ENABLE FT</span> </div> <div style="margin-bottom: 5px;">Freigabe FT / Finetuning enable / Autorisation Réglage fin / Abilitaz. Sintonia fine / Habilitacion Sintonia fina</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">ENABLE LED</span> </div> <div style="margin-bottom: 5px;">Freigabe LED / LED enable / Autorisation LED / Abilitaz. LED / Habilitacion LED</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">ENABLE TON</span> </div> <div style="margin-bottom: 5px;">Freigabe Ton / Sound enable / Autorisation son / Abilitaz. audio / Habilitacion sonido</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">EURO-AV AUDIO-L</span> </div> <div style="margin-bottom: 5px;">Audio-Signal EURO-AV links / Audio signal EURO-AV left / Signal audio EURO-AV gauche / Segnale audio EURO-AV sinistra / Señal audio izquierda EURO-AV</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">EURO-AV AUDIO-R</span> </div> <div style="margin-bottom: 5px;">Audio-Signal EURO-AV rechts / Signal audio EURO-AV right / Signal audio EURO-AV droit / Segnale audio EURO-AV destra / Señal audio derecha EURO-AV</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">EURO-AV VIDEO</span> </div> <div style="margin-bottom: 5px;">Video-Signal EURO-AV / Video signal EURO-AV / Signal video EURO-AV / Segnale video EURO-AV / Señal video EURO-AV</div> <div style="border: 1px solid black; padding: 2px; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 0.8em;">F</span> </div> <div style="margin-bottom: 5px;">Farb-Signal / Chroma signal / Signal chroma / Segnale chroma / Señal cromia</div>
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<b>FBAS</b>	FBAS-Signal / CCVS signal / Signal vidéo composite / Segnale video composito / señal video compuesta	<b>IR</b>	Infrarot-Signal / Signal infrared / Signal infra-rouge / Segnale infrarosso / Señal infrarojo.
<b>FBAS CINCH</b>	FBAS-Signal-Cinch Buchse / CCVS signal-cinch socket / FBAS-prise à cinch / FBAS-presa cinch / FBAS-cinch	<b>IM CLOCK</b>	I <sup>2</sup> C Bus -Clock
<b>FBAS MAC</b>	FBAS-D2 MAC / D2MAC CCVS signal / Signal vidéo composite-D2MAC / FBAS-D2MAC / FBAS-D2MAC	<b>IM IDENT</b>	I <sup>2</sup> C Bus -Kennung / I <sup>2</sup> C-Bus Identification / Identification I <sup>2</sup> C-Bus / Ident. I <sup>2</sup> C-Bus, Identification I <sup>2</sup> C-Bus
<b>FBAS TON</b>	Basisband / Baseband / Bande de base / Banda base / Banda base	<b>IM RESET</b>	I <sup>2</sup> C Bus -Reset
<b>FBAS TXT</b>	FBAS-Videotext / CCVS videotext / Signal vidéo composite-Télex / FBAS-Teletext / FBAS-Teletext	<b>IR CLK</b>	Infrarot Clock / Infrared clock / Signal I.R. horloge / Clock segnale R.I. / Clock infrarojos
<b>FBAS TEXT</b>		<b>IR DATA</b>	Infrarot Signal / Infrared signal / Signal I.R. / Segnale infrarosso / Data infrarojos
<b>FBAS SYNC.</b>	FBAS Sync. Signal / CCVS sync signal / Signal sync. vidéo col. comp. / Segnal sincr. video col. comp. / Señal sincr. video compuesta	<b>IR VIDEO</b>	Infrarot Signal Video / Infrared signal video / Signal I.R. video / Segnale infrarosso video / Data infrarojos video
<b>FBAS S-VHS</b>	FBAS Signal S-VHS / CCVS signal S-VHS / Signal vidéo col. comp. S-VHS / Segnal video col. comp. S-VHS / Señal video compuesta S-VHS	<b>KB</b>	Keyboard
<b>F H ⚡</b>	Hochspg. / EHT voltage / Haute tens. / Alta tens. / MAT	<b>KH AUDIO-L</b>	Tonsignal Kopfhörer links / Audio signal headphone left / Signal audio gauche de casque / Segnale audio sinistra cuffia / Señal audio izquierda auriculares
<b>FRM</b>	Rahmensignal / Frame signal / Signal d'encadrement / Segnale cornice / Señal de marco	<b>KH AUDIO-R</b>	Tonsignal Kopfhörer rechts / Audio signal headphone right / Signal audio droit de casque / Segnale audio sinistra cuffia / Señal audio derecha auriculares
<b>FT</b>	Feinabstimmung / Fine tuning / Reglage fin / Sint. fine / Sint. fina	<b>L</b>	Lautstärke / Volume / Volume / Volume sonore / Volumen
<b>F U</b>	FU-Signal / FU-signal / Signal FU / Segnale FU / Senal FU	<b>LED</b>	Leuchtdiode / Light emitting diode / Diode lumineuse / Diodo luminoso / Diodo luminescente
<b>F V</b>	FV-Signal / FV-signal / Signal FV / Segnale FV / Senal FV	<b>M</b>	Speicher Taste / Memory button / Touche mémoire / Tasto di memoria / Puls. memoria
<b>G</b>	Grün-Signal / Green signal / Signal green external / Signal vert / Segnale verde / Señal verde	<b>MEGA LOGIC</b>	Megalogic Daten / Megalogic data / Megalogic dates / Dati Megalogic / Megalogic datas
<b>G OSD</b>	OSD-Einblendung grün / OSD green / Eblouissement OSD vert / Visualizzazione OSD verde / Visualisacione OSD verde	<b>MODE</b>	Modus / Mode / Mode / Modo / Modo
<b>G PIP</b>	Grün-Signal PIP / Green signal PIP / Signal green PIP / Signal vert PIP / Segnale verde PIP / Señal verde PIP	<b>NIC CLK</b>	NICAM Clock / Clock NICAM / Horloge NICAM / Clock NICAM / Clock NICAM
<b>G EXT</b>	Grün-Signal extern / Green signal vertical / Signal vert externe / Segnale verde esterno / Señal verde externa	<b>NORM</b>	Norm Taste / TV standard select button / touche de norme / Tasto norma / Puls. de norma
<b>G/50</b>	Grün-Signal - 50Hz vert., 15625Hz hor. / Green signal - 50Hz vert., 15625Hz hor. / Signal vert - 50Hz vert., 15625Hz hor. / Segnale verde - 50Hz vert., 15625Hz hor. / Señal verde - 50Hz vert., 15625Hz hor.	<b>OWA</b>	Ost-West Ansteuerimpuls / East-west drive impuls / Impulsion de commande Est-Ouest / Impulso comando Est-Ovest / Impulso de control Este-Oeste
<b>G/100</b>	Grün-Signal - 100Hz vert., 31250Hz hor. / Green signal - 100Hz vert., 31250Hz hor. / Signal vert - 100Hz vert., 31250Hz hor. / Segnale verde - 100Hz vert., 31250Hz hor. / Señal verde - 100Hz vert., 31250Hz hor.	<b>P</b>	Programm / Program / Programme / Programma / Programa
<b>GND - H</b>	Nullpunkt Heizung / Ground filament / Point neutre-Chauffage / Punto zero-Filamento / Punto medio filamento	<b>P/C</b>	Programm-Kanalwahl / Program channel selection / Progr. sélection de canaux / Progr. selez.canale / Progr. selec. canal
<b>HA</b>	Horiz. Sync. Impuls / Horiz. Sync pulse / Impulsion synchro. horiz. / Impulso sincro orizzontale / Impulso de sinc. horiz.	<b>PIP</b>	Bild im Bild / Picture in picture / Image dans l'image / PIP / Imagen en la imagen
<b>HDR</b>	Horiz. Ansteuerimpuls / Horiz. drive pulse / Impulsion de commande horiz. / Impulso comando orizzontale / Impulso de control horiz.	<b>P1</b>	Progr. Taste / Progr. button / Touche Progr. / Tasto Progr. / Puls. Progr.
<b>HC</b>	Horiz. Klemmimpuls / Horiz. clamp pulse / Impulsion de serrage horiz. / Impulso comando orizzontale / Impulso de garras horiz.	<b>R</b>	Rot-Signal / Red signal / Signal rouge / Segnale rosso / Señal rojo
<b>H SYNC</b>	Horizontaler Sync-Impuls / Horizontal Sync impuls / Sync impuls horizontale / Sinc impulso orizzontale / Impulso sync horizontal	<b>REMOTE</b>	Fernbedienung / Remote control / Telecommande / Telecomando / Mando a distancia
<b>HFB</b>	Horiz. Rückschlagimpuls / Horiz. flyback / Impulsion de retour horiz. / Impulso ritorno orizzontale / Impulso de retroceso horiz.	<b>R OSD</b>	OSD-Einblendung rot / OSD red / Eblouissement OSD rouge / Visualizzazione OSD rosso / Visualisacione OSD rojo
<b>HS</b>	Hor. Sync. Impuls für VT / Hor. sync pulse for TT / Imp. de sync. hor. pour TXT / Imp. sincr. orizz. per Teletext / Imp. hor. para Video Comp.	<b>R PIP</b>	Rot-Signal PIP / Red signal PIP / Signal rouge PIP / Segnale rosso PIP / Señal rojo PIP
<b>I2S CL</b>	Digitale Datensignale / Digital data signals / Signal donnéé digital / Segnali dati digitali / Señal datos digital	<b>R EXT</b>	Rot-Signal extern / Signal red external / Signal rouge externe / Segnale rosso esterno / Señal rojo externa
<b>I2S TER</b>		<b>R-Y / 50</b>	R-Y -Signal - 50Hz vert., 15625Hz hor. / R-Y -Signal - 50Hz vert., 15625Hz hor. / Signal R-Y - 50Hz vert., 15625Hz hor. / Segnale R-Y - 50Hz vert., 15625Hz hor. / Señal R-Y - 50Hz vert., 15625Hz hor.
<b>I2S IN</b>		<b>R-Y / 100</b>	R-Y -Signal - 100Hz vert., 31250Hz hor. / R-Y -Signal - 100Hz vert., 31250Hz hor. / Signal R-Y - 100Hz vert., 31250Hz hor. / Segnale R-Y - 100Hz vert., 31250Hz hor. / Señal R-Y - 100Hz vert., 31250Hz hor.
<b>I2S WS</b>		<b>S</b>	Sonderkanal / Special channel / Canal special / Canale speciale / Canal especial
<b>I BEAM</b>	Strahlstrom / Current beam / Current rayon / Corrente del irradiare / Corriente de haz		
<b>ICL</b>	I <sup>2</sup> C Bus -Clock		

<b>SB</b>	Strahlstrombegrenzung / Beam current lim. / Lim. cour. de faisceau / Lim. corr. di raggio / Corriente media de haz	<b>VIDEO</b>	Video Signal / Video signal / Signal vidéo / Segnale video / Señal video
<b>SCL</b>	I <sup>2</sup> C-Bus Clock	<b>VT DATA</b>	Videotext Daten / Teletext data / Données Teletexte / Linea dati Teletexto / Data Teletexto
<b>SCL 100</b>	Schneller I <sup>2</sup> C-Bus Clock / I <sup>2</sup> C-Bus clock high speed / I <sup>2</sup> C-Bus grande vitesse / I <sup>2</sup> C-Bus veloce / Clock del I <sup>2</sup> C-Bus de alta velocidad	<b>VT SCL</b>	Videotext Clock / Teletext clock / Signal horloge Vidéotext / Clock Teletexto / Clock Teletexto
<b>SDA</b>	I <sup>2</sup> C-Bus Daten / I <sup>2</sup> C-Bus data / I <sup>2</sup> C-Bus données / I <sup>2</sup> C-Bus dati / I <sup>2</sup> C-Bus datos	<b>VT SDA</b>	I <sup>2</sup> C Bus: VT Daten / Teletext data / Données Vidéotext / Dati Teletexto / Data Teletexto
<b>SHIFT VIDEO</b>	Dynamische vert. Versch. 25Hz, aktiv bei Video u. Mix Betrieb / Dynam. vert. shift 25Hz, active on video and mix operation / Decal dynam. de l'image 25Hz, actif sur video et fonction. mixte / Spostam. vert. dinam. 25Hz, attivo con video e. funzionam. misto / Desplaz. dinamico vert. 25Hz, activo con video Y funciones mixtas	<b>V SYNC</b>	Vertikaler Sync-Impuls / Vertical Sync impuls / Sync impuls vertical / Sinc impulso vertical / Impulso sync vertical
<b>SHIFT TEXT</b>	Dynamische vert. Versch. 25Hz, aktiv bei Standbild u. VT / Dyn. vert. shift 25Hz, active on freeze-frame and Teletext / Decal dynam. de l'image 25Hz, actif sur arret image et Vidéotext (Antiope) / Spostam. vert. dinam. 25Hz, attivo con fermo immag. e Teletexto / Desplaz. dinamico vert. 25Hz, activo con imagen parada Y Videotexto	<b>Y</b>	Y-Signal / Y Signal / Signal Y / Segnale Y / Señal Y
<b>SS</b>	Schutzschaltung / Protection circuit / Cablage protecteur / Pot. de prot. / Circuito de proteccion	<b>Y / 50</b>	Y-Signal - 50Hz vert., 15625Hz hor. / Y-Signal - 50Hz vert., 15625Hz hor. / Signal Y - 50Hz vert., 15625Hz hor. / Segnale Y - 50Hz vert., 15625Hz hor. / Señal Y - 50Hz vert., 15625Hz hor.
<b>SSB</b>	Spitzenstrahlstrombegrenzung / Peak beam current limiting / Lim. de faisceau crete / Lim. corr. catod. di pico / Corrente pico de haz	<b>Y / 100</b>	Y - Signal - 100Hz vert., 31250Hz hor. / Y -Signal - 100Hz vert., 31250Hz hor. / Signal Y - 100Hz vert., 31250Hz hor. / Segnale Y - 100Hz vert., 31250Hz hor. / Señal Y - 100Hz vert., 31250Hz hor.
<b>SSC</b>	Supersandcastle	<b>ZF</b>	Zwischenfrequenz / IF / FI / FI / FI
<b>SSC PIP</b>	Supersandcastle PIP	<b>U ↓ AFC</b>	Schaltspg. AFC / AFC switching volt. / Tens. de commut. AFC / Tens. di commut. AFC / Tens. conmut. CAF
<b>SSC / 100</b>	Supersandcastle 100Hz vert., 31250Hz hor.	<b>U ↓ AV</b>	Schaltspg. AV / Switching volt. AV / Tens. de commut. AV / Tens. di commut. AV / Tens. conmut. AV
<b>SSC / 50</b>	Supersandcastle 50Hz vert., 15625Hz hor.	<b>U ↓ B1</b>	Schaltspg. Band 1 / Switching volt. band 1 / Tens. de commut. bande 1 / Tens. di commut. banda 1 / Tens. conmut. de banda 1
<b>SUR-ROUND</b>	Surround	<b>U ↓ B2</b>	Schaltspg. Band 3 / Switching volt. band 3 / Tens. de commut. bande 3 / Tens. di commut. banda 3 / Tens. conmut. de banda 3
<b>SYNC</b>	Sync.-Signal / Sync.-Signal / Signal sync / Segnale sync. / Señal de sync.	<b>U ↓ BA</b>	Schaltspg. Bildamplitude / Switching voltage vertical amplitude / Tension de coupure amplitude d'image / Tensione di commutaz. ampiezza d'immagine / Tension de comm. amplitude de imagen di commut. PAL / Tens. conmut. PAL
<b>SYNC. BTX</b>	Sync. BTX / Viewdata Sync / Sync. Télétext / Sincr. Videotel / Sincr. Videotexto	<b>U ↓ BTX</b>	Schaltspg. BTX / Switching volt. BTX (Viewdata) / Tens. commut. Télétext / Tens. commut. VIDEOTEL / Tens. conmut. Teletexto
<b>SYNC. VT</b>	Sync. VT / Sync. Teletext / Sync Vidéotexte / Sincr. Televideo / Sincr. Videotexto	<b>U ↓ C-AV</b>	Schaltspg. Camera Wiederg. über Camera-AV Eingang / Switching volt. cam. playback via Camera-AV input / Tens de commut pour lec. de camera par l'entree Camera-AV / Tens. de commut. in riproduz. camera tramite ingresso Camera-AV / Tens. de serv. reprod. camera a traves de la entrada Camera-AV
<b>SW</b>	Schwarzwert / Black level / Niveau du noir / Livello del nero / Nivel de negro	<b>U ↓ DATA</b>	Schaltspg. Datenbetr. / Switching volt. data mode / Tens. de commut. fonct. données / Tens. di commut. dati / Tens conmut. datos
<b>TE</b>	TEXT-Freigabe / TEXT enable / Autorisation TEXTE / Abilitaz. TELEVIDEO / Habilitation TEXTE	<b>U ↓ DATA EXT</b>	Schaltspg. U Data extern / Switching volt Data ext. / Tension de commutation U Data externe / Tens. di commutazione U-Data esterno / Tensión de conmutación externa U
<b>T1</b>	Bei Zweitton, Ton 1 / On two channel sound, sound 1 / Pour double son, son 1 / In bicanale, audio 1 / En dual, sonido 1	<b>U ↓ DATA OSD</b>	Schaltspg. für Bildschirm-Einblendung / Switching volt. for On Screen Display / Tens. commut. pour eblouissement On Screen Display / Tens. commut. per di visualizzazione On Screen Display / Tens. conmut. para On Screen Display
<b>T2</b>	Bei Zweitton, Ton 2 / On two channel sound, sound 2 / Pour double son, son 2 / In bicanale, audio 2 / En dual, sonido 2	<b>U ↓ DEEM</b>	Schaltspg. Deemphasis / Switching volt. deemphasis / Tens. commut. desaccent. / Tens. commut. deenfasi / Tens. conmut. deenfasis
<b>TT</b>	Tieftöner / Woofer / Haut-parleur pour les frequences basses / Toni bassi / Sonido bajo	<b>U ↓ DS</b>	Schaltspg. Dolby-Surround / Switching volt. Dolby-Surround / Tens. commut. Dolby-Surround / Tens. commut. di Dolby-Surround / Tens. de commut. Dolby-Surround
<b>U FOC</b>	Fokusspg. / Focussing volt. / Tens. de focalis. / Tens di focalizz. / Tens focalizacion	<b>U ↓ EURO-AV</b>	Schaltspg. EURO-AV / Switching volt. EURO-AV / Tens. de commut. EURO-AV / Tens. di commut. EURO-AV / Tens. conmut. EURO-AV
<b>U G1</b>	Spg. Gitter G 1 / Volt. grid G 1 / Tens grille G 1 / Tens. griglia G1 / Tens. rejillas G 1	<b>U ↓ EU-AV CINCH</b>	Schaltspg. EURO-AV-Cinch-Buchse / Switching volt. EURO-AV-Cinch socket / Tens. commut. prise Scart - Cinch / Tens. commut. presa Scart -Cinch / Tens. conmut. EURO-AV - Cinch
<b>U H</b>	Hochspannung / High voltage / Haute tension / EAT / Alte tension	<b>U ↓ FBAS</b>	Schaltspannung für Video-Ausgang EURO-AV Buchse / Switch. voltage for video output EURO-AV socket / Tension de commut. pour sortie vidéo EURO-AV / Tension commut. per presa d'uscita video EURO-AV / Tension de commut. para salida EURO-AV
<b>U G2</b>	Schirmgitter Spg. / Screen-grid volt. / Tens. de grille - écran / Tens. di griglia schermo / Tens. de rejilla	<b>U ↓ HIFI</b>	Schaltspg. HiFi / Switching voltage HiFi / Tens. de commut. HiFi / Tens di commut. HiFi / Tens. conmut. HiFi
<b>VA</b>	Vertikaler Ansteuerimpuls / Vert. drive pulse / Impulsion de commande verticale / Impulso di comando verticale / Impulso de control vertical	<b>U ↓ HIFI MUTE</b>	Stummschaltung HiFi / Muting volt. HiFi / Commutation de silence HiFi / Silenzametno HiFi / Muting HiFi
<b>VB</b>		<b>U ↓ HUB</b>	Schaltspg. HUB / Switching volt. deviation / Tens. commut. déviation / Tens. commut. deviazione / Tens. conmut. deviacion
<b>VCL</b>	VCR - Clock		
<b>VDR</b>	Freigabe Anzeigebaustein / Display enable / Autorisation pour module indicateur / Modulo indicazione / Habilitacion modulo indicacion		
<b>VG</b>	Vert. Gegenkopplung / Vert. feedback / Contre-reaction verticale / Controreazione vert. / Aliment. neg. vert.		

	Schaltpsg. Signalkennung AV 3 / Switching volt. signal identification AV 3 / Tens. de commut. identification de signal AV3 / Tens. commut. identificazione segnale / Tens. commut. identif. señañ AV3		Schaltpsg. Wischerkontakt / Switching voltage temp. contact / Tens. de commut. contact fugitif / Tens. commut. contatto temporaneo / Contacto supresor tens. de commut.
	Stummschaltung Kopfhörer / Muting volt. headphone / Commutation de silence casque / Silenzamento cuffia / Muting auriculares		Schaltpsg. ZF breit - schmal / IF switching volt. wide - narrow / Tens. commut. FI large - étroit / Tens. commut. FI larga - stretta / Tens. FI ancho - estrecho
	Gleichspannung für SAT-Basissignal / DC for SAT basic signal / Tens. continue pour SAT base signal / Tens. continua per segnale SAT base / Tens. continua para señañ SAT base		Schaltpsg. Bandwahl / Band sel. switching volt. / Tens. de commut. select. bande / Tens. di commut. selez. banda / Tens. commut. selec. banda
	Schaltpsg. Koinz. / Switching volt. coinc. / Tens. de commut. coinc. / Tens. di commut. coinc. / Tens. commut. coinc.		14V Schaltpsg. / 14V switching volt. / Tens. commut. 14V / Tens. commut. 14V / Tens. de comm. 14V
	Schaltpsg. Koinz. mit Videoquelle verknüpft / Coinc. switching volt. linked with video source / Signal de coincid. combiné avec source video / Tens. di commut. a coinc. combinata con sorg video señañ de coincidencia combinada con video		22kHz Schaltpsg. / 22kHz switching volt. / Tens. commut. 22kHz / Tens. commut. 22kHz / Tens. de comm. 22kHz
	Schaltpsg. LED / Switching volt. LED / Tens. de commut. LED / Tens. commut. LED / Commut. LED		0/3/6/9V Schaltpsg. / 0/3/6/9V switching volt. / Tens. commut. 0/3/6/9V / Tens. commut. 0/3/6/9V / Tens. de comm. 0/3/6/9V
	Schaltpsg. Leuchtpunktunterdrückung / Switching volt. beam spot suppression / Tens. de commut. suppress. du spot lumineux / Tens. soppr. punto luminoso / Tens. de commut. filtro supresor del punto luz		Schaltpsg. 4,5MHz / Switching volt. 4.5MHz / Tens. de commut. 4,5MHz / Tens. di commut. 4,5MHz / Tens. commut. 4,5MHz
	Schaltpsg. LNC "Aus" / Switching volt. LNC "OFF" / Tens. de commut. LNC "OFF" / Tensione di commut. "Spento" LNC / Tension LNC "OFF"		Schaltpsg. 50-60Hz / Switching volt. 50-60Hz / tens. de commut. 50-60Hz / Tens. di commut. 50-60Hz / Tens. commut. 50-60Hz
	Schaltpsg. D2MAC / Switching volt. D2MAC / Tension de commutation D2MAC / Tens. di commutazione D2MAC / Tensión de conmutación D2MAC		Regelspg. AFC / AFC contr. volt. / Tens. de regul. AFC / Tens. di contr. AFC / Tens. regul. CAF
	Stummschaltung / Muting / Silencieux / Silenziamento / Muting		Regelspg. AFC Satellitentuner / AFC contr. volt. SAT tuner / Tens. de regul. AFC tuner SAT / Tens. di contr. AFC Tuner SAT / Tens. regul. CAF Tuner SAT
	Schaltpsg. NF 1 / Switching volt. AF 1 / Tension commut. BF 1 / Tens. commut BF 1 / Tens. comm. BF 1		Feldstärkeabhängige Spg. / Fieldstrength-depent volt. / Contr. automatique de gain / Tens. dipent. intens. campo / Contr. autom. de gain tens. CAG
	Schaltpsg. NF 2 / Switching volt. AF 2 / Tension commut. BF 2 / Tens. commut BF 2 / Tens. comm. BF 2		Regelspg. / Contr. volt. / Tens. de regul. / Tens. di contr. / Tens. regul.
	Schaltpsg. NICAM / Switching volt. NICAM / Tens. de commut. NICAM / Tens. commut. NICAM / Tens. de commut. NICAM		Abstimmspg. Tuner / Tuning volt. tuner / Tens. d'accord tuner / Tens. di sintonia tuner / Tens. sintonia tuner
	Schaltpsg. Norm / Switching volt. Norm / Tens. de commut. standard / Tens. di commut. Norma / Tens. commut. Norma		Regelspg. Verzög. / Delayed contr. volt. / Tens. de regul. retardee / Tens. regul. retardada
	Schaltpsg. PAL / Switching volt. PAL / Tens. de commut. PAL / Tens. di commut. PAL / Tens. commut. PAL		Horizontale Ansteuerung / Horiz. drive / Synchr. lignes / Pilotaggio orizz. / Exitación horiz.
	Schaltpsg. Polarität / Switching volt. polarity / Tension commut. polarite / Tens. commut. polarita / Tens. commut. polarizacion		31250Hz Ansteuerimp. für Zeilenendstufe / 31250Hz Triggering pulse for horiz. output / 31250Hz commande pour l'étage final lignes / Imp. Pilotaggio di 31250Hz per stadio finale di riga / Impulso de exitación 31250Hz para paso final de lineas
	Schaltpsg. Ökoschalter / Switching volt. eco switch / Tens. de commut. interr. eco. / Tens. commut. interr. ecologico / Tens. commut. interr. ecol.		Vert. Parabel / Vert. parabolic signal / Signal parabolique vert. / Segnale parab. vert. / Senal parabolica vert.
	Schaltpsg. Panorama View / Switching volt. Panorama View / Tens. de commut. Panorama View / Tens. commut. Panorama View / Tens. commut. Panorama View		Vert. Tastimpuls / Vert. Gating pulse / Imp. trame / Imp. a cadenza vert. / Imp. cuadro
	Schaltpsg. Reset / Switching volt. Reset / Tens. commut. Reset / Tens. commut. Reset / Tens. commut. Reset		Vert. Tastimpuls 100Hz / Vert. Gating pulse 100Hz / Imp. trame 100Hz / Imp. a cadenza vert. 100Hz / Imp. cuadro 100Hz
	Schaltpsg. RGB1 - RGB2 / Switching volt. RGB1 - RGB2 / Tens. de commut. RGB1 - RGB2 / Tens. di commut. RGB1 - RGB2 / Tens. commut. RGB1 - RGB2		Vert. Sägezahn / Vert. saw tooth / Signal dent de scie / Dente di sega vert. / Dientede sierra vert.
	Schaltpsg.-Schutzfunktion / Switching volt.-protective func. / Tens. de commut.-sécurité / Tens. di commut.-funz di protez. / Tens. commut.-proteccion		Vert. Sägezahn 100Hz / Vert. saw tooth 100Hz / Signal dent de scie 100Hz / Dente di sega vert. 100Hz / Dientede sierra vert. 100Hz
	Schaltpsg. SECAM / Switching volt. SECAM / Tens. de commut. SECAM / Tens. di commut. SECAM / Tens. comm. SECAM		Vert. Parabel 100Hz / Vert. parabolic 100Hz signal / Signal parabolique 100Hz vert. / Segnale parab. vert. 100Hz / Senal parabolica vert. 100Hz
	Schaltpsg. Standby / Switching volt. Standby / Tens. commut. Veille / Tens. commut. Standby / Tens. commut. Standby		Tastimpuls / Gating pulse / Impuls de declenchement / Impulso a cadenza / Imp. puerta
	Schaltpsg. S-VHS / Switching volt. S-VHS / Tens. de commut. S-VHS / Tens. de commut. S-VHS / Tens. de commut. S-VHS		Ref. Impuls hor. / Reference impulse hor. / Imp. de refer. hor. / Imp. di rifer. hor. / Imp. refer. horiz.
	Schaltpsg. Ton 1-2 / Switching volt. sound 1-2 / Tens. commut. audio 1-2 / Tens. commut. son 1-2 / Tens. commut. son 1-2		Klemmung Ein-Aus / Clamping On-Off / Clampage Marche-Arrêt / Clamping Ins.-Disins. / Clamping Enc.-Apag.
	Schaltpsg. UHF / UHF switching volt. / Tens. de commut. UHF / Tens. di commut. UHF / Tens. commut. UHF		Pulse für Polarrotor / Pulses for Polar-Rotor / Impulsions Rotor de Polarisation / Impulsi per Rotore Polarizzazione / Impulsos dara Polarrotor
	Schaltpsg. VHF / VHF switching volt. / Tens. de commut. VHF / Tens. di commut. VHF / Tens. commut. VHF		O-W Amplitude / E-W amplitude / Amplitude E-O / Ampiezza E-O / Amplitud E-O
	Schaltpsg. Videoquelle / Switching volt. video source / Tens. de commut. source video / Tens. di commut. sorg. video / Tens. commut. video		

## Hinweise zu den Oszillogrammen / Hints to the Oscillograms / Note relative agli Oscillogr./ Indicazioni pour les Oscillogrammes / Observaciones con respecto a los Oscilogramas



Die Spannungswerte an den Oszillogrammen entsprechen Näherungswerten!  
The voltages indicated in the oscillograms are approximates!

I valori delle tensioni indicati sugli oscillogrammi sono approssimativi!

Les valeurs de tension indiquées pour les oscillogrammes sont des valeurs approxi-  
matives!

Los valores de tensión en los oscilogramas son aproximados!



... V

Gleichspannungswert / DC voltage / Valore tensione continua / Tension continue / Valor de tensión continua

... V<sub>ss</sub>

Spitze-Spitze - Wert / Peak to peak value / Valore picco-picco / Crête-crête / Valor pico a pico

... ms/cm

Zeitbasis des Oszilloskops / Time base of the oscilloscope / Base del tempo dell'oscilloscopio / Base de temps de l'oscilloscope/ Base de tiempo del osciloscopio

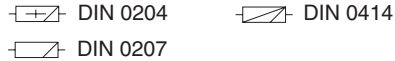
... Hz

Frequenz / Frequency / Frequenza / Fréquence / Frecuencia

## Hinweise zu den Bauteilen / Hints to Components / Istruzioni sui Componenti / Observaciones sobre los Componentes / Precautions a observer

### Metallschichtwiderstände

Metal film resistors  
Resistenza a strato metallico  
Resistencia de capa metálica  
Film métallique



### Kohleschichtwiderstände

Carbon film resistors  
Resistenza a strato di carbone  
Resistencia de capa de carbón  
Film carbonique



Metalloxidwiderstand  
Metal oxid resistor  
Resistenza ad ossido metallico  
Resistencia de óxido metálico  
Métaloxide

Schwer entflammbarer Widerstand  
Flame resistant resistor  
Resistenza anti-infiammabile  
Resistencia ininflamable  
Ininflamable



SI-R

Sicherungswiderstand  
Safety resistor

Resistenza di sicurezza

Resistencia con resorte de seguridad  
Rés. fusible



Drahtwiderstand m. Wattangabe  
Wire wound resistor w. wattage  
Resistenza a filo  
Resistencia bobinada (Disipación)  
Bobinée avec ind. puissance



NTC

Heißeleiter / NTC resistor  
Termistore NTC / Resistencia CNT  
Varistor (CTN)



PTC

Kaltleiter / PTC resistor  
Termistore PTC / Resistencia CPT  
Varistor (CTP)



K

Keramikkondensator  
Ceramic capacitor  
Condensatore ceramico  
Condensador cerámico  
Céramique



O

Kondensator, Capacitor  
Condensatore, Condensador  
Condensador, 250 V=



□

Kondensator, Capacitor  
Condensatore, Condensador  
Condensador, 630 V=



+

Elektrolytkondensator  
Electrolytic capacitor  
Condensatore elettrolitico  
Condensador electrolitico  
Electrolytique



T

Tantal-Elektrolytkondensator  
Tantalum electrolytic capacitor  
Condensatore elettro. al tantalio  
Condensador de tantalio  
Tantale



+

bipolarer Elektrolytkondensator  
bipolar electrolytic capacitor  
Condensatore elettrolitico bipolare  
Condensador electrolitico bipolar  
Electrolytique bipolaissé



O

Kondensator, Capacitor  
Condensatore, Condensador  
Condensador, 400 V=



□

Kondensator, Capacitor  
Condensatore, Condensador  
Condensador, 1000 V=

## Service- und Sonderfunktionen

Taste "M" → Aufruf des TV-Menüs oder zurück ins vorherige Menü

Taste "E" → Menüausstieg

Cursertaste △ ▽ Anwählen der Dialogzeile

Cursertaste ◀ ▶ Einstellungen ändern

### 1. Einschaltfunktionen

#### 1.1 Mittelwerte / Notdatensatz laden (ROM-Daten)

Fernbedientaste "P-" gedrückt halten und das Gerät mit dem Netzschalter einschalten. Dadurch wird z. B. nach Austausch des CIC82501 (NVM) das Gerät mit dem Notdatensatz gestartet.

Mit diesem Vorgang werden die Grund-Daten aus dem ROM des Prozessors IC81500 in den NVM CIC82501 kopiert:

CIC82501: (gerätespezifische Daten, über das TV-Menü einstellbar)

- Farb- und Ton-Normen
- Decodereinstellungen
- Umkehrpunkt
- OSD Position
- ATS-Reset
- Hotel-Mode on/off
- AGC und AFC
- Analogwerte (Lautstärke, Helligkeit usw.)
- Bildschärfe
- Security on/off
- Geometrieabgleich
- Programmdatei (Kanal- und Feinabstimmung, Senderkennung)

Danach über das TV-Menü die persönlichen Werte, Bildgeometrie eingeben.

#### 1.2 Kindersicherung Generalaufhebung

Die Zahl "3001" hebt die Sperre dauerhaft auf.

Diese Zahlenkombination ist für die Geheimzahl gesperrt.

#### 1.3 Software -Versionsnummer

"TV-Menü" aufrufen.

Taste "V=" zeigt die Software-Versionsnummer an.

#### 1.4 Einschalten mit dem zuletzt gesehenen Programm

Der beim Ausschalten in Standby eingestellte Programmplatz wird beim Einschalten mit den Tasten "P+/P-" wieder aufgerufen (Last station memory).

### 2. Sonderfunktionen

"TV-Menü" → "Einstellungen" → "Sonderfunktionen".


#### 2.1 Öko-Netzschalter aktivieren bzw. deaktivieren (optional)

Die Dialogzeile "Eco switch" aufrufen.

Einstellungen "1h...3h" oder "aus".

Das Gerät schaltet sich nach der eingestellten Zeit aus.

In Stellung "aus" wird diese Funktion nicht genutzt.

Durch längeren Tastendruck der Taste  in Stellung TV-Ein wird der Netzschalter ausgelöst und schaltet das Gerät komplett ab, diese Funktion wird generell ausgeführt.

#### 2.2 Einblendzeit

Die Dialogzeile "Einblendzeit" aufrufen.

Die Dauer der OSD-Einblendungen ist von 2...9s einstellbar.

#### 2.3 Video AV

Die Dialogzeile "Video AV" aufrufen.

Umschaltbar zwischen "VHS" und "SVHS".

#### 2.4 Farbnorm AV

Die Dialogzeile "Farbnorm AV" aufrufen.

Umschaltbar zwischen "auto", "PAL", "NTSC" und "SECAM".

#### 2.5 Service

Die Dialogzeile "Service" aufrufen.

Mit Taste "OK" Einstieg in das offene Menü.

### 3. Bild-Einstellungen

"TV-Menü" → "Bild".

Folgende Werte sind einstellbar:

Kontrast 0...63

Helligkeit 0...63

Farbe 0...63

Schärfe 0...5

oder

Mit der "roten" Taste "Kontrast" aufrufen.

Mit der "grünen" Taste "Helligkeit" aufrufen.

Mit der "blauen" Taste "Farbe" aufrufen.

Die Analogwerte werden beim Verlassen des Menüs automatisch gespeichert.

### 4. Ton-Einstellungen

"TV-Menü" → "Ton".

#### 4.1 Maximale Lautstärke

Sie können die maximale Lautstärke einstellen.

Dieser Wert gilt auch für Kopfhörer.

#### 4.2 AVC (Automatic Volume Control)

In Stellung "ein" wird bei großen Senderhuben die Lautstärke automatisch an den normalen Hub angepasst.

### 5. Programme im TV-Menü

"TV-Menü" → "Programme".

#### 5.1 Automatisch suchen.

Wählbar ab welchem Programmplatz, für welchen Standort (Land) die automatische Speicherung beginnen soll.

#### 5.2 Manuell einstellen

Manuelle Eingabe von Programm, Bereich, Kanal, Fein, Name und AV-Eingang.

#### 5.2.1 Maximale Programmnummer (Umkehrpunkt)

"Manuell einstellen" aufrufen.

Programmnummer aufrufen, ab der die Programmplätze gesperrt werden sollen. In der Dialogzeile Kanal "C 00" einstellen. Mit "roter" Taste speichern. Danach können im Programm-Mode mit den Tasten "P+/P-" die nachfolgenden Programme nur bis zu dem mit "C 00" belegten Programmplatz fortgeschaltet werden.

#### 5.2.2 AV-Eingang

"Manuell einstellen" aufrufen.

AV-Eingang auf aus/ein stellen.

#### 5.3 Sortieren/löschen

Sortieren und löschen der einzelnen Programmplätze.

#### 5.4 Name eingeben/ändern

Eingeben oder ändern des Sendernamens.

### 6. Offene Service-Einstellungen

"TV-Menü" → "Einstellungen" → "Sonderfunktionen" → "Service".

#### 6.1 TV-Programmer

Einstellbar "aus", "TV >> Ext", "Ext >> TV".

Ext >> TV Programmdateien werden zum TV-Gerät übertragen und das TV-Gerät programmiert.

TV >> Ext Programmplatzbezogene Daten vom TV-Gerät werden zum Programmer übertragen und dort gespeichert.

Durch Drücken der Taste "OK" werden obengenannte Funktionen gestartet.

Nach Beendigung der Übertragung wird im OSD "OK" angezeigt.

Bei fehlerhafter Übertragung erscheint die Meldung "Error".

#### 6.2 VT-Sprachgruppe

Auswahl zwischen West/East und West/TR

#### 6.3 Schwarz. Bildschirm

Auswahl zwischen "ein" und "aus".

#### 6.4 Service Code (Händlermenü)

Durch die Eingabe der Zahlen 8640 gelangen sie ins Service-Menü.

## 7. Service-Einstellungen für den Fachhandel (Händlermenü)

"TV-Menü" -> "Einstellungen" -> "Sonderfunktionen" -> "Service" -> "Service Code" -> Kennziffer "8640".

### 7.1 Service-Menü

Nach Eingabe der Codezahl "8640" kann der Fachhändler den Geräteabgleich laut Menüführung durchführen für:

- GEOMETRIE
- WHITE ADJUSTMENT
- AGC
- AFC 38.9 MHz
- OSD horizontal
- OSD vertical
- RC5 Code
- Initial Mode
- Hotel/Hosp.
- Alarm prog.

**Abgleich:** Seite 2-1

### 7.2 OSD-Lage

Horizontale oder vertikale Lage des Einblend-Menüs verschieben und Dialogzeile "End" mit "with mem" beenden.

### 7.3 RC5 Code

Optionale Einstellungen der Fernbedienebenen.

Standardeinstellung "0".

Dialogzeile "End" mit "with mem" beenden.

### 7.4 Hotel-Mode

#### 7.4.1 Hotel-Mode aktivieren

Verdeckte Funktion, in keiner Dialogzeile sichtbar.

"Initial mode" anwählen und Kennziffer 8640 eingeben "Initial mode" wird rot angezeigt.

Nach Speicherung der Dialogzeile End mit "with mem" ist der Hotel-Mode aktiv.

Bei aktiviertem "Hotel-Mode" ist:

- die zuletzt eingestellte Lautstärke im Tonmenü die maximale Lautstärke die gespeichert wird.

#### 7.4.2 Hotel-Mode deaktivieren

Fernbedientaste "i" gedrückt halten und das Gerät mit dem Netzschalter einschalten.

"Initial mode" anwählen und Kennziffer 8640 eingeben "Initial mode" wird schwarz angezeigt.

### 7.5 Hotel / Hosp.

Bei Geräten mit Hotel bzw. Hospital-Karte auf "on" stellen.

Zum Zurücksetzen die Fernbedientaste "i" gedrückt halten und das Gerät mit dem Netzschalter einschalten.

### 7.6 Initial Mode

Durch Drücken der Taste "OK" wird das TV-Gerät in den Fabrik-Auslieferungszustand versetzt.

### 7.7 Alarm prog.

Einstellbar mit welchem Programm beim Wecken eingeschaltet wird. Standardeinstellung "1".

### 7.8 Display-Test

Durch Drücken der "roten" Taste wird die komplette Anzeigeeinheit des Clock-Moduls aktiviert (ausgenommen ist die Message-LED).

Damit ist eine Funktionsprüfung aller Anzeigeelemente und der Weckfunktion über Lautsprecher (ca. 2kHz-Ton) möglich.

## 8. Schutzschaltungen deaktivieren

- Horizontal- und Vertikal-Schutzschaltung:  
Basis und Emitter des CT50055 verbinden.
- Horizontal- Schutzschaltung:  
Basis und Kollektor des CT57113 verbinden.
- Vertikal- Schutzschaltung: C50052 kurzschließen.

**Achtung:** Nach beendeter Reparatur Schutzschaltungen unbedingt aktivieren.

## Service and Special Functions

"M" button → Call up "TV-menu" or go back to previous menu.

"E" button → Exit menu.

Cursor buttons  $\triangle$   $\nabla$  → Select dialogue line.

Cursor buttons  $\triangleleft$   $\triangleright$  → Change setting.

### 1. Switching-on Options

#### 1.1 Loading the Average Values / Emergency Data Set (ROM Data)

Press and hold down the "P-" button on the remote control and switch on with the mains button. After replacement of CIC82501 (NVM), for example, the TV set is started with the emergency data set.

In doing so, the basic data is read out from the ROM of processor IC81500 and loaded into the NVM CIC82501:

CIC82501: (data specific to the TV can be set via the TV Menu):

- chroma and audio standards
- decoder settings
- reversing point
- OSD position
- ATS reset
- Hotel mode on/off
- AGC and AFC
- analog values (volume, brightness etc.)
- picture sharpness
- security on/off
- geometry adjustment
- programme data (channel and finetuning, station ident)

Subsequently enter your personal values, picture geometry via the TV Menu.

#### 1.2 Cancelling the Parental Lock Continuously

To cancel the parental lock, enter the number **3001**.

This number is locked for the code number.

#### 1.3 Software Version Number

Call up the "TV-menu".

Pressing the "V=" button displays the software version number.

#### 1.4 Switching on with the Last Viewed Programme.

The channel position which has been selected when switching off to standby is recovered when switching on again with the buttons "P+/P-" (last station memory).

### 2. Special Functions

"TV-menu" → "Settings" → "Special functions".

#### 2.1 Activating or Deactivating the Economy Mains Switch (option)

Select the "Eco switch" dialogue line.

Select the setting "1h...3h" or "off".

The TV receiver switches off at the predetermined time.

With the "off" setting, this function is not used.

By pressing the mains button  $\odot$  a longer time with the TV on, the mains switch is released and switches the TV set completely off. This function is carried out in a general way.

#### 2.2 Display Time

Select the "Display time" dialogue line.

The duration of the OSD display can be set between 2...9s.

#### 2.3 Video AV

Select the "Video AV" dialogue line.

The setting "VHS" or "SVHS" can be selected.

#### 2.4 Colour AV

Select the "Colour AV" dialogue line.

The settings "auto", "PAL", "NTSC" and "SECAM" can be selected.

#### 2.5 Service

Select the "Service" dialogue line.

Press the "OK" button to access the open menu.

### 3. Picture Settings

"TV Menu" → "Picture".

The following settings are possible:

Contrast	0...63
Brightness	0...63
Color	0...63
Sharpness	0...5

or:

press the "red" button to select "Contrast",  
press the "green" button to select "Brightness",  
press the "blue" button to select "Colour".

When exiting the menu, the analog values are automatically saved.

### 4. Sound Settings

"TV Menu" → "Sound".

#### 4.1 Max. volume

You can set the maximum volume.

This setting applies also for the headphones.

#### 4.2 AVC (Automatic Volume Control)

With the "on" setting selected, the volume is automatically adjusted to the normal amplitude when high volume amplitudes are received.

### 5. Programs in the TV Menu

"TV Menu" → "Programs".

#### 5.1 Automatic Search

You can select from what programme position and for what place of installation (country) the automatic saving is to be started.

#### 5.2 Manual Adjustment

Manual entry of Program, Range, Channel, Fine, Name, and AV input.

##### 5.2.1 Maximum Programme Number (Reversing Point)

Select "Manual adjustment".

Select the programme number which is to be the highest selectable programme position. Select "C 00" in the Channel dialogue line. Press the "red" button to save the setting. When this is done, only the programme positions up to the position "C00" can be selected using the "P+/P-" buttons in programme mode.

##### 5.2.2 AV Input

Select "Manual adjustment".

Set the AV input to "on" or "off".

#### 5.3 Sort/Delete

With this function you can sort or delete individual programme positions.

#### 5.4 Enter/Change Name

With this function you can enter or change the station name.

### 6. Open Service Settings

"TV Menu" → "Settings" → "Special Functions" → "Service".

#### 6.1 TV-Programmer

The settings "off", "TV >> Ext", "Ext >> TV" can be selected.

Ext >> TV The Programmer data is transferred to the TV set and the TV set is programmed.

TV >> Ext Programme position specific data is transferred from the TV set to the Programmer and stored there.

Pressing the "OK" button starts the above functions.

When the data transfer is completed, "OK" is displayed on the screen.

In the event of a faulty transfer, "Error" is displayed.

#### 6.2 Teletext Language

You can select between West/East and West/TR

#### 6.3 Black Screen

You can select between "on" and "off".

#### 6.4 Service Code (for the dealer)

Enter the digits 8640 to access the Service Menu.

## 7. Service Settings for the Dealer

"TV Menu" -> "Settings" -> "Special Functions" -> "Service" -> "Service Code" -> Code number "8640" .

### 7.1 Service Menu

After entering the code number "8640", the dealer can carry out the following alignment functions for the TV set according to the menu guide:

- GEOMETRIE
- WHITE ADJUSTMENT
- AGC
- AFC 38.9 MHz
- OSD horizontal
- OSD vertical
- RC5 Code
- Initial Mode
- Hotel/Hosp.
- Alarm prog.

**Alignment:** page 2-3

### 7.2 OSD Position

With this function, the horizontal or vertical position of the on-screen display can be shifted.

Exit the "End" dialogue line with "with mem" to save the setting.

### 7.3 RC5 Code

Optional settings of the remote control level.

Default setting "0".

Exit the "End" dialogue line with "with mem" to save the setting.

### 7.4 Hotel Mode

#### 7.4.1 Activating the Hotel Mode

This function is shown in no dialogue line (hidden function).

Select "Initial mode" then enter the code number 8640. "Initial mode" is displayed in red.

After exiting the "End" dialogue line with "with mem", the hotel mode is activated.

When "Hotel mode" is activated

- the volume last set in the Sound menu is the maximum volume which can be stored.

#### 7.4.2 Deactivating the Hotel Mode

Press and hold down the "i" button on the remote control while switching the TV set on with the mains switch.

Select "Initial mode" then enter the code number 8640. "Initial mode" is displayed in black.

### 7.5 Hotel / Hosp.

On units with hotel or hospital card, select the „on“ setting.

To reset press and hold down the remote control button "i" while switching the unit on with the mains switch.

### 7.6 Initial Mode

Pressing the button "OK" will reset the TV set to the factory settings.

### 7.7 Alarm prog.

This function is used to select the programme which is to be switched on with the alarm function.

The standard setting is "1".

### 7.8 Display test

Pressing the „red“ button activates the complete display unit of the Clock module (except the message LED).

This enables a function test of all display elements and of the alarm function via the loudspeakers (tone of about 2kHz).

## 8. Deactivating the Protection Circuits

- Horizontal and vertical protection circuit:  
connect the base and emitter at CT50055.
- Horizontal protection circuit:  
connect the base and collector at CT57113.
- Vertical protection circuit: to short-circuit C50052.

**Attention:** When the repair is completed, it is absolutely necessary to re-activate the overload protection circuits.



## D Abgleich

### Achtung!

1. Abgleich in betriebswarmem Zustand ausführen (ca. 15 Min.).
2. "Sub. Contrast" darf nicht verstellt werden (Fertigungseinstellung).

Alle nicht beschriebenen Einstellelemente sind werkseitig abgeglichen und dürfen im Servicefall nicht verstellt werden.

**Messgeräte:** 100MHz-Oszilloskop mit Tastkopf 10:1, Digitalvoltmeter, Farbbildgenerator.

### Servicearbeiten nach Austausch bzw. Reparatur:

- **Netzteil:** Abgleich 1
- **ZF, Videodemodulator:** Abgleich 2, 3
- **IC34015:** Abgleich 3
- **Bildröhre, Bildrohrplatte:** Abgleich 5...8
- **Ablenkung:** Abgleich 7, 8
- **NVM CIC82501:** Abgleich 2...5 und 8

Taste "M" → Aufruf des TV-Menü oder zurück ins vorherige Menü

Taste "E" → Menüausstieg

Cursertaste  $\triangle$   $\nabla$  Anwählen der Dialogzeile

Cursertaste  $\triangleleft$   $\triangleright$  Einstellungen ändern

Abgleich	Vorbereitung	Abgleichvorgang
1. <b>+A</b> Spannung	Nach jeder Reparatur und vor jedem Abgleich kontrollieren und gegebenenfalls einstellen.  Helligkeit: Minimum Kontrast: Minimum Digitalvoltmeter: Kathode D61016	<b>+A</b> mit <b>R60516</b> nach Tabelle (Seite 3-15) im Teilschaltplan Netzteil einstellen.
2. Tuner-AGC	100MHz-Oszilloskop: Kanal A: Tuner Kontakt 10 oder 11 Masse: Tuner Farbbildgenerator: Farbtreppe (mit abgeschaltetem Tonträger) über die Antenne einspeisen: $\geq 80\text{dB}\mu\text{V}$ .  Dialogzeile "AGC" über "TV-Menü" → "Einstellungen" → "Sonderfunktionen" → "Service" → "Service Code" → Kennziffer "8640" aufrufen.	Mit der Taste $\triangleleft$ oder $\triangleright$ $300\text{mV}_{\text{ss}}$ einstellen.  Dialogzeile "End" mit "with mem" → "OK" beenden.
3. AFC	Farbbildgenerator: Testbild mit genormten Kanalaraster ohne Finetuning im Band 1 (Kanal 2...4) einspeisen.  Dialogzeile "AFC" über "TV-Menü" → "Einstellungen" → "Sonderfunktionen" → "Service" → "Service Code" → Kennziffer "8640" aufrufen.	Taste "OK" drücken. Der Abgleich wird automatisch durchgeführt.  Dialogzeile "End" mit "with mem" → "OK" beenden.
4. OSD	Dialogzeile "OSD" (horiz. bzw. vertic.) über "TV-Menü" → "Einstellungen" → "Sonderfunktionen" → "Service" → "Service Code" → Kennziffer "8640" aufrufen.	Mit der Taste $\triangleleft$ oder $\triangleright$ das Menü in die Bildmitte stellen. Dialogzeile "End" mit "with mem" → "OK" beenden.
5. Weißwert	Farbbildgenerator: Grautreppe mit Burst einspeisen. Kontrast: Maximum Farbkontrast: Mittelwert Bildschirmhelligkeit: Mittelwert  Dialogzeile "WHITE ADJUSTMENT" über "TV-Menü" → "Einstellungen" → "Sonderfunktionen" → "Service" → "Service Code" → Kennziffer "8640" aufrufen.	Mit der Taste $\triangleleft$ oder $\triangleright$ die Werte für "Grün" bzw. "Blau" so einstellen, dass das Testbild unbunt wird.  Kontrolle des Weißabgleichs mit Kontrast Minimum und Maximum. Mit Taste "M" zurück ins SERVICE-Menü und Dialogzeile "End" mit "with mem" → "OK" beenden.
6. Schirmgitterspannung $U_{G2}$	Farbbildgenerator: Schwarzbild einspeisen. Bildschirmhelligkeit so einstellen, dass das Testbild gerade dunkel wird.  Hochohmiges Voltmeter über $220\text{k}\Omega$ : Testpunkte R, G, B (Bildrohrplatte). Testpunkt mit höchstem Spannungswert ermitteln.	Mit Regler $U_{G2}$ (Splitt-Trafo) an dem Messpunkt mit dem höchsten Spannungswert eine Spannung von $150\text{V} \pm 2,5\text{V}$ für 15"...21"-Bildröhren abgleichen.

Abgleich	Vorbereitung	Abgleichvorgang
7. Zeilenschärfe	Farbbildgenerator: Konvergenztestbild einspeisen. Kontrast: Maximum Bildschirmhelligkeit so einstellen, dass der schwarze Testbildhintergrund sich gerade aufzuhellen beginnt.	Mit dem <b>Focusregler U<sub>F</sub></b> (Splitt-Trafo) die vertikalen Linien ca. 5cm vom rechten und linken Bildrand auf kleinste horizontale Breite einstellen. Die Mittenschärfe darf nicht schlechter als die Randschärfe erscheinen, gegebenenfalls mitteln.
8. Vertikale Bildlage (Vertical Shift)	Farbbildgenerator: Geometriebild einspeisen. Dialogzeile "Vertical Shift" über "TV-Menü" -> "Einstellungen" -> "Sonderfunktionen" -> "Service -> "Service Code" -> Kennziffer "8640" -> "GEOMETRIE" aufrufen.	Mit der Taste < oder > mittlere Gitterlinie auf Bildschirmmitte einstellen.
8.1 Vertikal Amplitude	Dialogzeile "Vertical Amplitude" aufrufen.	Mit der Taste < oder > Bildamplitude einstellen.
8.2 Vertikal Linearit.	Dialogzeile "Vertical Linearit." aufrufen.	Mit der Taste < oder > nach Testbild einstellen.
8.3 Horizontale Bildlage (Horizontal Shift)	Dialogzeile "Horizontal Shift" aufrufen.	Mit der Taste < oder > nach Testbild einstellen.  Mit Taste "M" zurück ins Menü "Service" und Dialogzeile <b>End</b> mit <b>with mem</b> -> "OK" beenden.

## GB Alignment

### Attention!

1. Carry out the alignment with the unit at operating temperature (about 15 min.).
2. Keep the "Sub. Contrast" setting unchanged (factory setting).

All adjustment controls not mentioned in this description are pre-set at the factory and must not be re-adjusted in the case of repairs.

**Measuring instruments:** 100MHz oscilloscop with 10:1 test probe, digital voltmeter, colour video generator.

### Service works after replacement or repair of the following modules:

- **Power supply:** alignment 1
- **IF, video demodulator:** alignment 2, 3
- **IC34015:** alignment 3
- **CRT, CRT panel:** alignment 5...8
- **Deflection:** alignment 7, 8
- **NVM CIC82501:** alignment 2...5 and 8.

"M" button → Call up "TV-menu" or go back to previous menu.

"E" button → Exit menu.

Cursor buttons  $\triangle$   $\nabla$  → Select dialogue line.

Cursor buttons  $\triangleleft$   $\triangleright$  → Change setting.

Alignment	Preparations	Alignment Process
1. <b>+A</b> voltage	This voltage must be checked and re-adjusted if necessary after every repair and before every alignment.  Brightness: Minimum Contrast: Minimum Digital voltmeter: Cathode D61016	Adjust <b>+A</b> acc. to the table (page 3-15) on the power supply circuit diagram with <b>R60516</b> .
2. Tuner AGC	100MHz Oscilloscop: Channel A: Tuner contact 10 or 11. Ground: Tuner Colour video generator: Feed in a standard test pattern or generator via the aerial, $\geq 80\text{dB}\mu\text{V}$ .  Call up the dialog line "AGC" via "TV-menu" → "Settings" → "Special functions" → "Service" → Service Code "8640".	Adjust $300\text{mV}_{\text{pp}}$ with button $\triangleleft$ or $\triangleright$ .  Terminate the dialog line " <b>End</b> " " <b>with mem</b> " → "OK".
3. AFC	Colour video generator: Feed in with standard channel spacing without finetuning in Band 1 (channel 2...4).  Call up the dialog line "AFC" via "TV-menu" → "Settings" → "Special functions" → "Service" → Service Code "8640".	Press the "OK" button. The alignment is carried out automatically.  Terminate the dialog line " <b>End</b> " " <b>with mem</b> " → "OK".
4. OSD	Call up the dialog line "OSD" (horiz. bzw. vertic.) via "TV-menu" → "Settings" → "Special functions" → "Service" → Service Code "8640".	With button $\triangleleft$ or $\triangleright$ position the menu in the middle of the picture. Terminate the dialog line " <b>End</b> " " <b>with mem</b> " → "OK".
5. White Balance	Colour video generator: Feed in a grey scale black/white test pattern with burst. Contrast: maximum Colour contrast: mid-position Screen brightness: mid-position  Call up dialog line "WHITE ADJUSTMENT" via "TV-menu" → "Settings" → "Special functions" → "Service" → Service Code "8640".	With button $\triangleleft$ or $\triangleright$ set the values for " <b>Green</b> " and " <b>Blue</b> " so that the picture becomes achromatic.  Check this alignment at minimum and maximum contrast. Go back to the "Service" menu with "M" and terminate the dialog line " <b>End</b> " " <b>with mem</b> " → "OK".
6. Screen grid voltage $U_{G2}$	Colour video generator: Feed in a black test pattern. Adjust the screen brightness so that the test pattern just turns dark.  High-resistance voltmeter via $220\text{k}\Omega$ : Test points R, G, B (picture tube plate).  Determine the test point having the highest voltage.	Use the $U_{G2}$ control (splitter transformer) to adjust at the test point having the highest voltage potential a voltage of $150\text{V} \pm 2.5\text{V}$ for 15"...21" picture tubes.

Alignment	Preparations	Alignment Process
7. Line Sharpness	Colour video generator: Feed in a convergency test pattern. Contrast: maximum Set the screen brightness so that the black background of the test pattern just starts to brighten.	With <b>focus control</b> $U_F$ (splitter transformer) adjust the vertical lines approx. 5cm from the right and left picture edge to minimum horizontal width. The sharpness in the middle must not seem to be worse than the sharpness at the edges. If necessary, take an average.
8. Vertical position of the picture (Vertical Shift)	Colour video generator: Feed in a geometry test pattern.  Call up the "Vertical Shift" menu via "TV-menu" -> "Settings" -> "Special functions" -> "Service" -> Service Code "8640" -> "GEOMETRIE" -> "OK".	Adjust according to the test pattern using button < or >.
8.1 Vertical Amplitude	Call up the menu "Vertical Amplitude".	Set the vertical amplitude using button < or >.
8.2 Vertical Linearity	Call up the menu "Vertical Linearit.".	Adjust according to the test pattern using button < or >.
8.3 Horizontal position of the picture (Horizontal Shift)	Call up the menu "Horizontal Shift".	Adjust according to the test pattern using button < or >.  Go back to the "Service" menu with "M" and terminate the dialog line " <b>End</b> " " <b>with mem</b> " -> "OK".

# Platinenabbildungen und Schaltpläne / Layout of the PCBs and Circuit Diagrams

## Chassisplatte

### Koordinaten für die Bauteile der Bestückungsseite (Oberseite)

Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates	
	X	Y		X	Y		X	Y
BR100	32	99	BR205	47	120	C31042	41	29
BR101	67	10	BR206	44	119	C31044	47	29
BR102	67	15	BR207	41	120	C31046	22	58
BR103	67	18	BR209	32	122	C34017	125	64
BR104	58	20	BR210	35	201	C34021	82	63
BR106	140	11						
BR107	29	131	BR212	45	138	C34026	99	93
BR108	20	131	BR213	30	114	C34037	123	56
BR110	99	135	BR214	34	104	C34039	125	71
BR112	96	128	BR215	97	58	C34044	74	63
BR113	59	84	BR216	94	161	C34061	75	53
BR114	30	109				C34063	56	66
BR115	34	96	BR218	221	85	C34064	58	71
BR116	228	76	BR219	87	221	C34086	81	108
BR117	162	115	BR220	260	185	C40557	145	37
BR118	195	102	BR222	56	115	C40586	167	10
BR119	67	13						
BR120	185	101	BR225	78	153	C40587	131	28
BR123	190	49	BR262	142	26	C43012	37	80
BR124	192	103	BR268	144	29	C43117	79	36
BR125	190	104	BR601	211	168	C43118	85	57
			BR603	173	173	C43119	80	36
BR126	182	20	BR604	170	176	C44022	241	58
BR127	129	47	BR605	135	211	C44032	241	51
BR128	99	109	BR606	201	202	C46001	210	66
BR129	125	112	BR31045	30	30	C50013	10	139
BR130	107	104	BR32025	53	18	C50026	48	159
BR131	156	77	BR40554	134	48	C50036	37	123
BR132	158	71	BR40561	132	86	C50037	23	123
BR134	153	68	BR40570	143	16	C50041	51	159
BR136	157	25	BR40571	186	32	C50044	36	144
BR137	175	50	BR41011	229	40	C50047	64	135
BR138	22	62	BR41012	230	45	C50048	86	138
BR139	209	9	BR41013	228	26	C50051	15	135
BR140	222	69	BR41016	228	36	C50052	13	123
BR141	131	73	BR41501	209	17	C50053	24	134
BR143	145	103	BR41502	195	20	C50061	42	145
BR144	144	105	BR43105	81	22	C50062	54	159
BR145	143	108	BR44001	240	82	C50251	68	64
BR146	140	110	BR44002	241	85	C52002	73	178
BR147	156	112	BR44003	154	131	C52003	71	204
BR148	180	102	BR44022	224	20	C52004	70	211
BR151	147	55	BR44032	226	23	C52247	113	95
BR152	147	58	BR52006	55	195	C52251	115	90
BR153	141	66	BR53011	21	196	C52253	125	88
BR154	143	71	BR53016	75	247	C52257	125	79
BR157	159	129	BR53021	49	171	C53001	30	179
BR158	193	126	BR53073	10	148	C53002	38	195
BR160	133	120	BR53074	33	166	C53006	33	187
BR161	241	115	BR60014	160	198	C53011	10	205
BR162	123	112	BR60506	158	235	C53017	69	246
BR163	125	134	BR60516	183	197	C53031	62	209
BR164	216	84	BR61014	107	242	C53032	69	216
BR165	19	53	BR61015	107	243	C53054	60	159
BR166	153	37	BR61016	103	252	C54001	94	169
BR167	10	55	BR61037	107	228	C54011	96	214
BR168	171	19	BR61040	109	160	C54012	36	134
BR170	236	93	BR61041	104	129	C57016	51	103
BR171	220	94	BR61050	156	135	C60501	140	203
BR172	108	16	BR61055	102	224	C60504	163	187
BR173	238	117	BR62500	204	180	C60507	156	199
BR174	238	122	BR62501	215	237	C60509	175	228
BR175	239	127	BR62502	228	211	C60511	178	214
BR176	177	127	BR62503	230	226	C60512	184	233
BR177	254	174	BR62504	237	188	C60513	165	191
BR178	239	120	BR62505	224	188	C60523	189	184
BR179	176	139	BR62506	202	175	C60524	176	182
BR180	23	74	BR80501	163	99	C60526	192	171
BR181	71	44	BR80502	211	111	C60527	176	171
BR182	71	41	BR81039	127	42	C60528	145	177
BR183	70	38	BR81050	187	47	C61016	103	241
BR184	176	142	BR81051	178	58	C61017	86	246
BR185	110	153	BR81081	166	117	C61036	109	203
BR186	77	132	BR81501	254	194	C61037	117	184
BR187	112	140	BR81502	234	139	C61042	118	136
BR188	215	114	BR81503	77	216	C61052	166	134
BR189	209	108	BR81504	84	196	C61056	105	167
BR190	49	126	BR81505	257	193	C61057	122	166
BR191	57	153	BR81506	251	193	C61063	185	136
BR192	57	168	BR81507	142	115	C61065	108	157
BR193	34	155	BR81508	218	63	C61501	210	142
BR194	73	181	BR81509	241	103	C62501	228	203
BR195	116	127	BR81701	207	121	C62502	228	169
BR196	129	153	BR81702	204	45	C62503	188	218
BR197	126	159	BR81704	146	44	C62521	205	161
BR198	102	127	BR81705	173	37	C62522	198	161
BR199	80	131	BR81706	147	50	C62548	122	203
BR200	127	112	BR81707	147	53	C62549	122	200
BR201	130	132	BR84501	255	170	C81061	208	95
BR202	127	131	BR84502	256	161	C81063	222	105
BR203	62	122	BR84503	256	163	C81064	203	68
BR204	53	129				C84001	245	145
			BU01	268	66			

## Chassis Board

### Coordinates of the Components on the Components Side (Top Side)

Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates	
	X	Y		X	Y		X	Y		X	Y
C84501	272	174	L81062	219	100	R60504	163	174			
						R60505	170	229			
						R60506	170	216			
D34081	113	121	L81064	213	72	R60508	142	208			
D34082	113	119	NETZ01	230	240	R60509	142	199			
D34083	91	114	NETZ02	230	232	R60512	176	238			
D34084	94	113				R60513	177	241			
D40584	116	22	OK60531	171	159	R60516	186	197			
D40585	173	16									
D40586	126	25	P+	264	106	R60531	167	174			
D43055	29	102	P+	278	106	R61018	87	234			
D43056	29	106	P-	264	121	R61043	120	156			
D50023	59	143	P-	278	121	R61046	118	148			
						R61053	151	148			
D50048	96	143	PFC01	214	180						
D52001	70	184	PFC02	193	180	R61056	130	145			
D53003	44	183				R61506	225	126			
D54001	88	186	Q34043	91	100	R61507	95	188			
D54011	98	204	Q34044	88	91	R61508	202	140			
			Q34046	85	100	R62501	200	192			
D54022	56	19	Q80001	171	67						
D57013	78	120									
D57023	56	104	R31047	25	64	R62502	202	175			
D60022	180	174	R31048	16	30	R62503	229	176			
D60024	183	183	R32132	42	88	R62549	120	208			
			R32470	119	37	R81025	229	97			
D60026	183	165	R34036	143	79	R81026	190	66			
D60027	188	171									
D60506	159	217	R34037	134	68	R81028	188	66			
D60509	142	208	R34050	129	96	R81030	175	114			
D60512	180	228	R34051	110	110	R81033	188	100			
			R34052	112	113	R81037	183	101			
D60523	183	174	R34053	111	115	R81039	141	112			
D61016	98	242									
D61036	109	205	R34054	110	107	R81042	142	76			
D61037	108	205	R34055	131	99	R81045	161	80			
D61056	109	171	R34064	36	94	R81054	198	101			
			R34083	91	129	R81055	201	110			
			R34084	94	129	R81060	206	110			
D61503	188	147									
D81501	194	248	R34090	74	102	R81080	195	66			
D85507	278	184	R34095	70	100	R81081	193	66			
D85511	272	194	R40551	133	44	R81082	177	100			
D85512	274	194	R40553	138	38	R81090	203	109			
EURO-AV01	6	93	R40554	134	48	R81226	238	112			
F32109	55	54	R40571	167	24	S62501	234	219			
F32121	37	73	R40588	119	19						
F32410	97	42	R41007	201	23	SI40551	134	60			
F32412	1										

**Chassisplatte**

**Chassis Board**

**Koordinaten für die Bauteile der Lötseite (Unterseite)**

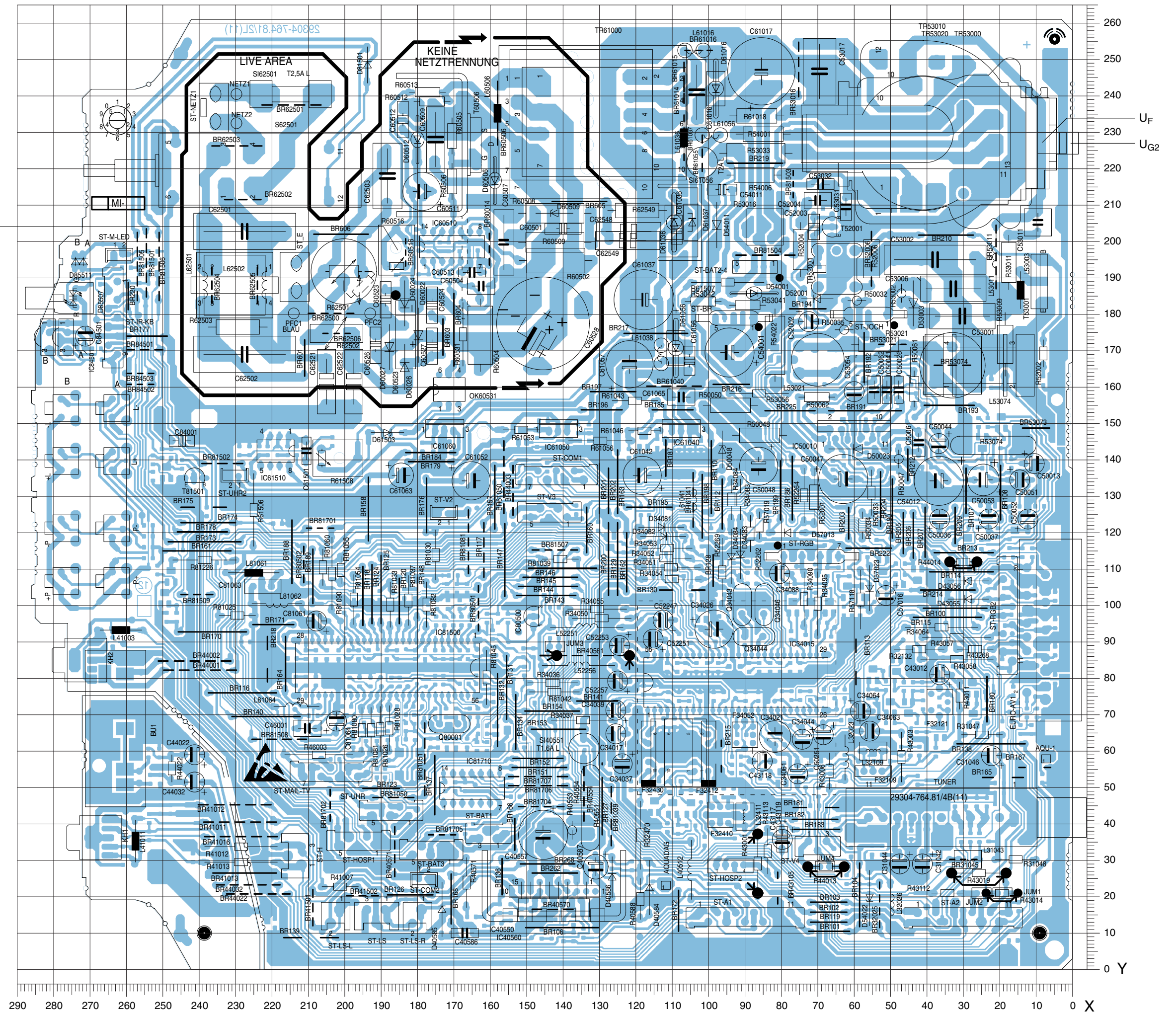
**Coordinates of the components on the Solder Side (Bottom Side)**

Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates				
	X	Y		X	Y		X	Y		X	Y		X	Y	X	Y	
CBR101	184	65	CC41016	242	30	CC81080	198	62	CR40552	133	60	CR57021	58	98	CR81511	147	73
CBR102	143	105	CC41017	248	44	CC81081	194	64	CR40560	142	91	CR57022	61	98	CR81512	142	99
CBR105	151	87				CC81082	172	104	CR40561	144	44						
CCB106	159	92	CC43011	35	84	CC81088	196	86	CR40562	137	9	CR57023	63	98	CR81711	169	50
CBR107	32	121	CC43057	68	76	CC81091	205	86				CR57024	64	109	CR82221	246	96
CBR108	150	62	CC43058	63	76	CC81092	208	86	CR40563	143	10	CR57025	61	109	CR82501	184	68
			CC43061	72	75				CR40572	161	13	CR57112	47	111	CR82502	184	63
CBR110	259	139	CC43101	14	66				CR40573	158	13	CR57113	54	117	CR82504	191	54
CBR111	246	115				CC81093	214	85	CR40581	162	64						
CBR112	92	56	CC43103	11	66	CC81701	195	40	CR40582	164	61	CR57116	18	113	CR82505	189	54
CBR114	28	108	CC43106	16	76	CC81711	172	50				CR57117	52	103	CR82506	173	61
CBR115	163	81	CC43107	10	70	CC82501	181	64	CR40585	167	10	CR57121	17	117	CR82507	176	62
			CC43116	98	75	CC85501	193	68	CR40586	121	28	CR57122	9	127	CR83501	254	113
CBR116	187	145	CC44021	251	59				CR40589	131	28	CR57124	15	97	CR83502	254	116
CBR118	136	126				CD32411	102	50									
CBR119	105	104	CC44031	251	52	CD32460	109	48	CR41004	181	20	CR60513	165	197	CR83503	254	119
CBR120	144	138	CC46003	218	122	CD32470	109	52				CR60515	186	192	CR83504	254	122
CBR121	109	108	CC46004	208	69	CD34041	93	83	CR41005	183	20	CR60516	180	189	CR83505	268	170
			CC46014	208	79	CD80501	143	103	CR41011	258	37	CR60546	174	198	CR85501	180	72
CBR124	61	32	CC46023	199	72				CR41016	261	35	CR61041	111	154	CR85502	184	70
CBR125	38	60				CIC82501	182	56	CR41017	251	44						
CBR126	43	52	CC46026	213	79	CL40511	100	25	CR43009	11	114	CR61044	114	144	CR85503	253	188
CBR127	134	10	CC46027	193	79							CR61051	145	151	CR85504	256	189
CBR128	57	143	CC50011	63	153				CR43012	23	76	CR61054	134	145	CR85505	260	193
			CC50018	66	138	CR31021	23	46	CR43013	30	84	CR61501	215	142	CR85506	268	188
CBR129	171	189	CC52001	69	208	CR31041	25	36	CR43014	23	73	CR61502	213	142	CR85511	256	194
CBR130	181	197				CR31043	38	30	CR43016	33	84						
CC31019	26	46	CC52006	69	192	CR31044	52	33	CR43017	28	73	CR61503	221	142	CR85512	253	197
CC31047	20	48	CC52007	8	162	CR31045	44	37				CR61504	223	142			
CC31048	20	45	CC52246	103	83				CR43056	20	104	CR61505	203	145	CT32105	80	53
CC31051	29	46	CC52252	111	83	CR31046	20	51	CR43061	75	75	CR61511	229	142	CT32111	50	72
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CC32026	58	25	CC53071	17	139	CR32101	44	60	CR43071	20	94	CR80503	158	96	CT32460	115	44
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CC32111	56	57	CC54021	55	33	CR32103	86	54	CR43073	65	76				CT32480	105	44
CC32121	43	66	CC57016	68	118	CR32104	42	60	CR43075	21	100	CR81003	189	68	CT34031	102	97
CC32122	37	73	CC57021	100	83	CR32105	84	52				CR81006	177	99			
CC32124	41	73	CC57119	114	114	CR32106	79	58	CR43101	18	68	CR81007	175	95	CT34085	77	99
CC32411	105	50	CC60514	174	189	CR32107	47	60	CR43102	15	17	CR81008	203	58	CT34090	72	99
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CC32471	121	50	CC60517	182	203	CR32110	51	57	CR43107	15	72	CR81016	185	86	CT43010	28	77
CC33011	118	76	CC60532	168	198	CR32112	41	78				CR81019	175	86			
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CC33013	115	76	CC61038	102	144	CR32114	54	76	CR43118	92	58	CR81021	163	70	CT50005	127	117
			CC61039	105	144	CR32115	50	68	CR43119	56	22	CR81022	173	79	CT50015	20	150
CC33014	108	75	CC61041	108	144	CR32124	40	66	CR44021	254	59				CT50040	25	145
CC33015	112	68	CC61051	147	145	CR32128	67	55	CR44031	253	52	CR81023	166	70	CT50050	16	122
CC33016	102	75	CC61058	136	148							CR81024	166	86			
CC33017	90	75				CR32133	46	78	CR46022	199	79	CR81027	187	79	CT50055	43	108
CC34022	86	75				CR32142	50	76	CR46026	210	79	CR81029	185	79	CT52260	82	169
CC34027	97	90	CC61059	122	142	CR32143	50	79	CR50003	121	116	CR81031	165	41	CT57020	57	103
CC34030	158	134	CC61060	133	148	CR32150	44	78	CR50004	130	121				CT57021	62	103
CC34036	109	68	CC61061	178	143	CR32154	44	78	CR50006	123	115	CR81032	170	108	CT57112	52	111
CC34038	83	83	CC61062	170	145	CR32410	98	48				CR81033	163	78			
CC34041	86	83	CC61064	175	143	CR32411	93	47	CR50016	63	139	CR81034	170	108	CT57113	48	104
			CC61511	226	142	CR32412	96	38	CR50017	20	142	CR81035	234	112	CT57124	29	117
CC34042	78	83	CC61512	218	142	CR32456	111	39	CR50019	115	117	CR81036	158	76	CT61043	118	145
CC34052	91	64	CC80001	169	70	CR32462	118	50	CR50031	20	145	CR81040	148	87	CT61053	151	146
CC34057	88	106	CC80002	175	70	CR32471	116	50	CR50032	23	150				CT81220	249	102
CC34058	88	109	CC80502	155	96							CR81041	153	47			
CC34059	88	112				CR32472	108	38	CR50036	23	137	CR81043	158	73			
			CC80503	152	96	CR32473	105	39	CR50037	27	121	CR81044	198	66	CT81225	247	108
CC34067	80	75	CC81007	178	86	CR32483	101	35	CR50038	23	140	CR81045	184	72	CT81502	249	136
CC34088	71	104	CC81008	249	96	CR32486	114	50	CR50039	26	150	CR81047	170	86	CT85502	253	193
CC40556	141	27	CC81009	188	86	CR33014	105	75	CR50041	56	151						
CC40562	140	9	CC81021	166	62												
CC40563	146	10				CR34030	153	134	CR50042	42	158	CR81048	173	95			
			CC81023	169	62	CR34031	150	138	CR50043	59	140	CR81049	170	95			
CC40564	137	13	CC81026	191	64	CR34032	97	83	CR50046	69	161	CR81050	173	86			
CC40565	141	14	CC81028	188	64	CR34042	89	83	CR50051	16	127	CR81051	175	86			
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			CC81034	153	81	CR34056	80	83	CR50054	20	120	CR81054	175	79			
CC40574	154	17	CC81035	167	78	CR34057	93	110	CR50056	25	126	CR81056	168	86			
CC40575	151	15	CC81036	150	82	CR34058	96	110	CR50251	62	68	CR81059	203	106			
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# Chassisplatte Chassis Board

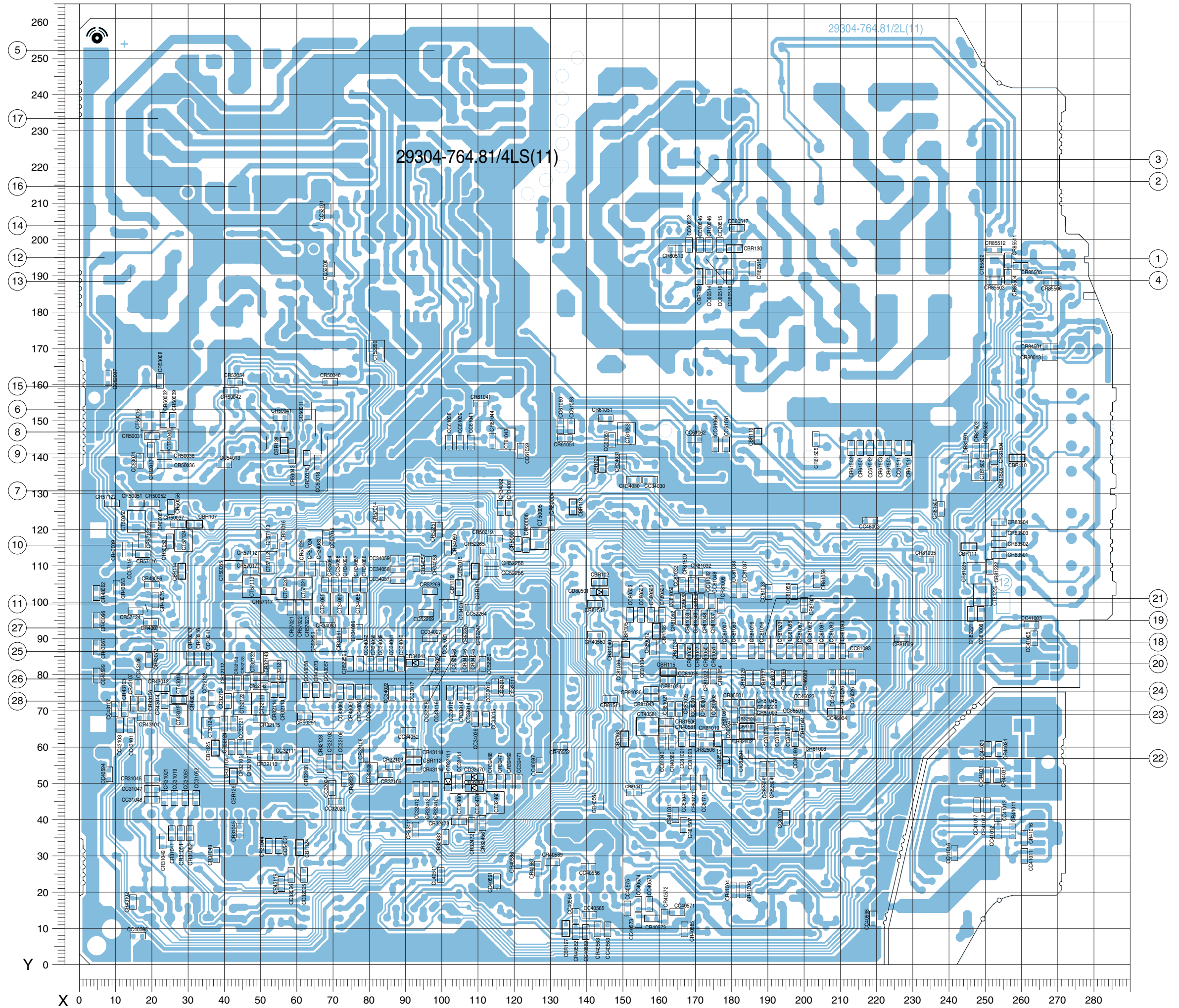
Bestückungsseite, Ansicht von oben  
Component Side, Top View

+A	132V
55cm PHI	132V
55cm VC/THO	132V



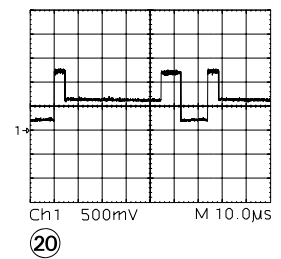
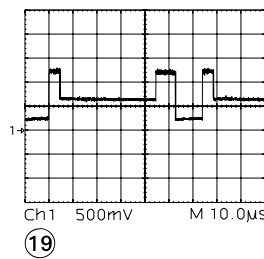
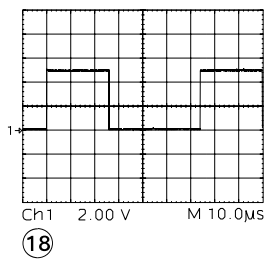
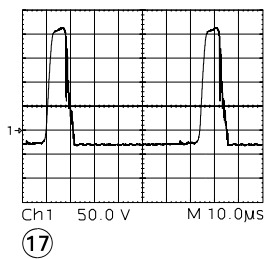
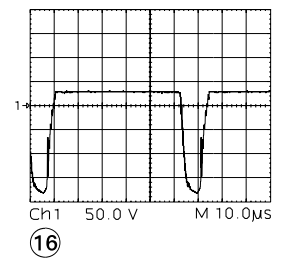
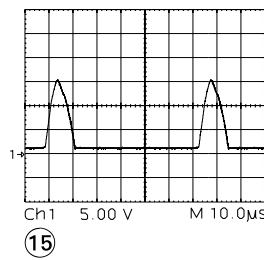
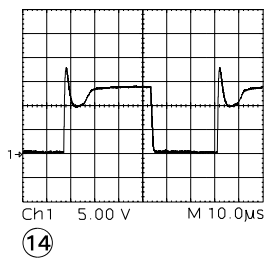
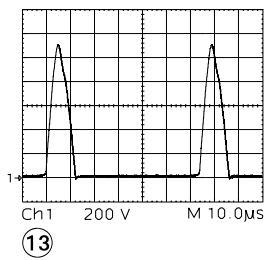
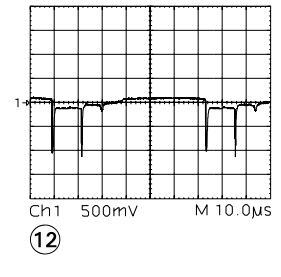
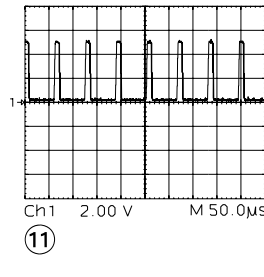
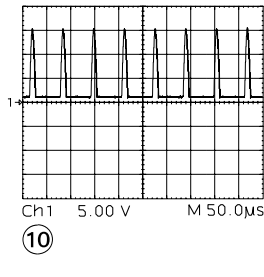
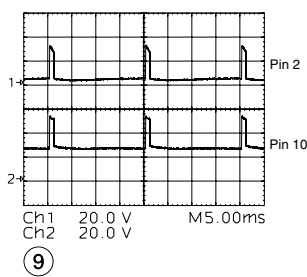
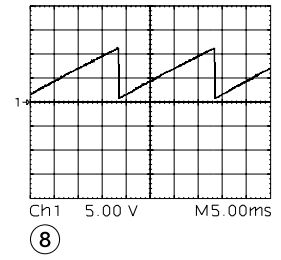
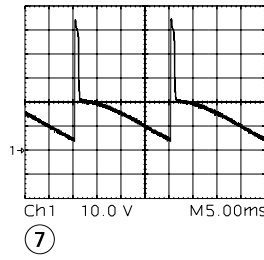
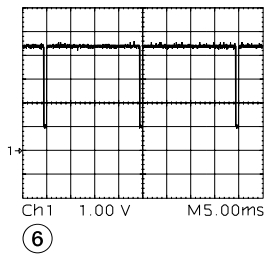
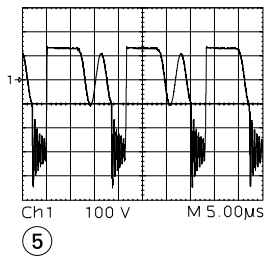
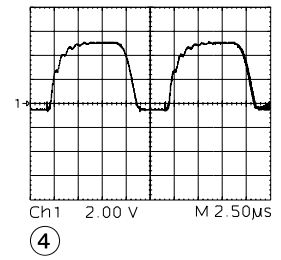
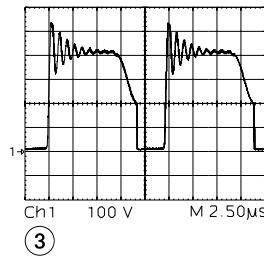
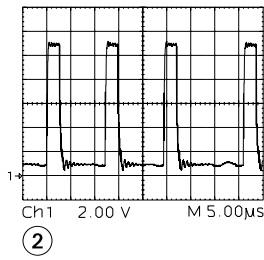
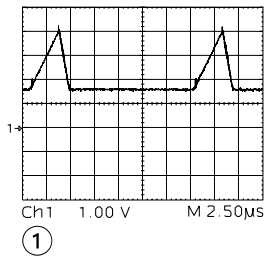
### Chassisplatte Chassis Board

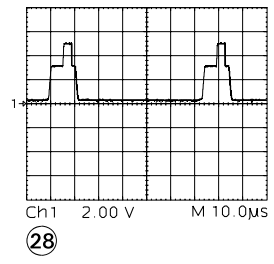
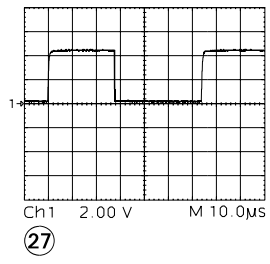
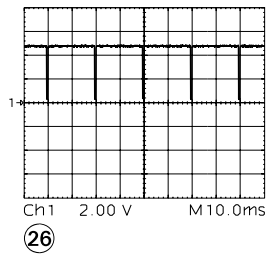
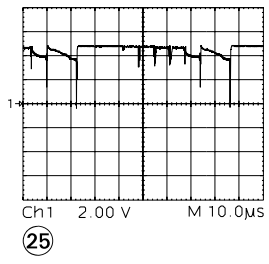
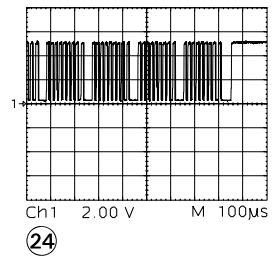
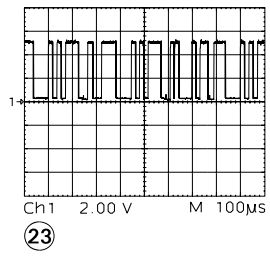
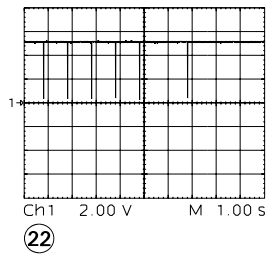
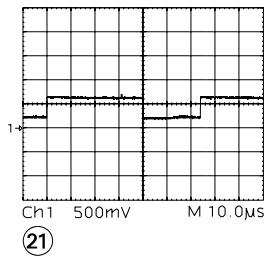
Lötseite, Ansicht von unten  
Solder Side, Bottom View





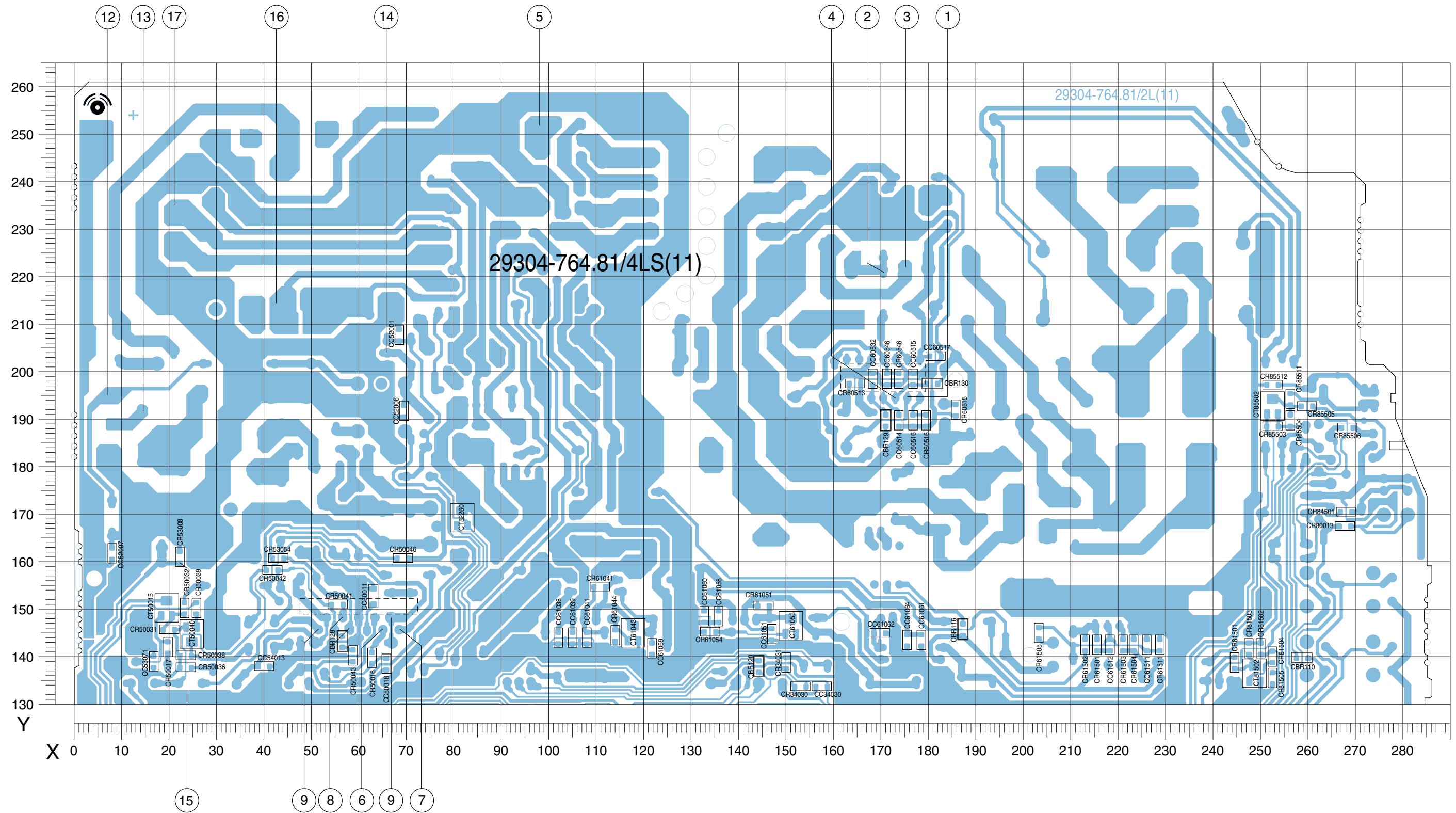
### Oszillogramme Chassis / Oscillograms Chassis





**Chassisplatte (vergrößert) Teil 1**  
**Chassis Board (enlarged) Part 1**

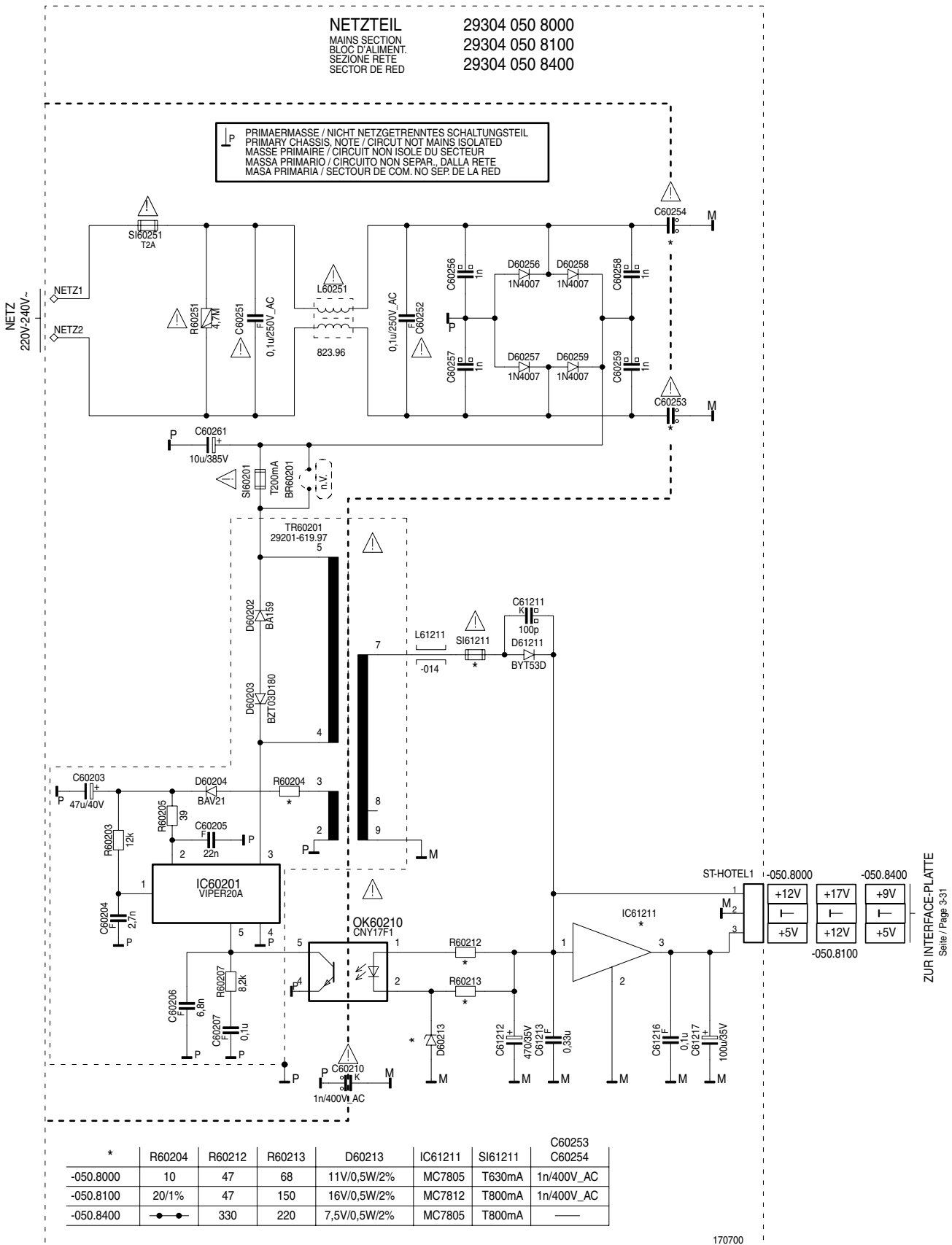
**Lötseite, Ansicht von unten**  
**Solder Side, Bottom View**



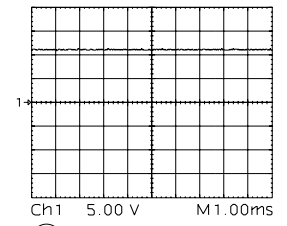
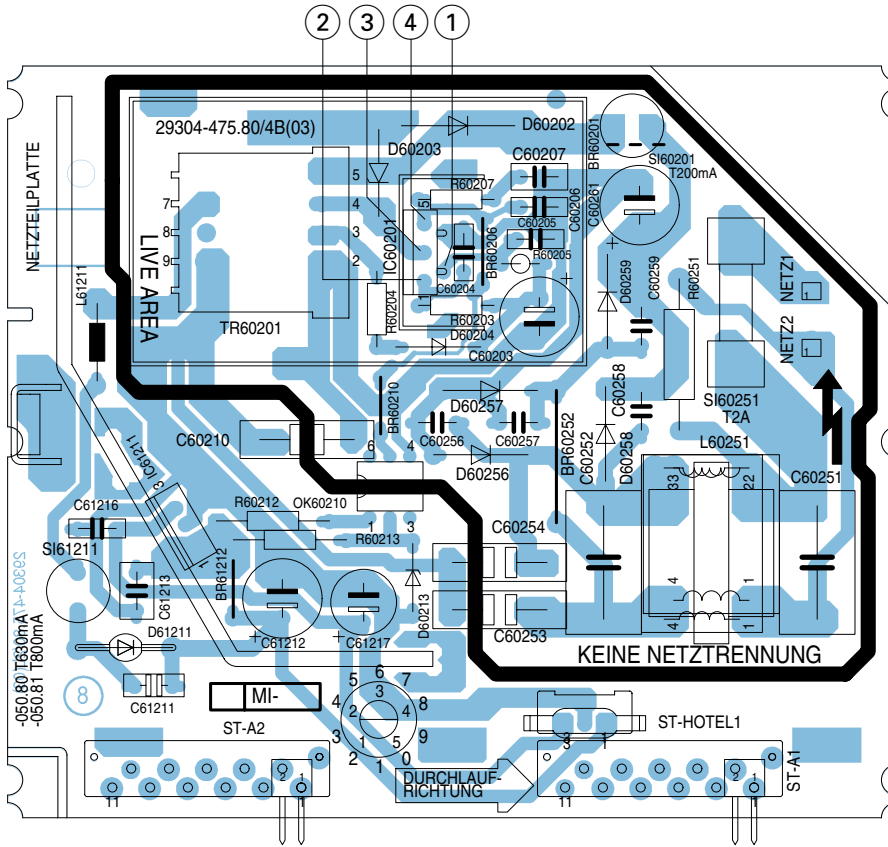


Netzteil / Mains Section 12/17V

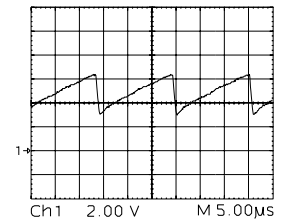
**Achtung!**  
**Netzteil steht auch nach Ausschalten des Netzschalters primärseitig weiter unter Netzspannung.**  
**Warning!**  
**When switching off with the mains switch, mains voltage is still applied to the primary side of the mains section.**



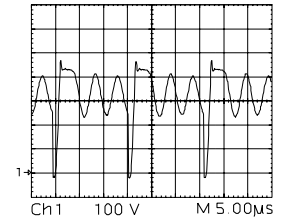
**Bestückungsseite, Ansicht von oben**  
**Component Side, Top View**



①

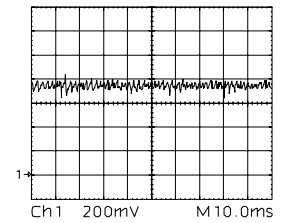
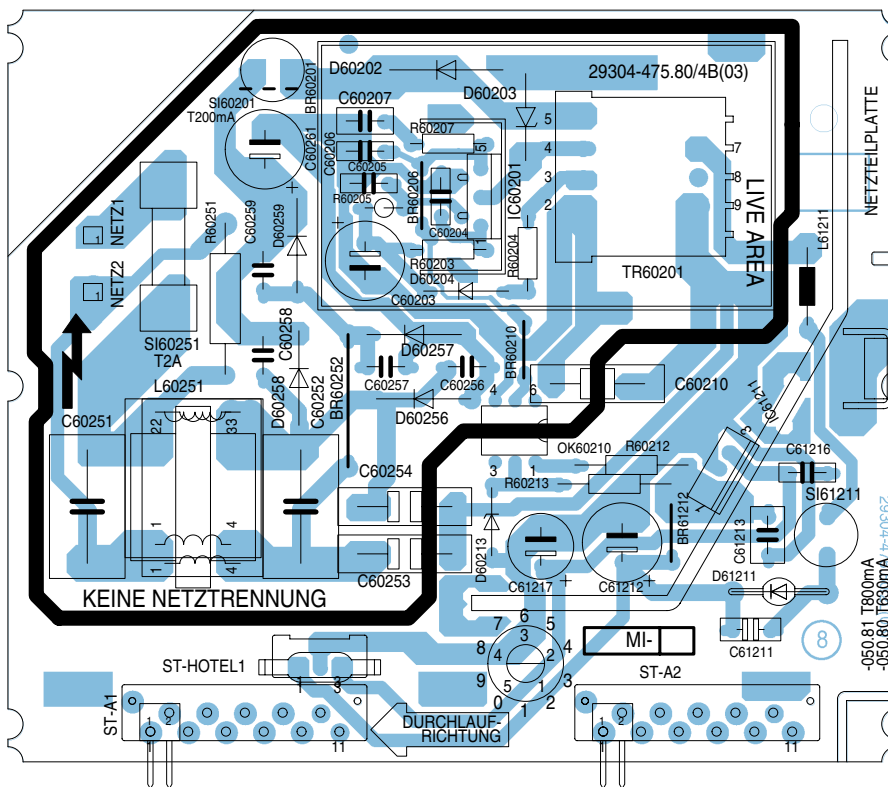


②



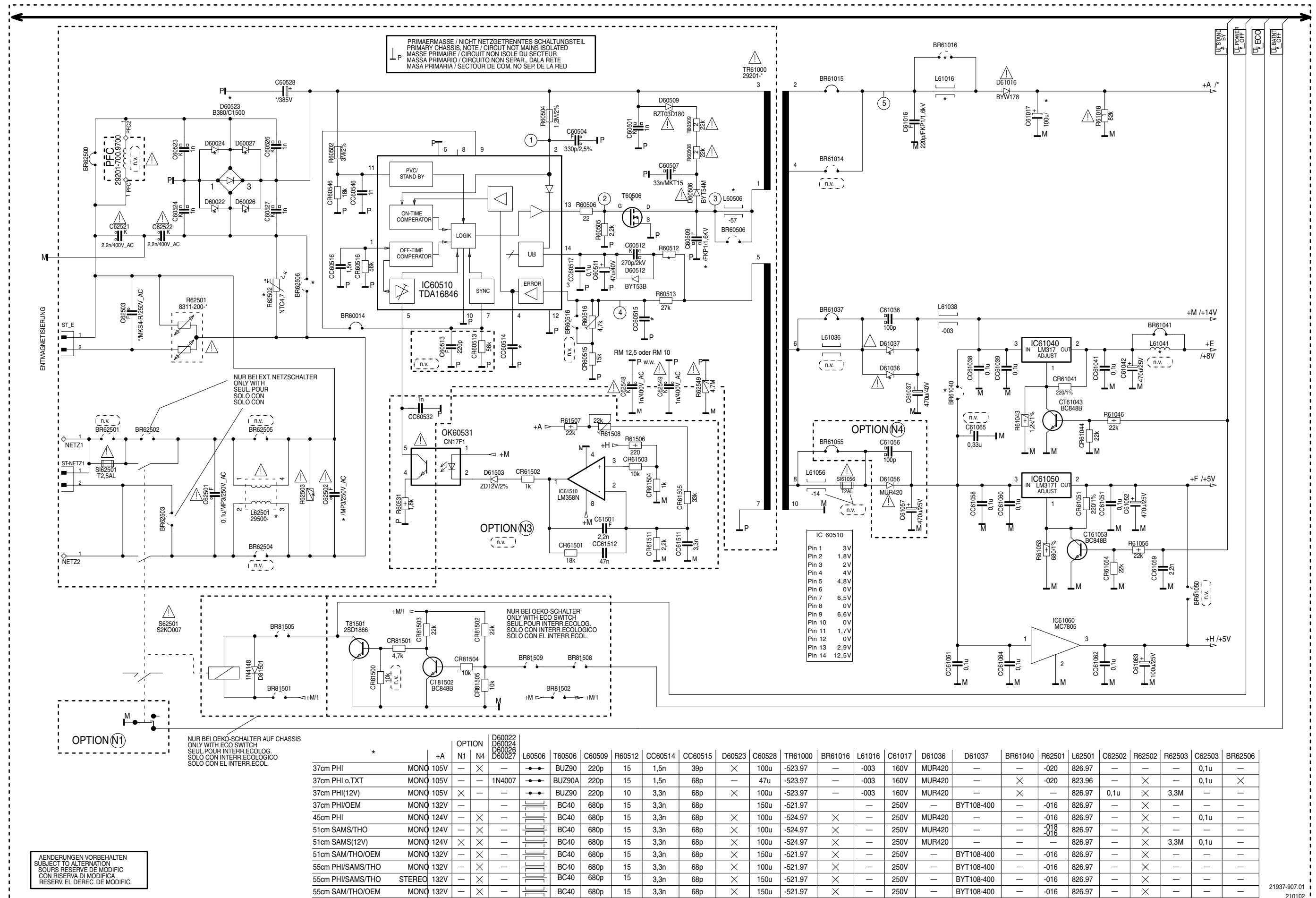
③

**Lötseite, Ansicht von unten**  
**Solder Side, Bottom View**

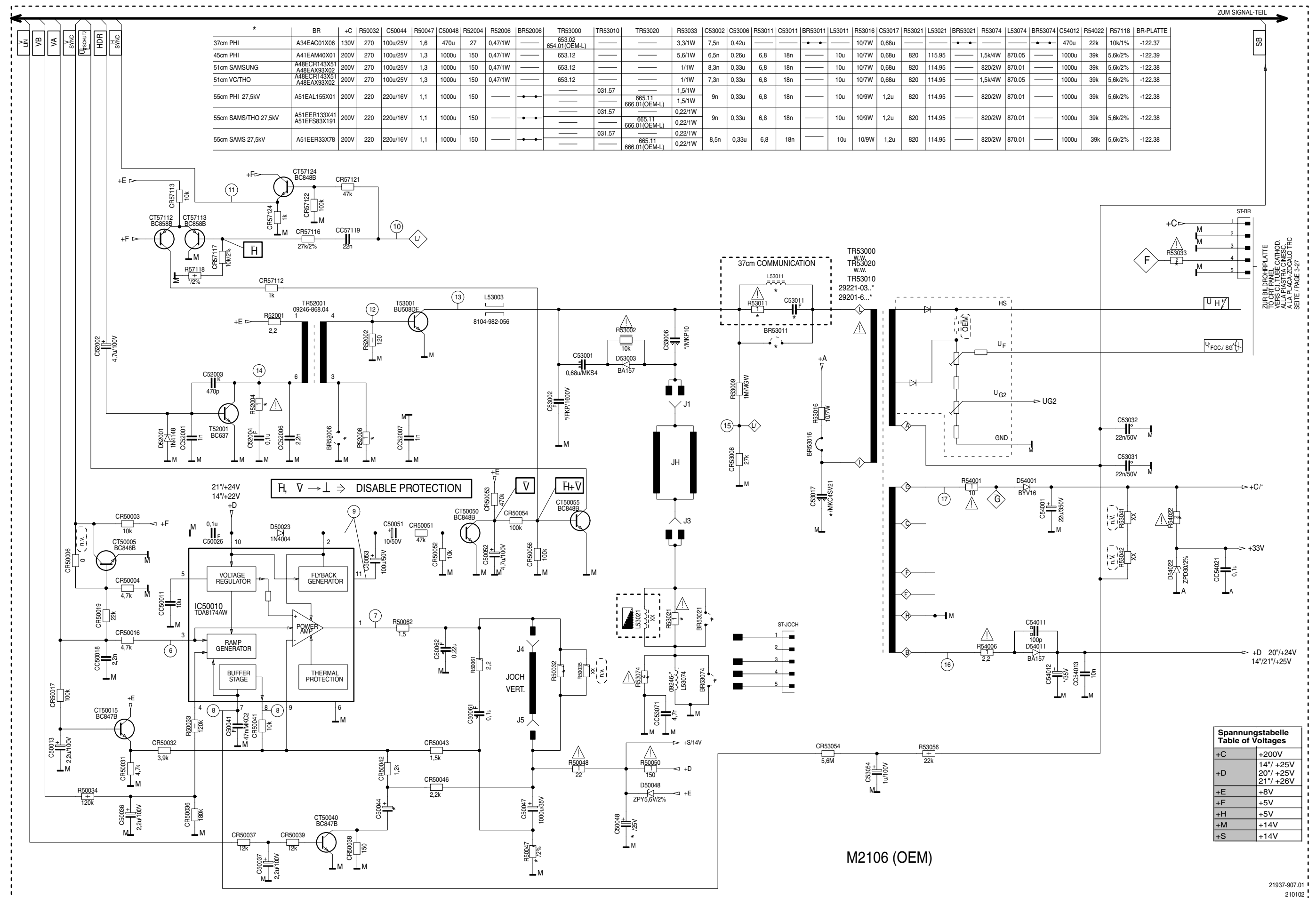


④

Teilschaltplan Netzteil / Circuit Diagram Mains Section



Teilschaltplan Ablenkung / Circuit Diagram Deflection Section



	BR	+C	R50032	C50044	R50047	C50048	R52004	R52006	BR52006	TR53000	TR53010	TR53020	R53033	C53002	C53006	R53011	C53011	BR53011	L53011	R53016	C53017	R53021	L53021	BR53021	R53074	L53074	BR53074	C54012	R54022	R57118	BR-PLATTE	
37cm PHI	A34EAC01X06	130V	270	100u/25V	1,6	470u	27	0,47/1W	---	653.02 654.01(OEM-L)	---	---	3,3/1W	7,5n	0,42u	---	---	---	---	10/7W	0,68u	---	---	---	---	---	---	---	---	---	---	---
45cm PHI	A41EAM40X01	200V	270	100u/25V	1,3	1000u	150	0,47/1W	---	653.12	---	---	5,6/1W	6,5n	0,26u	6,8	18n	---	---	10/7W	0,68u	820	115.95	---	---	---	---	---	---	---	---	---
51cm SAMSUNG	A48ECRT143X51 A48EAX93X02	200V	270	100u/25V	1,3	1000u	150	0,47/1W	---	653.12	---	---	1/1W	8,3n	0,33u	6,8	18n	---	---	10/7W	0,68u	820	114.95	---	---	---	---	---	---	---	---	---
51cm VC/THO	A48ECRT143X51 A48EAX93X02	200V	270	100u/25V	1,3	1000u	150	0,47/1W	---	653.12	---	---	1/1W	7,3n	0,33u	6,8	18n	---	---	10/7W	0,68u	820	114.95	---	---	---	---	---	---	---	---	---
55cm PHI 27,5kV	A51EAL155X01	200V	220	220u/16V	1,1	1000u	150	---	---	---	031.57	---	1,5/1W	9n	0,33u	6,8	18n	---	---	10/9W	1,2u	820	114.95	---	---	---	---	---	---	---	---	---
55cm SAMS/THO 27,5kV	A51EER133X41 A51EFS83X191	200V	220	220u/16V	1,1	1000u	150	---	---	---	031.57	---	1,5/1W	9n	0,33u	6,8	18n	---	---	10/9W	1,2u	820	114.95	---	---	---	---	---	---	---	---	---
55cm SAMS 27,5kV	A51EER33X78	200V	220	220u/16V	1,1	1000u	150	---	---	---	031.57	---	1,5/1W	9n	0,33u	6,8	18n	---	---	10/9W	1,2u	820	114.95	---	---	---	---	---	---	---	---	---

**Spnungstabelle  
Table of Voltages**

+C	+200V
+D	14' / +25V 20' / +25V 21' / +26V
+E	+8V
+F	+5V
+H	+5V
+M	+14V
+S	+14V

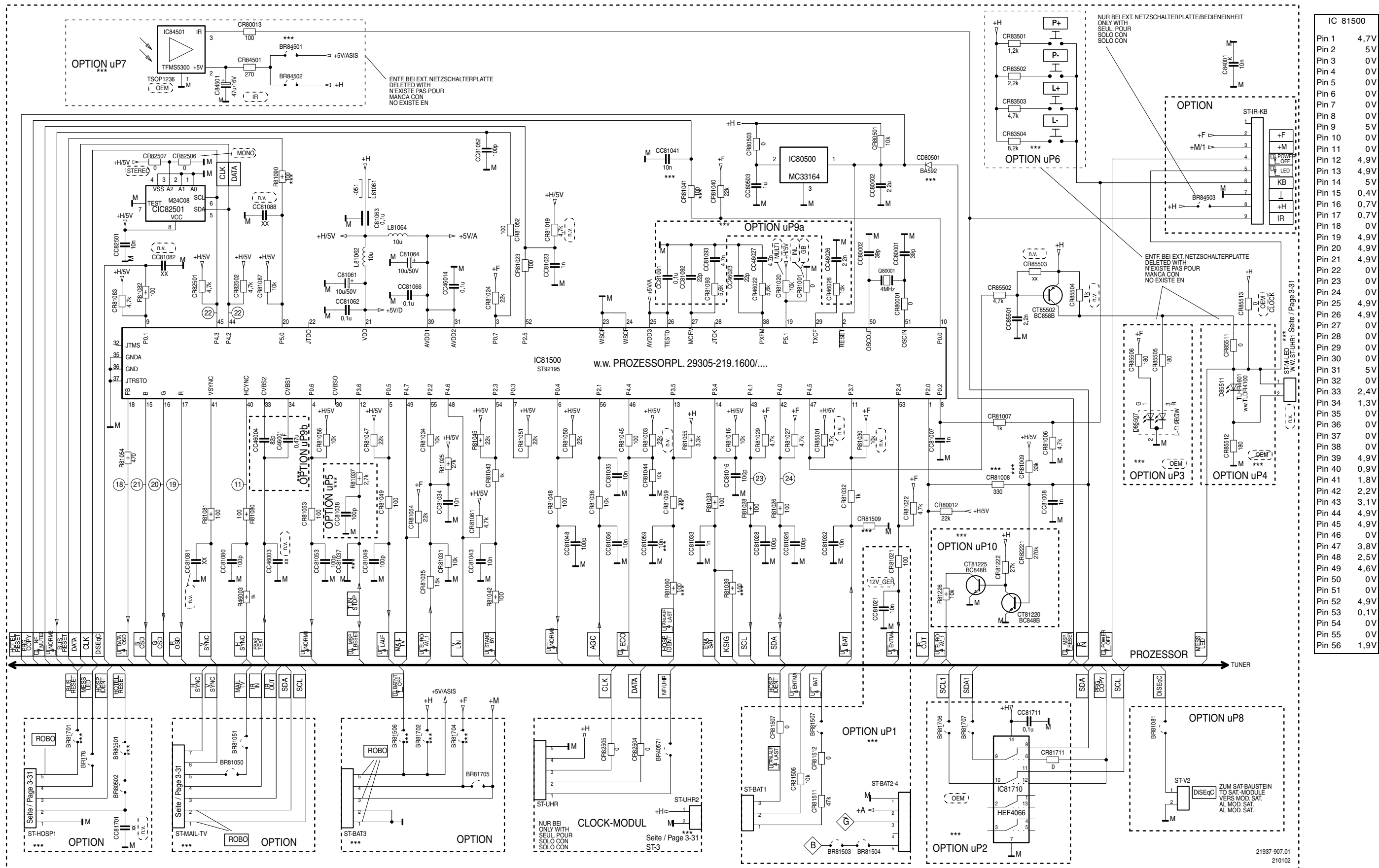
ZUR BILDROHRPLATTE  
TO CRT PANEL CONT'D.  
ALLA PIASTRA CINESC.  
ALLA PLACA-ZOCALO TRC  
SEITE / PAGE 3-27

M2106 (OEM)



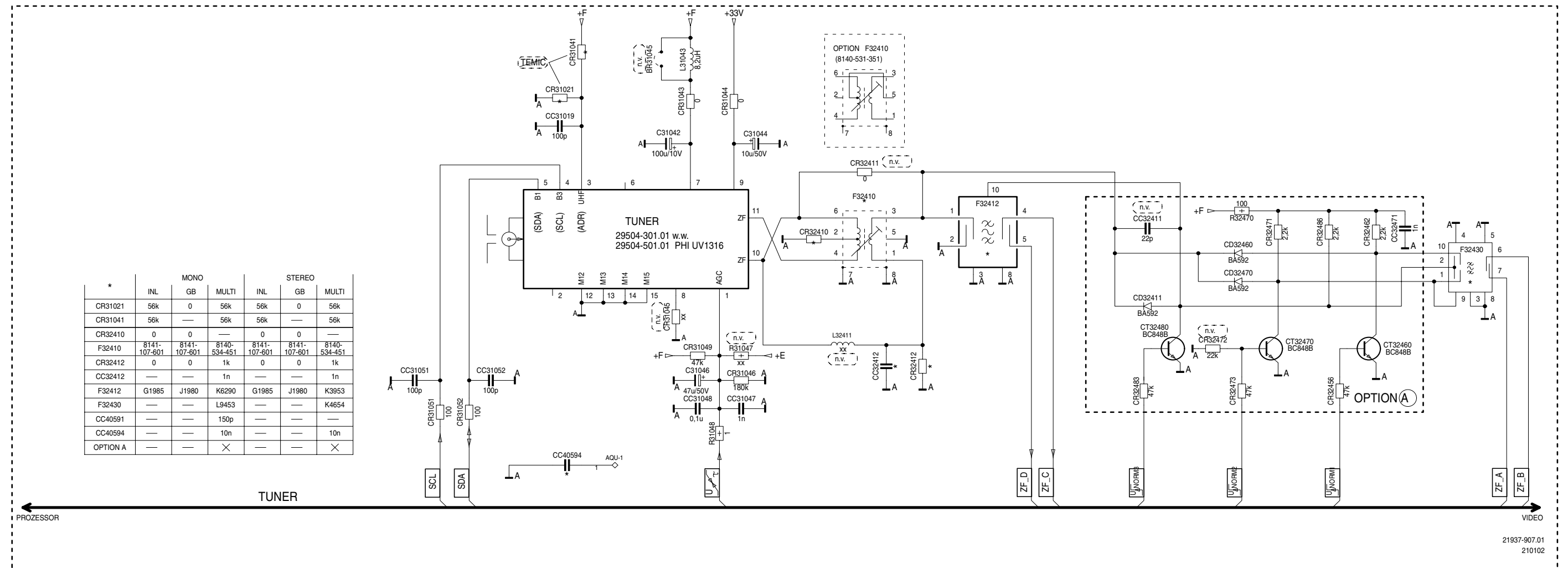
# Teilschaltplan Prozessor / Circuit Diagram Processor Section

\*\*\* oder OPTION – siehe Seite 3-21  
\*\*\* or OPTION – see page 3-21



Pin	Voltage
Pin 1	4,7V
Pin 2	5V
Pin 3	0V
Pin 4	0V
Pin 5	0V
Pin 6	0V
Pin 7	0V
Pin 8	0V
Pin 9	5V
Pin 10	0V
Pin 11	0V
Pin 12	4,9V
Pin 13	4,9V
Pin 14	5V
Pin 15	0,4V
Pin 16	0,7V
Pin 17	0,7V
Pin 18	0V
Pin 19	4,9V
Pin 20	4,9V
Pin 21	4,9V
Pin 22	0V
Pin 23	0V
Pin 24	0V
Pin 25	4,9V
Pin 26	4,9V
Pin 27	0V
Pin 28	0V
Pin 29	0V
Pin 30	0V
Pin 31	5V
Pin 32	0V
Pin 33	2,4V
Pin 34	1,3V
Pin 35	0V
Pin 36	0V
Pin 37	0V
Pin 38	0V
Pin 39	4,9V
Pin 40	0,9V
Pin 41	1,8V
Pin 42	2,2V
Pin 43	3,1V
Pin 44	4,9V
Pin 45	4,9V
Pin 46	0V
Pin 47	3,8V
Pin 48	2,5V
Pin 49	4,6V
Pin 50	0V
Pin 51	0V
Pin 52	4,9V
Pin 53	0,1V
Pin 54	0V
Pin 55	0V
Pin 56	1,9V

Teilschaltplan Tuner / Circuit Diagram Tuner Section

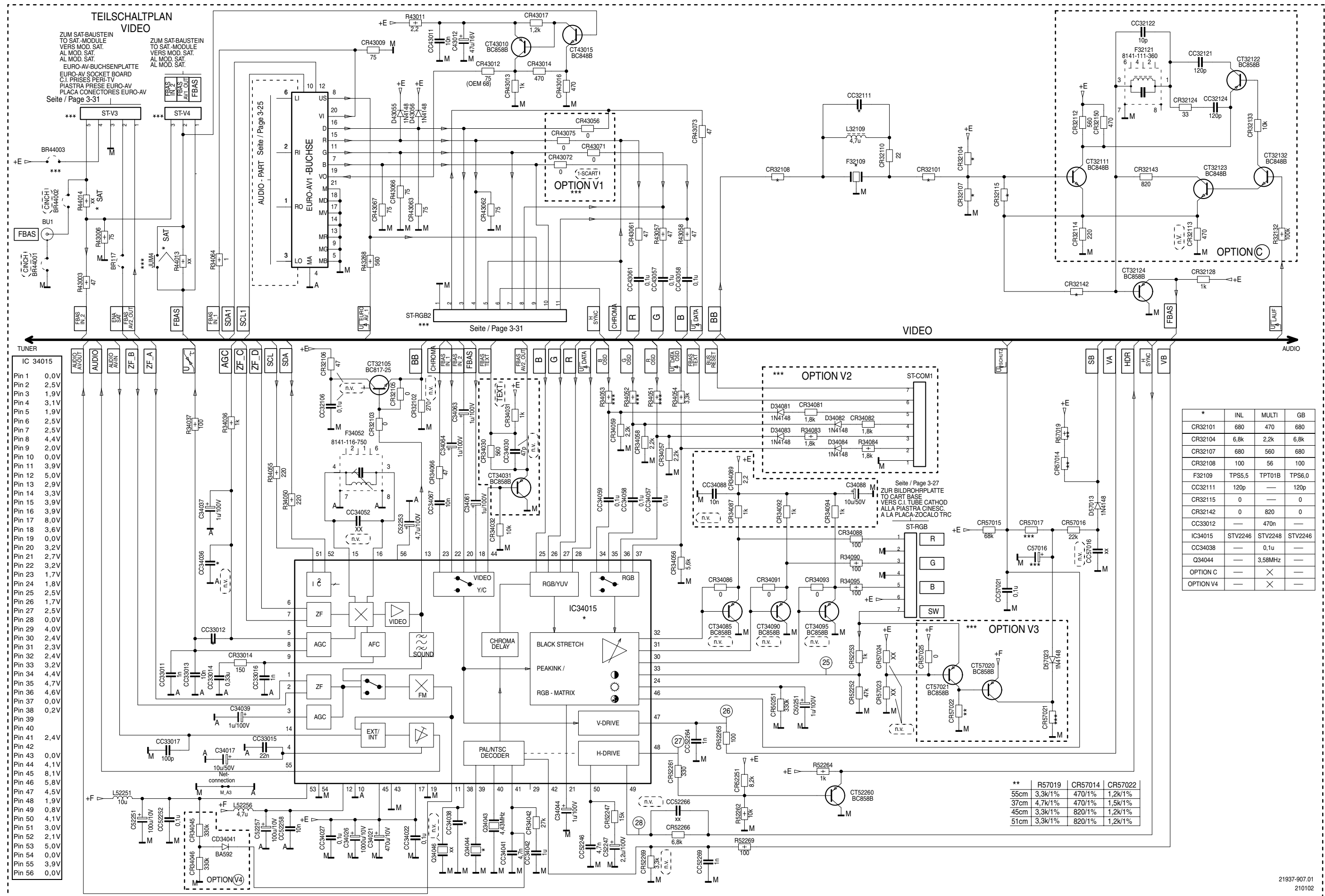


FIRMA	OEM-L	OEM-L	OEM-L	OEM-L	OEM-L
AUSFUHRUNG	m. TEXT	m. TEXT	m. TEXT	m. TEXT	m. TEXT
***	MONO	STEREO	FM	TM	COM./H
SAT moeglich	X	X	—	—	—
OPTION uP1	—	—	—	—	—
OPTION uP2/uP3	X	X	X	X	X
OPTION uP4	—	—	—	—	X
OPTION uP5	X	X	X	X	X
OPTION uP6	—	—	—	—	—
OPTION uP7	X	X	X	X	X
OPTION V1	X	X	X	—	—
OPTION V2	—	—	—	—	—
OPTION uP9a/uP9b/uP10/V3	X	X	X	X	X
OPTION NF1	—	—	—	X	—
CR31041	56k	56k	—	56k	56k
R34051/R34052/R34053	1k	1k	1k	1k	1k
CL40511	X	X	X	—	—
L40512	X	X	X	—	—
D40585	—	—	—	—	—
ST-BAT3	—	—	—	X	X
R43001/R43112	—	—	—	X	X
BR44003	X	—	—	X	X
R44013	—	—	X	X	X
C57016	10u/50V	10u/50V	10u/50V	10u/50V	10u/50V
CR57017	15k	15k	15k	15k	15k
CR57021	1,5k	1,5k	1,5k	1,5k	1,5k
BR80501/502	—	—	—	X	X
CR80501	X	X	—	—	—
CR81008	X	X	X	—	—
CR81009	—	—	—	X	X
CC81037	—	—	10n	—	—
R81039/BR81039	—	—	X	—	—
CR81041/CC81041	X	X	X	X	X
R81055	22k	22k	22k	22k	22k
CR81059/CC81059/R81060	—	—	—	X	X
R81090	—	—	—	X	X
BR81506	—	—	—	—	—
CR81509	0	0	0	0	0
BR81701	—	—	—	X	X
BR81702	X	X	X	X	X
BR81704	—	—	—	—	X
BR81705/BR84501	—	—	—	—	—
BR84501	—	—	—	—	—
BR84502	X	X	X	X	X
ST-M-LED	—	—	—	—	X
ST-HOSP1/ST-HOSP2	—	—	—	X	X
ST-MAIL-TV	—	—	—	X	X
OPTION uP8/ST-V3	X	X	—	X	X
ST-V4	X	X	—	—	—
ST-RGB2	—	—	—	X	X
ST-COM1	—	—	—	—	—
ST-COM2	—	—	—	—	X
ST-A1/ST-A2	X	X	X	—	—
ST-UHR	—	—	—	X	X
ST-UHR2	—	—	—	X	—
JUM12/34	X	X	—	—	—

moegliche COLOR - NORMEN	Q34043	Q34044	Q34046	CC34038	CR52269
PAL 4.43/NTSC 4.43	4.4336MHz	—	—	—	—
PAL 4.43/NTSC 4.43/SECAM	4.4336MHz	—	—	0,1u	—
PAL 4.43/NTSC 4.43/NTSC 3.58	4.4336MHz	3.5795MHz	—	—	—
PAL 4.43/NTSC 4.43/NTSC 3.58/SECAM	4.4336MHz	3.5795MHz	—	0,1u	—
NTSC 3.58/PAL M/PAL N (SOUTH AMERICA)	3.5795MHz	3.5756MHz	3.5820MHz	—	3,3k

# Teilschaltplan Video / Circuit Diagram Video Section

\*\*\* oder OPTION – siehe Seite 3-21  
\*\*\* or OPTION – see page 3-21



**TUNER**

IC 34015

Pin 1	0,0V
Pin 2	2,5V
Pin 3	1,9V
Pin 4	3,1V
Pin 5	1,9V
Pin 6	2,5V
Pin 7	2,5V
Pin 8	4,4V
Pin 9	2,0V
Pin 10	0,0V
Pin 11	3,9V
Pin 12	5,0V
Pin 13	2,9V
Pin 14	3,3V
Pin 15	3,9V
Pin 16	3,9V
Pin 17	8,0V
Pin 18	3,6V
Pin 19	0,0V
Pin 20	3,2V
Pin 21	2,7V
Pin 22	3,2V
Pin 23	1,7V
Pin 24	1,8V
Pin 25	2,5V
Pin 26	1,7V
Pin 27	2,5V
Pin 28	0,0V
Pin 29	4,0V
Pin 30	2,4V
Pin 31	2,4V
Pin 32	2,4V
Pin 33	3,2V
Pin 34	4,4V
Pin 35	4,7V
Pin 36	4,6V
Pin 37	0,0V
Pin 38	0,2V
Pin 39	
Pin 40	
Pin 41	2,4V
Pin 42	
Pin 43	0,0V
Pin 44	4,1V
Pin 45	8,1V
Pin 46	5,8V
Pin 47	4,5V
Pin 48	1,9V
Pin 49	0,8V
Pin 50	4,1V
Pin 51	3,0V
Pin 52	2,1V
Pin 53	5,0V
Pin 54	0,0V
Pin 55	3,9V
Pin 56	0,0V

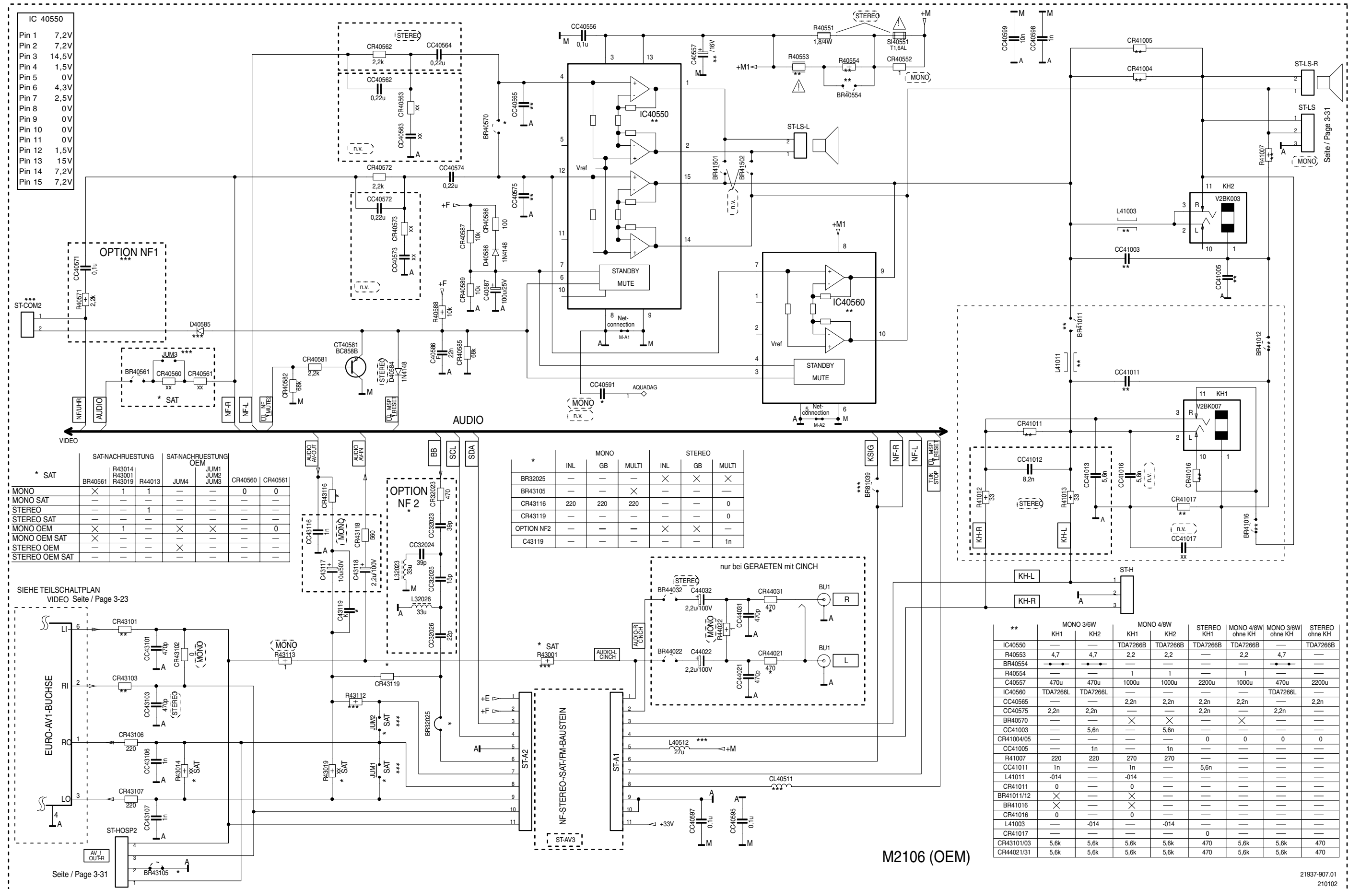
*	INL	MULTI	GB
CR32101	680	470	680
CR32104	6,8k	2,2k	6,8k
CR32107	680	560	680
CR32108	100	56	100
F32109	TPS5,5	TPT01B	TPS6,0
CC32111	120p	—	120p
CR32115	0	—	0
CR32142	0	820	0
CC33012	—	470n	—
IC34015	STV2246	STV2248	STV2246
CC34038	—	0,1u	—
Q34044	—	3,58MHz	—
OPTION C	—	×	—
OPTION V4	—	×	—

\*\*

	R57019	CR57014	CR57022
55cm	3,3k/1%	470/1%	1,2k/1%
37cm	4,7k/1%	470/1%	1,5k/1%
45cm	3,3k/1%	820/1%	1,2k/1%
51cm	3,3k/1%	820/1%	1,2k/1%

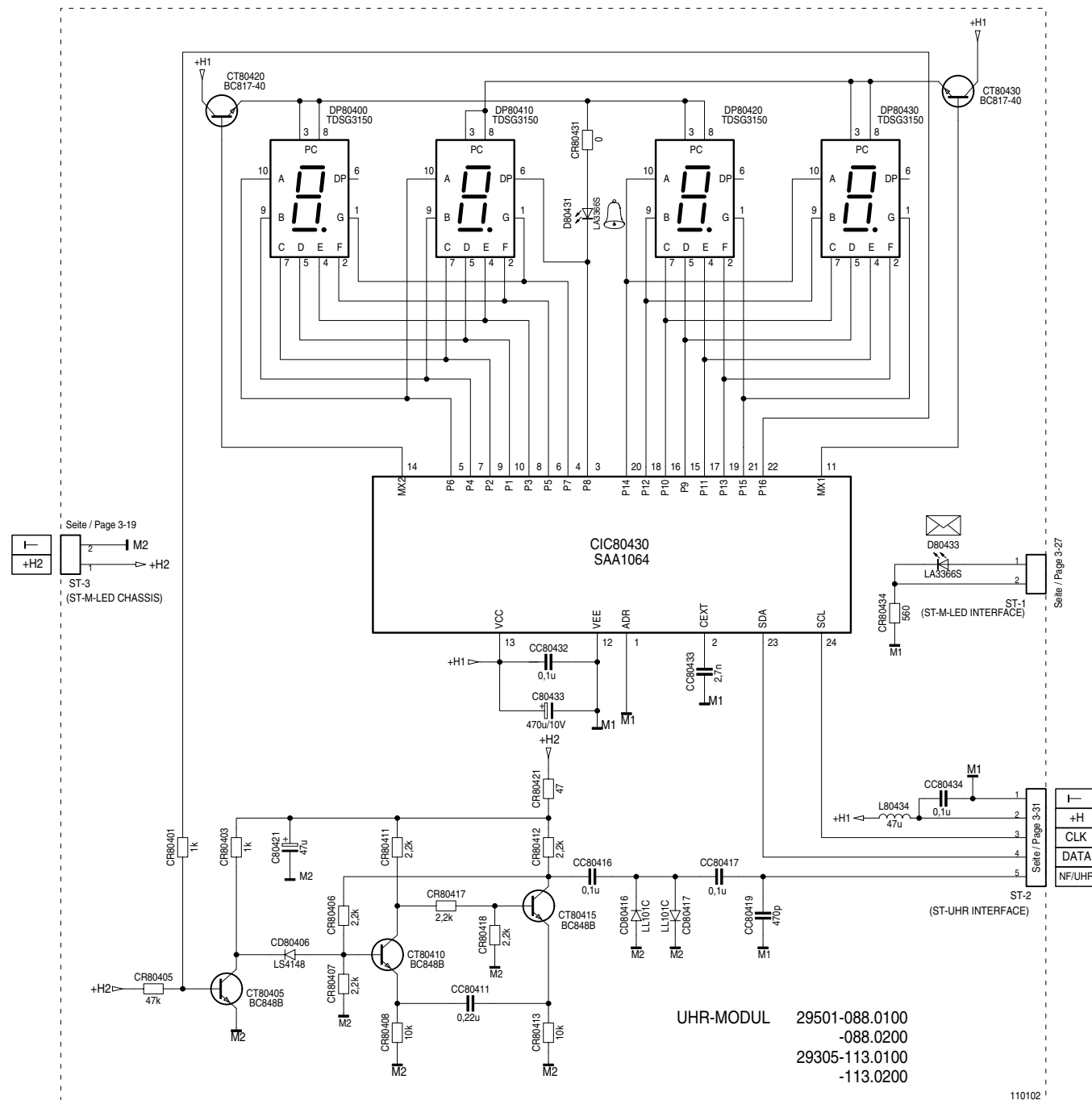
Teilschaltplan Audio / Circuit Diagram Audio

\*\*\* oder OPTION – siehe Seite 3-21  
 \*\*\* or OPTION – see page 3-21

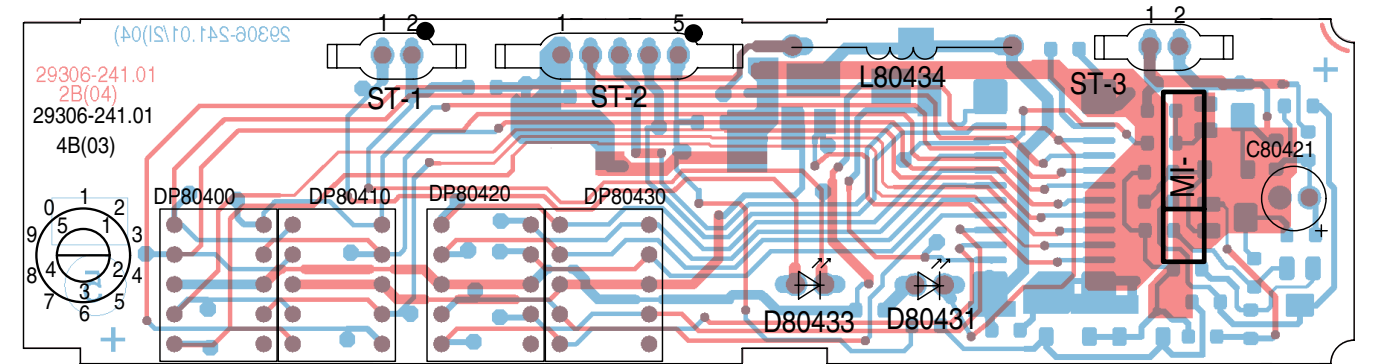




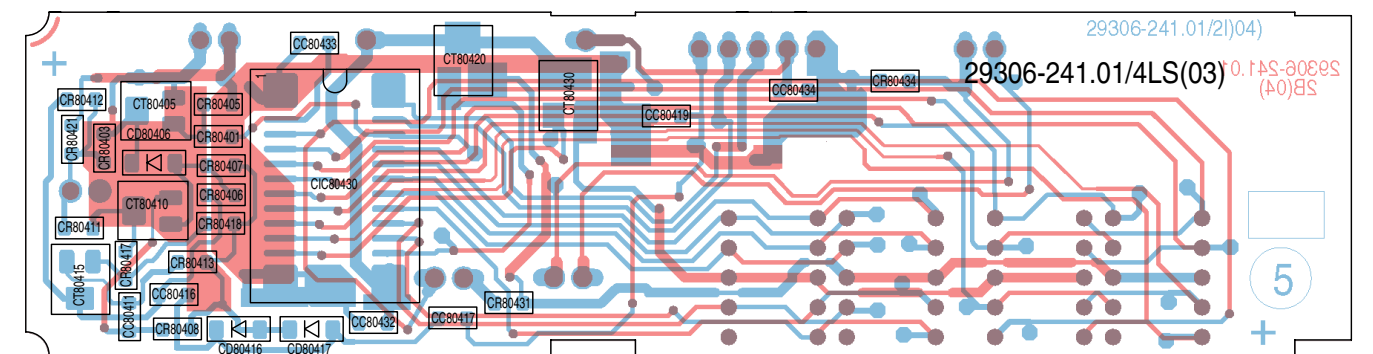
**Uhr-Modul / Clock Module**



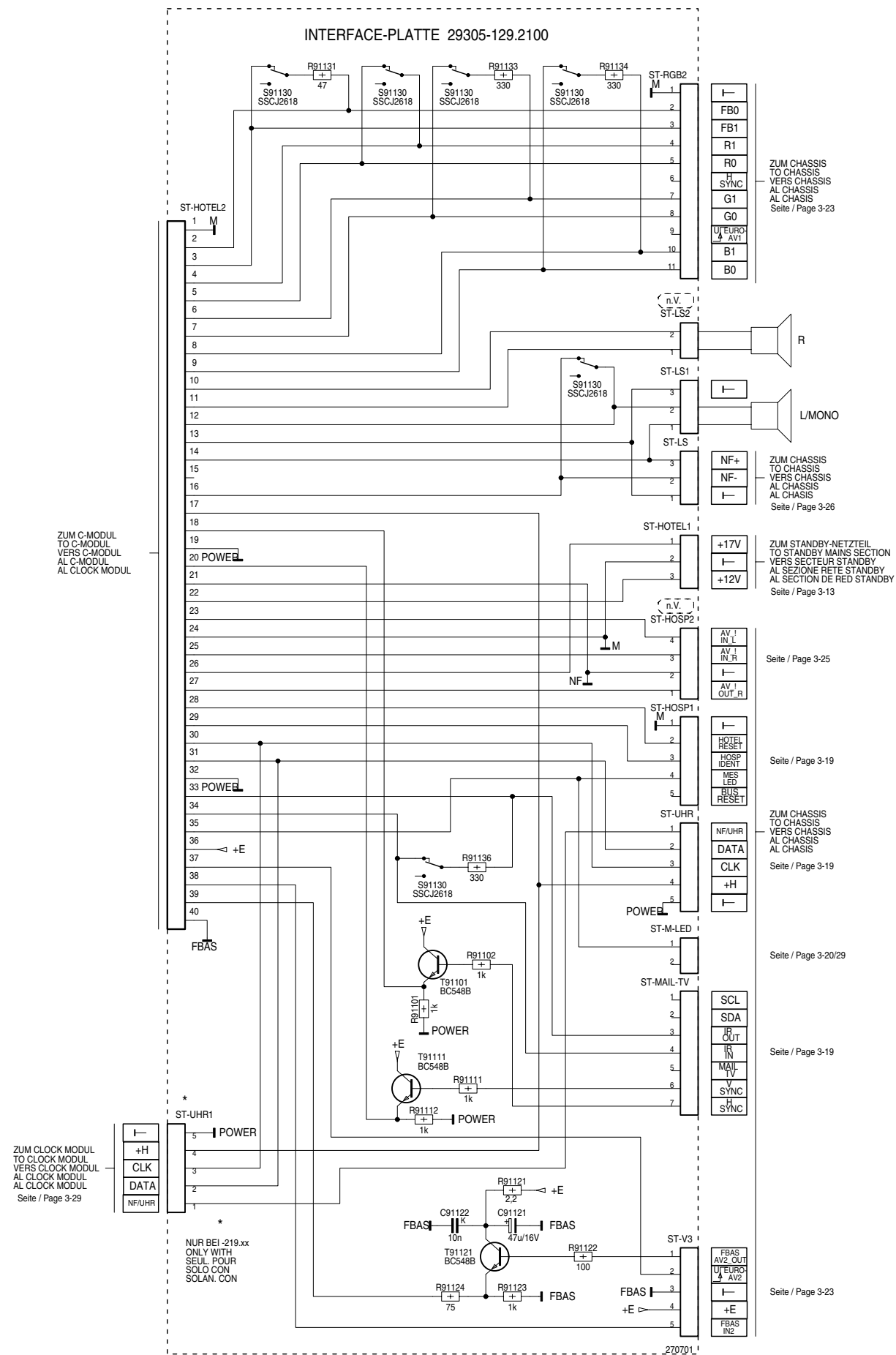
**Bestückungsseite, Ansicht von oben  
Component Side, Top View**



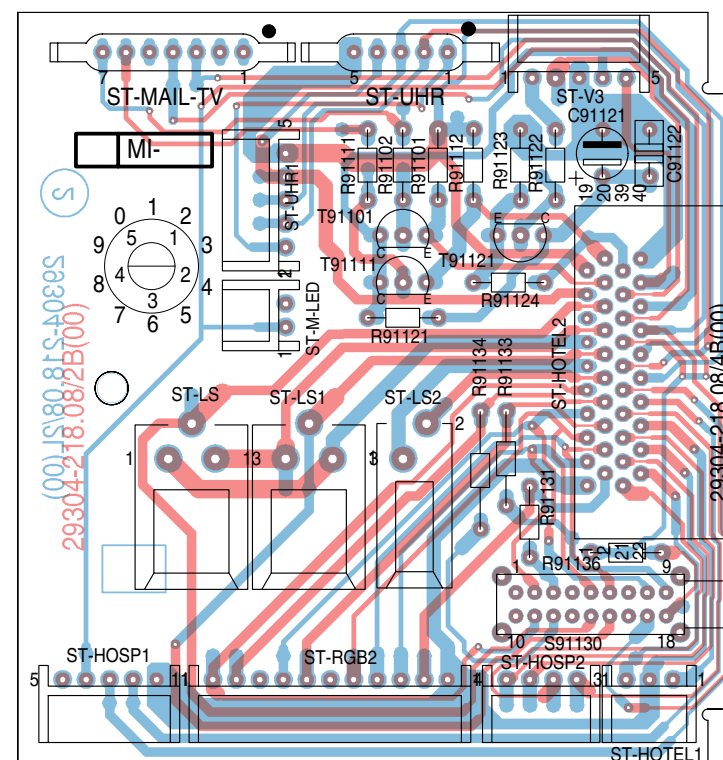
**Lötseite, Ansicht von unten  
Solder Side, Bottom View**



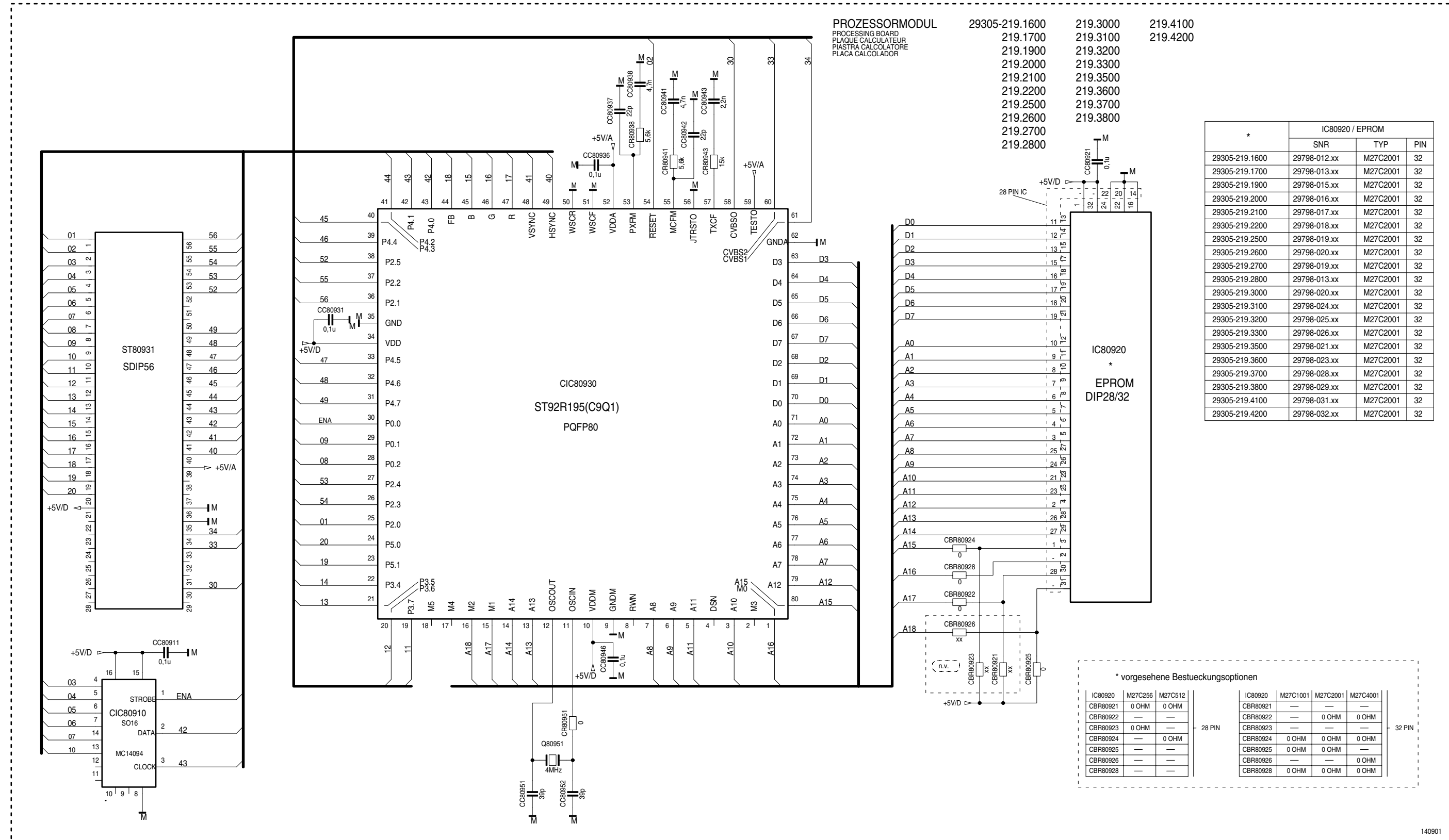
Interfaceplatte / Interface Board



Bestückungsseite, Ansicht von oben  
Component Side, Top View



Prozessorplatte / Processing Board



PROZESSORMODUL  
PROCESSING BOARD  
PLAQUE CALCULATEUR  
PIASTRA CALCOLATORE  
PLACA CALCULADOR

29305-219.1600	219.3000	219.4100
219.1700	219.3100	219.4200
219.1900	219.3200	
219.2000	219.3300	
219.2100	219.3500	
219.2200	219.3600	
219.2500	219.3700	
219.2600	219.3800	
219.2700		
219.2800		

*	IC80920 / EPROM		
	SNR	TYP	PIN
29305-219.1600	29798-012.xx	M27C2001	32
29305-219.1700	29798-013.xx	M27C2001	32
29305-219.1900	29798-015.xx	M27C2001	32
29305-219.2000	29798-016.xx	M27C2001	32
29305-219.2100	29798-017.xx	M27C2001	32
29305-219.2200	29798-018.xx	M27C2001	32
29305-219.2500	29798-019.xx	M27C2001	32
29305-219.2600	29798-020.xx	M27C2001	32
29305-219.2700	29798-019.xx	M27C2001	32
29305-219.2800	29798-013.xx	M27C2001	32
29305-219.3000	29798-020.xx	M27C2001	32
29305-219.3100	29798-024.xx	M27C2001	32
29305-219.3200	29798-025.xx	M27C2001	32
29305-219.3300	29798-026.xx	M27C2001	32
29305-219.3500	29798-021.xx	M27C2001	32
29305-219.3600	29798-023.xx	M27C2001	32
29305-219.3700	29798-028.xx	M27C2001	32
29305-219.3800	29798-029.xx	M27C2001	32
29305-219.4100	29798-031.xx	M27C2001	32
29305-219.4200	29798-032.xx	M27C2001	32

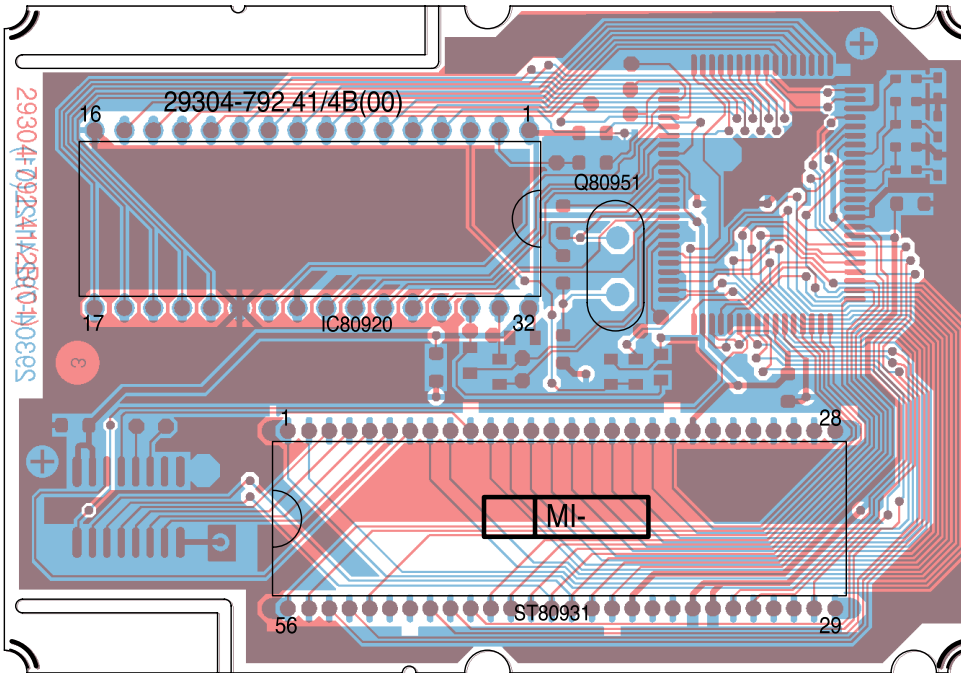
\* vorgesehene Bestueckungsoptionen

IC80920	M27C256	M27C512	IC80920	M27C1001	M27C2001	M27C4001
CBR80921	0 OHM	0 OHM	CBR80921	—	—	—
CBR80922	—	—	CBR80922	—	0 OHM	0 OHM
CBR80923	0 OHM	—	CBR80923	—	—	—
CBR80924	—	0 OHM	CBR80924	0 OHM	0 OHM	0 OHM
CBR80925	—	—	CBR80925	0 OHM	0 OHM	—
CBR80926	—	—	CBR80926	—	—	0 OHM
CBR80928	—	—	CBR80928	0 OHM	0 OHM	0 OHM

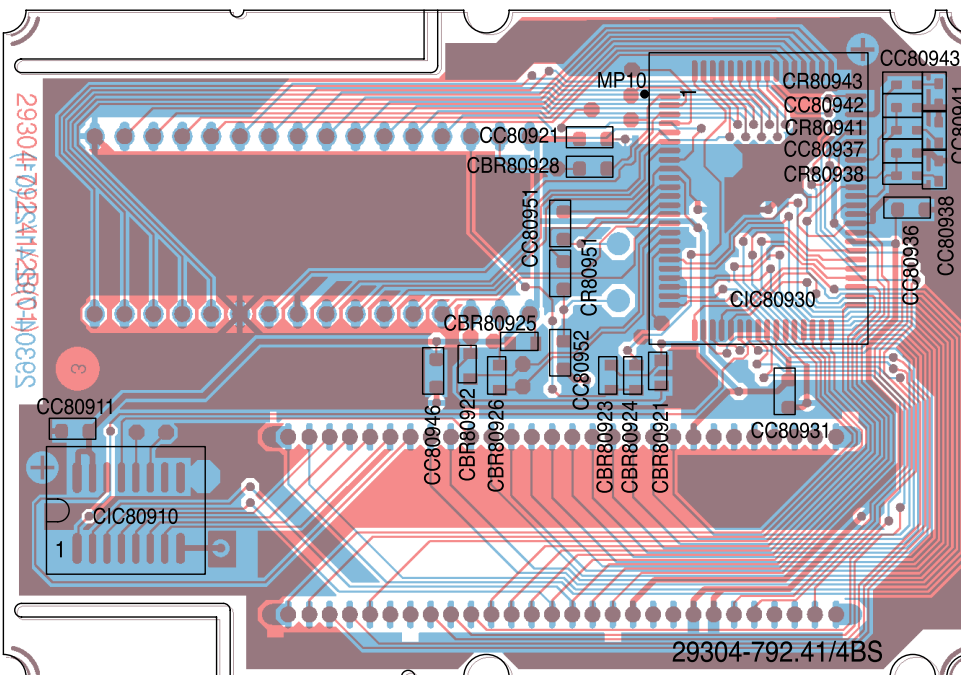


# Prozessor-Platte / Processing Board

## Bestückungsseite / Component Side



## Bestückungsseite (SMD) / Component Side (SMD)



## Ersatzteilliste/Spare Parts List / Geräteersatzteillisten/TV Parts of the sets

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description	M155 TM graph. (VNM)	M155 TM graph. (VNA)	M155 TM cham. (VNM)	M155 TM cham. (VNA)
0200.000	90370 984	GEH-VORDERTEIL DRUCK KPL CABINET FRONT PART PRINT CPL	X	X		
0200.000	90371 941	GEH-VORDERTEIL DRUCK KPL CABINET FRONT PART PRINT CPL				
0201.000	90336 949	LAUTSPRECHER SPEAKER	X	X	X	X
0218.000	90356 943	TASTENKNOPF NETZSCHALTER KEY KNOB MAINS SWITCH	X	X		
0218.000	90357 916	TASTENKNOPF NETZSCHALTER POWER KEY MAINS SWITCH			X	X
0230.000	90357 953	IR-FENSTER IR WINDOW	X	X	X	X
0300.000	90365 931	GEH-RUECKTEIL OFB CABINET REAR PART SURFACE TREATED	X	X		
0300.000	90357 935	GEH-RUECKTEIL OFB CABINET REAR PART SURFACE TREATED			X	X
0315.000	90336 969 2	ZWISCHENSTUECK RUECKWANDBEFESTIGUNG INTERMEDIATE PIECE REAR PANEL FIXING	X	X	X	X
0320.000	90371 903	TYPENAUFKLEBER VNM TYPE LABEL SELF ADHESIVE VNM	X		X	
0320.000	90371 997	TYPENAUFKLEBER VNA TYPE LABEL SELF ADHESIVE VNA		X		
0450.000	90336 931	HALTER FÜR WANDHALTER HOLDER FOR WALLHOLDER	X	X		
0400.000	90357 991	MODUL-UHR KPL CLOCK MODULE CPL	X	X	X	X
0450.000	90336 931	HALTER FÜR WANDHALTER HOLDER FOR WALLHOLDER	X	X	X	X
0700.000	90372 935 Δ	ENTMAGNETISIERUNGSSPULE COIL DEGAUSSING	X	X	X	X
0750.000	90337 925 4	EINSATZBUCHSE BILDROHR INSERT SOCKET PICTURE TUBE	X	X	X	X
1100.000	26643 Δ	BILDROHR A 51 EAL155X01 PHILIPS PICTURE TUBE A 51 EAL155X01 PHILIPS	X	X	X	X
1200.000	90341 963 Δ	ANODENKAPPE M.HOCHSPANNUNGSKABEL ANODE CAP W.HIGH VOLTAGE CABLE	X	X	X	X
2000.000	90359 956 Δ	NETZKABEL KPL POWER CABLE CPL	X	X		
2300.000	90364 975 X	BILDROHRPLATTE PICTURE TUBE BOARD	X	X	X	X
2600.000	90371 959	SERVICE MANUAL D/GB	X	X	X	X
	90371 978 X	CHASSIS-FS-MONO / CHASSIS-TV-MONO M 2106 KEIN E-TEIL / NO SPARE PART	X			
	90370 966 X	CHASSIS-FS-MONO / CHASSIS-TV-MONO M 2106 KEIN E-TEIL		X	X	
	90343 987 90345 993	POLSTER-SCHALENSATZ / PACKING PAD-SET VERPACKUNGSKARTON / CARTON	X X	X X		
		X = SIEHE GESONDERTE E-LISTE SEE SEPARATE PARTS LIST				

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description	M155 H graph. (VNM)	M155 H graph. (VNA)
0200.000	90372 972	GEH-VORDERTEIL DRUCK KPL CABINET FRONT PART PRINT CPL	X	X
0201.000	90336 949	LAUTSPRECHER SPEAKER	X	X
0203.000	90347 933	ABDECKUNG KOPFHOERERBUCHSE COVER EAR PHONE SOCKET	X	X
0218.000	90357 916	TASTENKNOPF NETZSCHALTER POWER KEY MAINS SWITCH	X	X
0225.000	90372 954	LICHTLEITER LIGHT GUIDE	X	X
0230.000	90356 962	IR-FENSTER IR WINDOW	X	X
0300.000	90347 952	GEH-RUECKTEIL OFB CABINET REAR PART SURFACE TREATED	X	X
0315.000	90336 969 2	ZWISCHENSTUECK RUECKWANDBEFESTIGUNG INTERMEDIATE PIECE REAR PANEL FIXING	X	X
0320.000	90371 921	TYPENAUFKLEBER VNM TYPE LABEL SELF ADHESIVE VNM	X	
0320.000	90371 997	TYPENAUFKLEBER VNA TYPE LABEL SELF ADHESIVE VNA		X
0450.000	90336 931	HALTER FÜR WANDHALTER HOLDER FOR WALLHOLDER	X	X
0700.000	90372 935 Δ	ENTMAGNETISIERUNGSSPULE COIL DEGAUSSING	X	X
0750.000	90337 925 4	EINSATZBUCHSE BILDROHR INSERT SOCKET PICTURE TUBE	X	X
1100.000	26643 Δ	BILDROHR A 51 EAL155X01 PHILIPS PICTURE TUBE A 51 EAL155X01 PHILIPS	X	X
1200.000	90341 963 Δ	ANODENKAPPE M.HOCHSPANNUNGSKABEL ANODE CAP W.HIGH VOLTAGE CABLE	X	X
2000.000	90359 956 Δ	NETZKABEL KPL POWER CABLE CPL	X	X
2300.000	90364 975 X	BILDROHRPLATTE PICTURE TUBE BOARD	X	X
2600.000	90371 959	SERVICE MANUAL D/GB	X	X
	90371 978 X	CHASSIS-FS-MONO / CHASSIS-TV-MONO M 2106 KEIN E-TEIL / NO SPARE PART	X	
	90370 966 X	CHASSIS-FS-MONO / CHASSIS-TV-MONO M 2106 KEIN E-TEIL		X
	90343 987 90345 993	POLSTER-SCHALENSATZ / PACKING PAD-SET VERPACKUNGSKARTON / CARTON	X X	X X
		X = SIEHE GESONDERTE E-LISTE SEE SEPARATE PARTS LIST		

## Chassis M155 H

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 H 884-90370.966
0100.000	90373 911	TUNER-PLL
0203.000	90359 974	ABDECKUNG BUCHSEN / COVER SOCKETS
0204.000	90360 949	ABDECKUNG HOSPITAL-MODUL / COVER HOSPITAL MODULE
0240.000	90337 927	KOPFHOERERBU. 3,5mm M.SCHALTER / HEADPH. SOCKET 3.5mm WITH SWITCH
0247.000	90372 973	EURO-AV BUCHSENLEISTE 21-POL SW / EURO-AV SOCKET STRIP 21 PIN BLACK
0400.000	90348 985	NETZTEIL 12/17V / POWER SUPPLY 12/17V
0450.000	90349 941	FUEHRUNG F.LEITERPLATTE / GUIDE F.PCB
0500.000	90372 992	INTERFACE-EINHEIT / INTERFACE UNIT
0600.000	90373 931	LEITERPLATTE HOSPITAL-MODUL KPL / PCB HOSPITAL MODULE
0910.000	90336 953	FOKUSLEITUNG / FOCUSING CABLE
1000.000	90345 933	SICHERUNGSHALTER SI60251/62501 / FUSE HOLDER SI60251/62501
1030.000	90349 979	SCHIEBESCHALTER / SLIDE SWITCH
1035.000	90355 960	ISOLIERFOLIE 65X60 / FOIL INSULATION 65X60
2000.000	90371 979	△ NETZSCHALTER O.WISCHER / POWER SWITCH W/O WIPER
2200.000	90337 984	△ NETZ EINBAUGERAETESTECKER / APPLIANCE COUPLER
2400.000	90371 998	MONTAGECLIP IC40550 / MOUNTING CLIP IC40550
2420.000	90345 971	MONTAGECLIP T53001/IC50010 / MOUNTING CLIP T53001/IC50010
2430.000	90349 998	MONTAGECLIP IC61211 / MOUNTING CLIP IC61211
2440.000	90338 921	MONTAGECLIP T60506 / MOUNTING CLIP T60506
2445.000	90343 965	MONTAGECLIP IC61040/61050/61060 / MOUNTING CLIP IC61040/61050/61060
2470.000	90338 959	FOLIE WAERMELEITEND / FOIL HEAT CONDUCTING T60506/IC61040/61050/61060
		WW. = WAHLWEISE / WW. = VARIANTE
C 34026	90339 944	ELKO 1000UF +50-20% 10V
C 40557	90336 972	ELKO 1000UF 20% 16V
C 50047	90372 993	ELKO 1000UF 20% 35V
C 50048	90364 961	ELKO 1000UF 20% 25V
C 53002	90350 916	FOKO KF #35 9000PF 3,5% 1500V
C 54011	90337 928	KERKO HV C 100PF 20% 1KV
C 54012	90372 993	ELKO 1000UF 20% 35V
C 60210	90338 903	△ KERKO SI 1000PF 20% 400V
C 60251	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 60252	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 60253	90338 903	△ KERKO SI 1000PF 20% 400V
C 60254	90338 903	△ KERKO SI 1000PF 20% 400V
C 60256	90337 966	KERKO HV C 1000PF 20% 1KV
C 60257	90337 966	KERKO HV C 1000PF 20% 1KV
C 60258	90337 966	KERKO HV C 1000PF 20% 1KV
C 60259	90337 966	KERKO HV C 1000PF 20% 1KV
C 60501	90337 966	KERKO HV C 1000PF 20% 1KV
C 60509	90364 999	FOKO FKP1 680PF 10% 1600V
C 60512	90363 945	KERKO HV C 270PF 20% 2KV
C 60523	90337 966	KERKO HV C 1000PF 20% 1KV
C 60524	90337 966	KERKO HV C 1000PF 20% 1KV
C 60526	90337 966	KERKO HV C 1000PF 20% 1KV
C 60527	90337 966	KERKO HV C 1000PF 20% 1KV
C 61016	90363 926	FOKO FKP1 220PF 10% 1600V
C 61036	90337 928	KERKO HV C 100PF 20% 1KV
C 61056	90337 928	KERKO HV C 100PF 20% 1KV
C 61211	90337 928	KERKO HV C 100PF 20% 1KV
C 62501	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 62521	90363 983	△ KERKO SI 2200PF 20% 400V
C 62522	90363 983	△ KERKO SI 2200PF 20% 400V
C 62549	90364 939	△ KERKO SI 1000PF 20% 400V
C 81063	90338 922	EMIFIL 0,1 UF -GR
CIC 80910	90338 941	SMD IC MC14094BD

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 H 884-90370.966
CIC 80930	90364 958	SMD IC ST92R195C9Q1-EOS
CIC 82501	90364 977	SMD IC M24C08CM1TR
CT 32124	90307 916	SMD TRANS BC858B/BC857B
CT 34031	90307 916	SMD TRANS BC858B/BC857B
CT 40581	90307 916	SMD TRANS BC858B/BC857B
CT 43010	90307 916	SMD TRANS BC858B/BC857B
CT 43015	90306 998	SMD TRANS BC848B/BC847B
CT 50005	90306 998	SMD TRANS BC848B/BC847B
CT 50015	90306 998	SMD TRANS BC848B/BC847B
CT 50040	90306 998	SMD TRANS BC848B/BC847B
CT 50050	90306 998	SMD TRANS BC848B/BC847B
CT 50055	90306 998	SMD TRANS BC848B/BC847B
CT 52260	90307 916	SMD TRANS BC858B/BC857B
CT 57020	90307 916	SMD TRANS BC858B/BC857B
CT 57021	90307 916	SMD TRANS BC858B/BC857B
CT 57112	90307 916	SMD TRANS BC858B/BC857B
CT 57113	90307 916	SMD TRANS BC858B/BC857B
CT 57124	90306 998	SMD TRANS BC848B/BC847B
CT 61043	90306 998	SMD TRANS BC848B/BC847B
CT 61053	90306 998	SMD TRANS BC848B/BC847B
CT 81220	90306 998	SMD TRANS BC848B/BC847B
CT 81225	90306 998	SMD TRANS BC848B/BC847B
CT 85502	90307 916	SMD TRANS BC858B/BC857B
D 40586	31 818	DIODE 1N4148
D 43055	31 818	DIODE 1N4148
D 43056	31 818	DIODE 1N4148
D 50023	90082 959	DIODE 1N4004
D 50048	90365 914	Z-DIODE ZPY5,6 2%
D 52001	31 818	DIODE 1N4148
D 53003	44 799	DIODE BA157
D 54001	90337 929	DIODE BYV16
D 54011	44 799	DIODE BA157
D 54022	90365 933	Z-DIODE 30B 0,5W
D 57013	31 818	DIODE 1N4148
D 57023	31 818	DIODE 1N4148
D 60202	49 148	DIODE BA159
D 60203	90350 973	Z-DIODE BZT03D180
D 60204	94 891	DIODE BAV21
D 60213	90348 948	Z DIODE 16B 0,5W
D 60256	79 585	DIODE 1N4007
D 60257	79 585	DIODE 1N4007
D 60258	79 585	DIODE 1N4007
D 60259	79 585	DIODE 1N4007
D 60506	90337 967	△ DIODE BYT54M
D 60509	90350 973	△ Z-DIODE BZT03D180
D 60512	90365 952	DIODE BYT53B
D 60523	90363 927	GLR.SKB380C1500
D 61016	90337 986	△ DIODE BYW178
D 61036	90348 967	△ DIODE BYT108-400
D 61056	24 689	△ DIODE BYW172D
D 61211	90348 986	DIODE BYT53D
D 85511	90363 946	LE-DIODE L-119EGW
WW.	90349 904	LE-DIODE TLHY4605
F 32109	90373 988	KERTRAP #521 5,5MHZ
F 32410	90363 965	SPULE 7X7 #601 SIGN107601
F 32412	90363 984	OFWFL G1985M
F 34052	90364 902	FILTER 7X7 #750 SIGN11675

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 H 884-90370.966
IC 34015	90364 921	IC STV2246
IC 40550	90371 994	IC TDA7266B
IC 50010	90373 969	IC TDA8174AW
IC 60201	90349 923	IC VIPER20A/022Y
IC 60510	90364 978	IC TDA16846
IC 61040	98 831	IC LM317T
IC 61050	98 831	IC LM317T
IC 61060	805 071	IC MC7805CT
IC 61211	79 382	IC MC7812CT
IC 80500	90336 975	IC MC33164P-5RP
IC 80920	90374 943	IC 27C020 PROG.KPL
IC 81500	90374 962	PROZESSORPLATTE
WW.	90375 919	IC ST92195C9B1-S551
IC 81710	11 400	IC HEF4066BP
IC 84501	90336 994	IC TSOP1236
L 31043	90337 969	DR ST 0411-GRP 8,2UH 10%
L 32109	90365 934	DR 0309 4,7UH 10%
L 41003	90336 976	DAEMPF-PERLE 433003038102
L 52251	90339 984	DR AX 0411-GA 10UH 10%
L 52256	90365 953	DR AX 0411-GA 3,3UH 10%
L 53003	90336 995	FERRITPERLE HF70 BTL 3,5X
L 53011	90337 913	DR A AX-GA 10UH 10%
L 53021	90337 932	LINEARITAETSREGLER
L 53074	90363 949	ZB-SPULE
L 60251	90349 961	FUNKENTSTOERDROSSEL
L 60506	90337 989	FERRITPERLE 3,6UH 5720500
L 61038	90338 907	FERRITPERLE BL02RN2-R62
L 61211	90336 976	DAEMPF-PERLE 433003038102
L 62501	90338 926	FUNKENTSTOERDROSSEL
L 81061	90338 945	FERRITPERLE HF55 BTL 3,5X
L 81062	90363 947	DR 0411 10UH 5%
L 81064	90363 947	DR 0411 10UH 5%
OK 60210	17 531	OPTOKOPPLER
Q 34043	90363 966	QUARZ 4,433619MHZ
Q 80001	90363 985	QUARZ 4MHZ
Q 80951	90364 903	QUARZ 4MHZ
R 40553	90337 933	KSW SI B 2,2 OHM 5%
R 43006	90348 968	KSW 0204 75 OHM 5%
R 50047	90372 994	MSW 0207 1,1 OHM 1%
R 50048	90364 941	MOW 0411 22 OHM 5%
R 50050	90363 968	MOW 0411 150 OHM 5%

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 H 884-90370.966
R 52004	90344 997	MOW 0411 150 OHM 5%
R 53002	90338 927	KSW NB 0207 10 KOHM 5%
R 53009	90336 998	MGW AX 1 MOHM 5%
R 53011	90363 988	MOW 0411 6,8 OHM 5%
R 53016	90356 978	DRW 9 10 OHM 10%
R 53021	90363 969	MOW 0411 820 OHM 5%
R 53033	90364 981	MOW 0411 1,5 OHM 5%
R 53074	90363 987	MOW 0617 820 OHM 5%
R 54001	90364 905	MOW 0411 10 OHM 5%
R 54006	90365 916	MOW 0411 2,2 OHM 5%
R 54022	90364 924	MOW 0617 39 KOHM 5%
R 60204	90348 949	MSW 0207 20 OHM 1%
R 60251	90337 934	MSW SI 0414 4,7 MOHM
R 60502	90365 935	KSW 0617 3 MOHM 2%
R 60504	90363 929	KSW 0617 1,2 MOHM 2%
R 60508	90345 972	MOW 0617 22 KOHM 5%
R 60509	90345 972	MOW 0617 22 KOHM 5%
R 60516	90363 948	ESTR.SK10-A 4,7 KOHM LIN
R 61018	90364 943	MOW 0411 82 KOHM 5%
R 62501	90356 997	PTC DUO T251-A80-A10
R 62502	90336 997	NTC 4,7 OHM 30%
R 62549	90337 934	MSW SI 0414 4,7 MOHM
R 91124	90348 968	KSW 0204 75 OHM 5%
SI 60201	90348 987	SI LOET T200MA 250V
SI 60251	37 597	SI 5X20 T2A L 250V
SI 61211	90349 905	SI LOET T800MA 250V
SI 62501	45 568	SI 5X20 T2,5A L 250V
T 52001	13561 020	TRANS BC637
T 53001	17452 002	TRANS S2055N
T 60506	90338 909	TRANS IRFBC40
T 91101	90344 922	TRANS BC548B/BC547B
T 91111	90344 922	TRANS BC548B/BC547B
T 91121	90344 922	TRANS BC548B/BC547B
TR 52001	90338 928	TRAFO TREIBER / TRANSFORMER DRIVER
TR 53020	90373 912	DIODEN-SPLIT TRAFO / TRANSFORMER DIODE SPLIT
TR 60201	90349 943	TRAFO SPERRWANDLER NETZTEIL B.O.TYPE CONVERTER TRANSFORMER POWER SUPPLY
TR 61000	90336 941	TRAFO SPERRWANDLER / B.O.TYPE CONVERTER TRANSFORMER

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 H 884-90371.978
0100.000	90338 958	TUNER-PLL
0203.000	90359 974	ABDECKUNG BUCHSEN / COVER SOCKETS
0204.000	90360 949	ABDECKUNG HOSPITAL-MODUL / COVER HOSPITAL MODULE
0240.000	90337 927	KOPFHOERERBU. 3.5mm M.SCHALTER / HEADPH. SOCKET 3.5mm WITH SWITCH
0247.000	90372 973	EURO-AV BUCHSENLEISTE 21-POL SW / EURO-AV SOCKET STRIP 21 PIN BLACK
0400.000	90348 985	NETZTEIL 12/17V / POWER SUPPLY 12/17V
0450.000	90349 941	FUEHRUNG F.LEITERPLATTE / GUIDE F.PCB
0500.000	90372 992	INTERFACE-EINHEIT / INTERFACE UNIT
0600.000	90373 931	LEITERPLATTE HOSPITAL-MODUL KPL / PCB HOSPITAL MODULE
0910.000	90336 953	FOKUSLEITUNG / FOCUSING CABLE
1000.000	90345 933	SICHERUNGSHALTER SI60251/62501 / FUSE HOLDER SI60251/62501
1030.000	90349 979	SCHIEBESCHALTER / SLIDE SWITCH
1035.000	90355 960	ISOLIERFOLIE 65X60 / FOIL INSULATION 65X60
2000.000	90371 979	NETZSCHALTER O.WISCHER / POWER SWITCH W/O WIPER
2200.000	90337 984	NETZ EINBAUGERAETESTECKER / APPLIANCE COUPLER
2400.000	90371 998	MONTAGECLIP IC40550 / MOUNTING CLIP IC40550
2420.000	90345 971	MONTAGECLIP T53001/IC50010 / MOUNTING CLIP T53001/IC50010
2430.000	90349 998	MONTAGECLIP IC61211 / MOUNTING CLIP IC61211
2440.000	90338 921	MONTAGECLIP T60506 / MOUNTING CLIP T60506
2445.000	90343 965	MONTAGECLIP IC61040/61050/61060 / MOUNTING CLIP IC61040/61050/61060
2470.000	90338 959	FOLIE WAERMELEITEND / FOIL HEAT CONDUCTING T60506/IC61040/61050/61060
		WW. = WAHLWEISE / WW. = VARIANTE
C 34026	90339 944	ELKO 1000UF +50-20% 10V
C 40557	90336 972	ELKO 1000UF 20% 16V
C 50047	90372 993	ELKO 1000UF 20% 35V
C 50048	90364 961	ELKO 1000UF 20% 25V
C 53002	90350 916	FOKO KF #35 9000PF 3,5% 1500V
C 54011	90337 928	KERKO HV C 100PF 20% 1KV
C 54012	90372 993	ELKO 1000UF 20% 35V
C 60210	90338 903	KERKO SI 1000PF 20% 400V
C 60251	90350 935	FOKO MP3 0,1UF 20% 275V
C 60252	90350 935	FOKO MP3 0,1UF 20% 275V
C 60253	90338 903	KERKO SI 1000PF 20% 400V
C 60254	90338 903	KERKO SI 1000PF 20% 400V
C 60256	90337 966	KERKO HV C 1000PF 20% 1KV
C 60257	90337 966	KERKO HV C 1000PF 20% 1KV
C 60258	90337 966	KERKO HV C 1000PF 20% 1KV
C 60259	90337 966	KERKO HV C 1000PF 20% 1KV
C 60501	90337 966	KERKO HV C 1000PF 20% 1KV
C 60512	90363 945	KERKO HV C 270PF 20% 2KV
C 60523	90337 966	KERKO HV C 1000PF 20% 1KV
C 60524	90337 966	KERKO HV C 1000PF 20% 1KV
C 60526	90337 966	KERKO HV C 1000PF 20% 1KV
C 60527	90337 966	KERKO HV C 1000PF 20% 1KV
C 61016	90363 926	FOKO FKP1 220PF 10% 1600V
C 61036	90337 928	KERKO HV C 100PF 20% 1KV
C 61056	90337 928	KERKO HV C 100PF 20% 1KV
C 61211	90337 928	KERKO HV C 100PF 20% 1KV
C 62501	90350 935	FOKO MP3 0,1UF 20% 275V
C 62521	90363 983	KERKO SI 2200PF 20% 400V
C 62522	90363 983	KERKO SI 2200PF 20% 400V
C 62549	90364 939	KERKO SI 1000PF 20% 400V
C 81063	90338 922	EMIFIL 0,1 UF -GR
CIC 80910	90338 941	SMD IC MC14094BD
CIC 80930	90364 958	SMD IC ST92R195C9Q1-EOS

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 H 884-90371.978
CIC 82501	90364 977	SMD IC M24C08CM1TR
CT 32124	90307 916	SMD TRANS BC858B/BC857B
CT 34031	90307 916	SMD TRANS BC858B/BC857B
CT 40581	90307 916	SMD TRANS BC858B/BC857B
CT 43010	90307 916	SMD TRANS BC858B/BC857B
CT 43015	90306 998	SMD TRANS BC848B/BC847B
CT 50005	90306 998	SMD TRANS BC848B/BC847B
CT 50015	90306 998	SMD TRANS BC848B/BC847B
CT 50040	90306 998	SMD TRANS BC848B/BC847B
CT 50050	90306 998	SMD TRANS BC848B/BC847B
CT 50055	90306 998	SMD TRANS BC848B/BC847B
CT 52260	90307 916	SMD TRANS BC858B/BC857B
CT 57020	90307 916	SMD TRANS BC858B/BC857B
CT 57021	90307 916	SMD TRANS BC858B/BC857B
CT 57112	90307 916	SMD TRANS BC858B/BC857B
CT 57113	90307 916	SMD TRANS BC858B/BC857B
CT 57124	90306 998	SMD TRANS BC848B/BC847B
CT 61043	90306 998	SMD TRANS BC848B/BC847B
CT 61053	90306 998	SMD TRANS BC848B/BC847B
CT 81220	90306 998	SMD TRANS BC848B/BC847B
CT 81225	90306 998	SMD TRANS BC848B/BC847B
CT 85502	90307 916	SMD TRANS BC858B/BC857B
D 40586	00031 818	DIODE 1N4148
D 43055	00031 818	DIODE 1N4148
D 43056	00031 818	DIODE 1N4148
D 50023	90082 959	DIODE 1N4004
D 50048	90365 914	Z-DIODE ZPY5,6 2%
D 52001	00031 818	DIODE 1N4148
D 53003	00044 799	DIODE BA157
D 54001	90337 929	DIODE BYV16
D 54011	00044 799	DIODE BA157
D 54022	90365 933	Z-DIODE 30B 0,5W
D 57013	00031 818	DIODE 1N4148
D 57023	00031 818	DIODE 1N4148
D 60202	00049 148	DIODE BA159
D 60203	90350 973	Z-DIODE BZT03D180
D 60204	00094 891	DIODE BAV21
D 60213	90348 948	Z DIODE 16B 0,5W
D 60256	00079 585	DIODE 1N4007
D 60257	00079 585	DIODE 1N4007
D 60258	00079 585	DIODE 1N4007
D 60259	00079 585	DIODE 1N4007
D 60506	90337 967	DIODE BYT54M
D 60509	90350 973	Z-DIODE BZT03D180
D 60512	90365 952	DIODE BYT53B
D 60523	90363 927	GLR.SKB380C1500
D 61016	90337 986	DIODE BYW178
D 61036	90348 967	DIODE BYT108-400
D 61056	00024 689	DIODE BYW172D
D 61211	90348 986	DIODE BYT53D
D 85511	90349 904	LE-DIODE TLHY4605
WW.	90363 946	LE-DIODE L-119EGW
F 32109	90373 988	KERTRAP #521 5,5MHZ TPSRA
F 32410	90363 965	SPULE 7X7 #601 SIGN107601
F 32412	90363 984	OFWFIL G1985M
F 34052	90364 902	FILTER 7X7 #750 SIGN11675

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 H 884-90371.978
IC 34015	90364 921	IC STV2246
IC 40550	90371 994	IC TDA7266B
IC 50010	90373 969	IC TDA8174AW
IC 60201	90349 923	IC VIPER20A/022Y
IC 60510	90364 978	IC TDA16846
IC 61040	00098 831	IC LM317T
IC 61050	00098 831	IC LM317T
IC 61060	00805 071	IC MC7805CT
IC 61211	00079 382	IC MC7812CT
IC 80500	90336 975	IC MC33164P-5RP
IC 80920	90374 943	IC 27C020 PROG.KPL
IC 81500	90374 962	PROZESSORPLATTE
WW.	90375 919	IC ST92195C9B1-S551
IC 81710	00011 400	IC HEF4066BP
IC 84501	90336 994	IC TSOP1236
L 31043	90337 969	DR / CHOKE ST 0411-GRP 8,2UH 10%
L 32109	90365 934	DR / CHOKE 0309 4,7UH 10%
L 41003	90336 976	DAEMPF-PERLE / DAMPING BEAD 433003038102
L 52251	90339 984	DR / CHOKE AX 0411-GA 10UH 10%
L 52256	90365 953	DR / CHOKE AX 0411-GA 3,3UH 10%
L 53003	90336 995	FERRITPERLE / FERRITE BEAD HF70 BTL 3,5X
L 53011	90337 913	DR / CHOKE A AX-GA 10UH 10%
L 53021	90337 932	LINEARITAETSREGLER / LINEARITY CONTROL
L 53074	90363 949	ZB-SPULE / ZB COIL
L 60251	90349 961	△ FUNKENTSTOERDROSSEL / INTERFERENCE CHOKE
L 60506	90337 989	FERRITPERLE / FERRITE BEAD 3,6UH 5720500
L 61038	90338 907	FERRITPERLE / FERRITE BEAD BL02RN2-R62
L 61211	90336 976	DAEMPF-PERLE / DAMPING BEAD 433003038102
L 62501	90338 926	△ FUNKENTSTOERDROSSEL / INTERFERENCE CHOKE
L 81061	90338 945	FERRITPERLE / FERRITE BEAD HF55 BTL 3,5X
L 81062	90363 947	DR / CHOKE 0411 10UH 5%
L 81064	90363 947	DR / CHOKE 0411 10UH 5%
OK 60210	00017 531	△ OPTOKOPPLER / OPTO COUPLER
Q 34043	90363 966	QUARZ 4,433619MHZ
Q 80001	90363 985	QUARZ 4MHZ
Q 80951	90364 903	QUARZ 4MHZ
R 40553	90337 933	△ KSW SI B 2,2 OHM 5%
R 43006	90348 968	KSW 0204 75 OHM 5%
R 50047	90372 994	MSW 0207 1,1 OHM 1%
R 50048	90364 941	△ MOW 0411 22 OHM 5%
R 50050	90363 968	△ MOW 0411 150 OHM 5%
R 52004	90344 997	△ MOW 0411 150 OHM 5%

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 H 884-90371.978
R 53002	90338 927	△ KSW NB 0207 10 KOHM 5%
R 53009	90336 998	MGW AX 1 MOHM 5%
R 53011	90363 988	△ MOW 0411 6,8 OHM 5%
R 53016	90356 978	DRW 9 10 OHM 10%
R 53021	90363 969	△ MOW 0411 820 OHM 5%
R 53033	90364 981	△ MOW 0411 1,5 OHM 5%
R 53074	90363 987	△ MOW 0617 820 OHM 5%
R 54001	90364 905	△ MOW 0411 10 OHM 5%
R 54006	90365 916	△ MOW 0411 2,2 OHM 5%
R 54022	90364 924	△ MOW 0617 39 KOHM 5%
R 60204	90348 949	MSW 0207 20 OHM 1%
R 60251	90337 934	△ MSW SI 0414 4,7 MOHM
R 60502	90365 935	KSW 0617 3 MOHM 2%
R 60504	90363 929	KSW 0617 1,2 MOHM 2%
R 60508	90345 972	△ MOW 0617 22 KOHM 5%
R 60509	90345 972	△ MOW 0617 22 KOHM 5%
R 60516	90363 948	ESTR.SK10-A 4,7 KOHM LIN
R 61018	90364 943	△ MOW 0411 82 KOHM 5%
R 62501	90356 997	△ PTC DUO T251-A80-A10
R 62502	90336 997	△ NTC 4,7 OHM 30%
R 62549	90337 934	△ MSW SI 0414 4,7 MOHM
R 91124	90348 968	KSW 0204 75 OHM 5%
SI 60201	90348 987	△ SI LOET 200 MA/T
SI 60251	00037 597	△ SI 5X20 T2A L 250V
SI 61211	90349 905	△ SI LOET T800MA 250V
SI 62501	00045 568	△ SI 5X20 T2,5A L 250V
T 52001	13561 020	TRANS BC637
T 53001	17452 002	TRANS S2055N
T 60506	90338 909	TRANS IRFBC40
T 91101	90344 922	TRANS BC548B/BC547B
T 91111	90344 922	TRANS BC548B/BC547B
T 91121	90344 922	TRANS BC548B/BC547B
TR 52001	90338 928	TRAFO TREIBER / TRANSFORMER DRIVER
TR 53020	90373 912	△ DIODEN-SPLIT TRAFO / TRANSFORMER DIODE SPLIT
TR 60201	90349 943	△ TRAFO SPERRWANDLER NETZTEIL B.O.TYPE CONVERTER TRANSFORMER POWER SUPPLY
TR 61000	90336 941	△ TRAFO SPERRWANDLER / B.O.TYPE CONVERTER TRANSFORMER

## Chassis M155 TM

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 TM 884-90372.916
0100.000	90338 958	TUNER-PLL
0203.000	90359 974	ABDECKUNG BUCHSEN / COVER SOCKETS
0204.000	90357 952	ABDECKUNG INTERFACE / COVER INTERFACE
0210.000	90349 979	SCHIEBESCHALTER / SLIDE SWITCH
0211.000	90355 960	ISOLIERFOLIE 65X60 / FOIL INSULATION 65X60
0247.000	90372 973	EURO-AV BUCHSENLEISTE 21-POL SW / EURO-AV SOCKET STRIP 21 PIN BLACK
0400.000	90348 985	NETZTEIL 12/17V / POWER SUPPLY 12/17V
0450.000	90349 941	FUEHRUNG F.LP / GUIDE F.PCB
0500.000	90372 992	INTERFACE-EINHEIT / INTERFACE UNIT
0910.000	90336 953	FOKUSLEITUNG / FOCUSING CABLE
1000.000	90345 933	△ SICHERUNGSHALTER SI60251/62501 / FUSE HOLDER SI60251/62501
2000.000	90371 979	△ NETZSCHALTER O.WISCHER / POWER SWITCH W/O WIPER
2200.000	90337 984	△ NETZ EINBAUGERAETESTECKER / APPLIANCE COUPLER
2400.000	90371 998	MONTAGECLIP IC40550 / MOUNTING CLIP IC40550
2420.000	90345 971	2 MONTAGECLIP T53001/IC50010 / MOUNTING CLIP T53001/IC50010
2430.000	90349 998	MONTAGECLIP IC61211 / MOUNTING CLIP IC61211
2440.000	90338 921	MONTAGECLIP T60506 / MOUNTING CLIP T60506
2445.000	90343 965	3 MONTAGECLIP IC61040/61050/61060 / MOUNTING CLIP IC61040/61050/61060
2470.000	90338 959	4 FOLIE WAERMELEITEND / FOIL HEAT CONDUCTING T60506/IC61040/61050/61060
		WW. = WAHLWEISE / WW. = VARIANTE
C 34026	90339 944	ELKO 1000UF +50-20% 10V
C 40557	90336 972	ELKO 1000UF 20% 16V
C 50047	90372 993	ELKO 1000UF 20% 35V
C 50048	90364 961	ELKO 1000UF 20% 25V
C 53002	90350 916	FOKO KF #35 9000PF 3,5% 1500V
C 54011	90337 928	KERKO HV C 100PF 20% 1KV
C 54012	90372 993	ELKO 1000UF 20% 35V
C 60210	90338 903	△ KERKO SI 1000PF 20% 400V
C 60251	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 60252	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 60253	90338 903	△ KERKO SI 1000PF 20% 400V
C 60254	90338 903	△ KERKO SI 1000PF 20% 400V
C 60256	90337 966	KERKO HV C 1000PF 20% 1KV
C 60257	90337 966	KERKO HV C 1000PF 20% 1KV
C 60258	90337 966	KERKO HV C 1000PF 20% 1KV
C 60259	90337 966	KERKO HV C 1000PF 20% 1KV
C 60501	90337 966	KERKO HV C 1000PF 20% 1KV
C 60509	90364 999	FOKO FKP1 680PF 10% 1600V
C 60512	90363 945	KERKO HV C 270PF 20% 2KV
C 60523	90337 966	KERKO HV C 1000PF 20% 1KV
C 60524	90337 966	KERKO HV C 1000PF 20% 1KV
C 60526	90337 966	KERKO HV C 1000PF 20% 1KV
C 60527	90337 966	KERKO HV C 1000PF 20% 1KV
C 61016	90363 926	FOKO FKP1 220PF 10% 1600V
C 61036	90337 928	KERKO HV C 100PF 20% 1KV
C 61056	90337 928	KERKO HV C 100PF 20% 1KV
C 61211	90337 928	KERKO HV C 100PF 20% 1KV
C 62501	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 62521	90363 983	△ KERKO SI 2200PF 20% 400V
C 62522	90363 983	△ KERKO SI 2200PF 20% 400V
C 62549	90364 939	△ KERKO SI 1000PF 20% 400V
C 81063	90338 922	EMIFIL 0,1 UF -GR
CD 32411	25810	SMD DIODE BA591
CD 32460	25810	SMD DIODE BA591
CD 32470	25810	SMD DIODE BA591

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 TM 884-90372.916
CD 34041	25810	SMD DIODE BA591
CIC 80910	90338 941	SMD IC MC14094BD
CIC 80930	90364 958	SMD IC ST92R195C9Q1-EOS
CIC 82501	90364 977	SMD IC M24C08CM1TR
CT 32111	90306 998	SMD TRANS BC848B/BC847B
CT 32122	90307 916	SMD TRANS BC858B/BC857B
CT 32123	90306 998	SMD TRANS BC848B/BC847B
CT 32124	90307 916	SMD TRANS BC858B/BC857B
CT 32132	90306 998	SMD TRANS BC848B/BC847B
CT 32460	90306 998	SMD TRANS BC848B/BC847B
CT 32470	90306 998	SMD TRANS BC848B/BC847B
CT 32480	90306 998	SMD TRANS BC848B/BC847B
CT 34031	90307 916	SMD TRANS BC858B/BC857B
CT 40581	90307 916	SMD TRANS BC858B/BC857B
CT 43010	90307 916	SMD TRANS BC858B/BC857B
CT 43015	90306 998	SMD TRANS BC848B/BC847B
CT 50005	90306 998	SMD TRANS BC848B/BC847B
CT 50015	90306 998	SMD TRANS BC848B/BC847B
CT 50040	90306 998	SMD TRANS BC848B/BC847B
CT 50050	90306 998	SMD TRANS BC848B/BC847B
CT 50055	90306 998	SMD TRANS BC848B/BC847B
CT 52260	90307 916	SMD TRANS BC858B/BC857B
CT 57020	90307 916	SMD TRANS BC858B/BC857B
CT 57021	90307 916	SMD TRANS BC858B/BC857B
CT 57112	90307 916	SMD TRANS BC858B/BC857B
CT 57113	90307 916	SMD TRANS BC858B/BC857B
CT 57124	90306 998	SMD TRANS BC848B/BC847B
CT 61043	90306 998	SMD TRANS BC848B/BC847B
CT 61053	90306 998	SMD TRANS BC848B/BC847B
CT 81220	90306 998	SMD TRANS BC848B/BC847B
CT 81225	90306 998	SMD TRANS BC848B/BC847B
CT 85502	90307 916	SMD TRANS BC858B/BC857B
D 40586	31818	DIODE 1N4148
D 43055	31818	DIODE 1N4148
D 43056	31818	DIODE 1N4148
D 50023	90082 959	DIODE 1N4004
D 50048	90365 914	Z-DIODE ZPY5,6 2%
D 52001	31818	DIODE 1N4148
D 53003	44799	DIODE BA157
D 54001	90337 929	DIODE BYV16
D 54011	44799	DIODE BA157
D 54022	90365 933	Z-DIODE 30B 0,5W
D 57013	31818	DIODE 1N4148
D 57023	31818	DIODE 1N4148
D 60202	49148	DIODE BA159
D 60203	90350 973	Z-DIODE BZT03D180
D 60204	94891	DIODE BAV21
D 60213	90348 948	Z DIODE 16B 0,5W
D 60256	79585	DIODE 1N4007
D 60257	79585	DIODE 1N4007
D 60258	79585	DIODE 1N4007
D 60259	79585	DIODE 1N4007
D 60506	90337 967	△ DIODE BYT54M
D 60509	90350 973	△ Z-DIODE BZT03D180
D 60512	90365 952	DIODE BYT53B
D 60523	90363 927	GLR.SKB380C1500
D 61016	90337 986	△ DIODE BYW178

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 TM 884-90372.916
D 61036	90348 967	△ DIODE BYT108-400
D 61056	24689	△ DIODE BYW172D
D 61211	90348 986	△ DIODE BYT53D
D 85511	90373 949	LE-DIODE L-115WEGW
F 32109	90373 968	KERTRAP #66 5,5/6/6,5MHZ
F 32121	90336 955	FILTER 7X7 360 SIGN 11136
F 32410	90373 987	SPULE 7X7 #451 SIGN534451
F 32412	90374 905	OFWFIL K6290K
F 32430	90374 924	OFW L9453
F 34052	90364 902	FILTER 7X7 #750 SIGN11675
IC 34015	90375 918	IC STV2248
IC 40550	90371 994	IC TDA7266B
IC 50010	90373 969	IC TDA8174AW
IC 60201	90349 923	IC VIPER20A
IC 60510	90364 978	IC TDA16846
IC 61040	98831	IC LM317T
IC 61050	98831	IC LM317T
IC 61060	805071	IC MC7805CT
IC 61211	79382	IC MC7812CT
IC 80500	90336 975	IC MC33164P-5RP
IC 80920	90374 943	IC 27C020 PROG.KPL
IC 81500	90374 962	PROZESSORPLATTE / PROCESSOR BOARD
WW.	90375 919	IC ST92195C9B1-S551
IC 81710	11400	IC HEF4066BP
IC 84501	90336 994	IC TSOP1236
L 31043	90337 969	DR / CHOKE ST 0411-GRP 8,2UH 10%
L 32109	90365 934	DR / CHOKE 0309 4,7UH 10%
L 52251	90339 984	DR / CHOKE AX 0411-GA 10UH 10%
L 52256	90365 953	DR / CHOKE AX 0411-GA 3,3UH 10%
L 53003	90336 995	FERRITPERLE / FERRITE BEAD HF70 BTL 3,5X
L 53011	90337 913	DR / CHOKE A AX-GA 10UH 10%
L 53021	90337 932	LINEARITAETSREGLER / LINERARITY CONTROL
L 53074	90363 949	ZB-SPULE / ZB COIL
L 60251	90349 961	△ FUNKENTSTOERDROSSEL / INTERFERENCE CHOKE
L 60506	90337 989	FERRITPERLE / FERRITE BEAD 3,6UH 5720500
L 61038	90338 907	FERRITPERLE / FERRITE BEAD BL02RN2-R62
L 62501	90338 926	△ FUNKENTSTOERDROSSEL / INTERFERENCE CHOKE
L 81061	90338 945	FERRITPERLE / FERRITE BEAD HF55 BTL 3,5X
L 81062	90363 947	DR / CHOKE 0411 10UH 5%
L 81064	90363 947	DR / CHOKE 0411 10UH 5%
OK 60210	17531	△ OPTOKOPPLER / OPTO COUPLER
Q 34043	90363 966	QUARZ 4,433619MHZ
Q 34044	90374 981	QUARZ 3,579545MHZ
Q 80001	90363 985	QUARZ 4MHZ

Pos.Nr. Pos.No.	Material-Nr. Part No.	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNM) M155 TM 884-90372.916
Q 80951	90364 903	QUARZ 4MHZ
R 40553	90337 933	△ KSW SI B 2,2 OHM 5%
R 43006	90348 968	KSW 0204 75 OHM 5%
R 50047	90372 994	MSW 0207 1,1 OHM 1%
R 50048	90364 941	△ MOW 0411 22 OHM 5%
R 50050	90363 968	△ MOW 0411 150 OHM 5%
R 52004	90344 997	△ MOW 0411 150 OHM 5%
R 53002	90338 927	△ KSW NB 0207 10 KOHM 5%
R 53009	90336 998	MGW AX 1 MOHM 5%
R 53011	90363 988	△ MOW 0411 6,8 OHM 5%
R 53016	90356 978	DRW 9 10 OHM 10%
R 53021	90363 969	△ MOW 0411 820 OHM 5%
R 53033	90364 981	△ MOW 0411 1,5 OHM 5%
R 53074	90363 987	△ MOW 0617 820 OHM 5%
R 54001	90364 905	△ MOW 0411 10 OHM 5%
R 54006	90365 916	△ MOW 0411 2,2 OHM 5%
R 54022	90364 924	△ MOW 0617 39 KOHM 5%
R 60204	90348 949	MSW 0207 20 OHM 1%
R 60251	90337 934	△ MSW SI 0414 4,7 MOHM
R 60502	90365 935	KSW 0617 3 MOHM 2%
R 60504	90363 929	KSW 0617 1,2 MOHM 2%
R 60508	90345 972	△ MOW 0617 22 KOHM 5%
R 60509	90345 972	△ MOW 0617 22 KOHM 5%
R 60516	90363 948	ESTR.SK10-A 4,7 KOHM LIN
R 61018	90364 943	△ MOW 0411 82 KOHM 5%
R 62501	90356 997	△ PTC DUO T251-A80-A10
R 62502	90336 997	△ NTC 4,7 OHM 30%
R 62549	90337 934	△ MSW SI 0414 4,7 MOHM
R 91124	90348 968	KSW 0204 75 OHM 5%
R 91124	90348 968	KSW 0204 75 OHM 5%
SI 60201	90348 987	△ SI LOET 200 MA/T 250V
SI 60251	37597	△ SI 5X20 T2A L250V
SI 61211	90349 905	△ SI LOET T800MA 250V
SI 62501	00045 568	△ SI 5X20 T2,5A L250V
T 52001	13561 020	TRANS BC637
T 53001	17452 002	TRANS S2055N
T 60506	90338 909	TRANS IRFBC40
T 91101	90344 922	TRANS BC548B/BC547B
T 91111	90344 922	TRANS BC548B/BC547B
T 91121	90344 922	TRANS BC548B/BC547B
TR 52001	90338 928	TRAFO TREIBER / TRANSFORMER DRIVER
TR 53020	90373 912	△ DIODEN-SPLIT TRAFO / TRANSFORMER DIODE SPLIT
TR 60201	90349 943	△ SPERRWANDLERTRAFO NETZTEIL B.O.TYPE CONVERTER TRANSFORMER POWER SUPPLY
TR 61000	90336 941	△ SPERRWANDLERTRAFO / B.O.TYPE CONVERTER TRANSFORMER



Pos.Nr. Pos.No.	Material-Nr. Part No	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 TM 884-90371.922
0100.000	90373 911	TUNER-PLL
0203.000	90359 974	ABDECKUNG BUCHSEN / COVER SOCKETS
0204.000	90357 952	ABDECKUNG INTERFACE / COVER INTERFACE
0210.000	90349 979	SCHIEBESCHALTER / SLIDE SWITCH
0211.000	90355 960	ISOLIERFOLIE 65X60 / FOIL INSULATION 65X60
0247.000	90372 973	EURO-AV BUCHSENLEISTE 21-POL SW / EURO-AV SOCKET STRIP 21 PIN BLACK
0400.000	90348 985	NETZTEIL 12/17V / POWER SUPPLY 12/17V
0450.000	90349 941	FUEHRUNG F.LP / GUIDE F.PCB
0500.000	90372 992	INTERFACE-EINHEIT / INTERFACE UNIT
0910.000	90336 953	FOKUSLEITUNG / FOCUSING CABLE
1000.000	90345 933	△ SICHERUNGSHALTER SI60251/62501 / FUSE HOLDER SI60251/62501
2000.000	90371 979	△ NETZSCHALTER O.WISCHER / POWER SWITCH W/O WIPER
2200.000	90337 984	△ NETZ EINBAUGERAETESTECKER / APPLIANCE COUPLER
2400.000	90371 998	MONTAGECLIP IC40550 / MOUNTING CLIP IC40550
2420.000	90345 971	2 MONTAGECLIP T53001/IC50010 / MOUNTING CLIP T53001/IC50010
2430.000	90349 998	MONTAGECLIP IC61211 / MOUNTING CLIP IC61211
2440.000	90338 921	MONTAGECLIP T60506 / MOUNTING CLIP T60506
2445.000	90343 965	3 MONTAGECLIP IC61040/61050/61060 / MOUNTING CLIP IC61040/61050/61060
2470.000	90338 959	4 FOLIE WAERMELEITEND / FOIL HEAT CONDUCTING T60506/IC61040/61050/61060
		WW. = WAHLWEISE / WWW. = VARIANTE
C 34026	90339 944	ELKO 1000UF +50-20% 10V
C 40557	90336 972	ELKO 1000UF 20% 16V
C 50047	90372 993	ELKO 1000UF 20% 35V
C 50048	90364 961	ELKO 1000UF 20% 25V
C 53002	90350 916	FOKO KF #35 9000PF 3,5% 1500V
C 54011	90337 928	KERKO HV C 100PF 20% 1KV
C 54012	90372 993	ELKO 1000UF 20% 35V
C 60210	90338 903	△ KERKO SI 1000PF 20% 400V
C 60251	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 60252	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 60253	90338 903	△ KERKO SI 1000PF 20% 400V
C 60254	90338 903	△ KERKO SI 1000PF 20% 400V
C 60256	90337 966	KERKO HV C 1000PF 20% 1KV
C 60257	90337 966	KERKO HV C 1000PF 20% 1KV
C 60258	90337 966	KERKO HV C 1000PF 20% 1KV
C 60259	90337 966	KERKO HV C 1000PF 20% 1KV
C 60501	90337 966	KERKO HV C 1000PF 20% 1KV
C 60509	90364 999	FOKO FKP1 680PF 10% 1600V
C 60512	90363 945	KERKO HV C 270PF 20% 2KV
C 60523	90337 966	KERKO HV C 1000PF 20% 1KV
C 60524	90337 966	KERKO HV C 1000PF 20% 1KV
C 60526	90337 966	KERKO HV C 1000PF 20% 1KV
C 60527	90337 966	KERKO HV C 1000PF 20% 1KV
C 61016	90363 926	FOKO FKP1 220PF 10% 1600V
C 61036	90337 928	KERKO HV C 100PF 20% 1KV
C 61056	90337 928	KERKO HV C 100PF 20% 1KV
C 61211	90337 928	KERKO HV C 100PF 20% 1KV
C 62501	90350 935	△ FOKO MP3 0,1UF 20% 275V
C 62521	90363 983	△ KERKO SI 2200PF 20% 400V
C 62522	90363 983	△ KERKO SI 2200PF 20% 400V
C 62549	90364 939	△ KERKO SI 1000PF 20% 400V
C 81063	90338 922	EMIFIL 0,1 UF -GR
CD 32411	00025 810	SMD DIODE BA591
CD 32460	00025 810	SMD DIODE BA591
CD 32470	00025 810	SMD DIODE BA591

Pos.Nr. Pos.No.	Material-Nr. Part No	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 TM 884-90371.922
CD 34041	00025 810	SMD DIODE BA591
CIC 80910	90338 941	SMD IC MC14094BD
CIC 80930	90364 958	SMD IC ST92R195C9Q1-EOS
CIC 82501	90364 977	SMD IC M24C08CM1TR
CT 32111	90306 998	SMD TRANS BC848B/BC847B
CT 32122	90307 916	SMD TRANS BC858B/BC857B
CT 32123	90306 998	SMD TRANS BC848B/BC847B
CT 32124	90307 916	SMD TRANS BC858B/BC857B
CT 32132	90306 998	SMD TRANS BC848B/BC847B
CT 32460	90306 998	SMD TRANS BC848B/BC847B
CT 32470	90306 998	SMD TRANS BC848B/BC847B
CT 32480	90306 998	SMD TRANS BC848B/BC847B
CT 34031	90307 916	SMD TRANS BC858B/BC857B
CT 40581	90307 916	SMD TRANS BC858B/BC857B
CT 43010	90307 916	SMD TRANS BC858B/BC857B
CT 43015	90306 998	SMD TRANS BC848B/BC847B
CT 50005	90306 998	SMD TRANS BC848B/BC847B
CT 50015	90306 998	SMD TRANS BC848B/BC847B
CT 50040	90306 998	SMD TRANS BC848B/BC847B
CT 50050	90306 998	SMD TRANS BC848B/BC847B
CT 50055	90306 998	SMD TRANS BC848B/BC847B
CT 52260	90307 916	SMD TRANS BC858B/BC857B
CT 57020	90307 916	SMD TRANS BC858B/BC857B
CT 57021	90307 916	SMD TRANS BC858B/BC857B
CT 57112	90307 916	SMD TRANS BC858B/BC857B
CT 57113	90307 916	SMD TRANS BC858B/BC857B
CT 57124	90306 998	SMD TRANS BC848B/BC847B
CT 61043	90306 998	SMD TRANS BC848B/BC847B
CT 61053	90306 998	SMD TRANS BC848B/BC847B
CT 81220	90306 998	SMD TRANS BC848B/BC847B
CT 81225	90306 998	SMD TRANS BC848B/BC847B
CT 85502	90307 916	SMD TRANS BC858B/BC857B
D 40586	00031 818	DIODE 1N4148
D 43055	00031 818	DIODE 1N4148
D 43056	00031 818	DIODE 1N4148
D 50023	90082 959	DIODE 1N4004
D 50048	90365 914	Z-DIODE ZPY5,6 2%
D 52001	00031 818	DIODE 1N4148
D 53003	00044 799	DIODE BA157
D 54001	90337 929	DIODE BYV16
D 54011	00044 799	DIODE BA157
D 54022	90365 933	Z-DIODE 30B 0,5W
D 57013	00031 818	DIODE 1N4148
D 57023	00031 818	DIODE 1N4148
D 60202	00049 148	DIODE BA159
D 60203	90350 973	Z-DIODE BZT03D180
D 60204	00094 891	DIODE BAV21
D 60213	90348 948	Z DIODE 16B 0,5W
D 60256	00079 585	DIODE 1N4007
D 60257	00079 585	DIODE 1N4007
D 60258	00079 585	DIODE 1N4007
D 60259	00079 585	DIODE 1N4007
D 60506	90337 967	△ DIODE BYT54M
D 60509	90350 973	△ Z-DIODE BZT03D180
D 60512	90365 952	DIODE BYT53B
D 60523	90363 927	GLR.SKB380C1500
D 61016	90337 986	△ DIODE BYW178

Pos.Nr. Pos.No.	Material-Nr. Part No	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 TM 884-90371.922
D 61036	90348 967	△ DIODE BYT108-400
D 61056	00024 689	△ DIODE BYW172D
D 61211	90348 986	DIODE BYT53D
D 85511	90373 949	LE-DIODE L-115WEGW
F 32109	90373 968	KERTRAP #66 5,5/6/6,5MHZ
F 32121	90336 955	FILTER 7X7 360 SIGN 11136
F 32410	90373 987	SPULE 7X7 #451 SIGN534451
F 32412	90374 905	OFWFL K6290K
F 32430	90374 924	OFW L9453
F 34052	90364 902	FILTER 7X7 #750 SIGN11675
IC 34015	90375 918	IC STV2248
IC 40550	90371 994	IC TDA7266B
IC 50010	90373 969	IC TDA8174AW
IC 60201	90349 923	IC VIPER20A/022Y
IC 60510	90364 978	IC TDA16846
IC 61040	00098 831	IC LM317T
IC 61050	00098 831	IC LM317T
IC 61060	00805 071	IC MC7805CT
IC 61211	00079 382	IC MC7812CT
IC 80500	90336 975	IC MC33164P-5RP
IC 80920	90374 943	IC 27C020 PROG.KPL
IC 81500	90374 962	PROZESSORPLATTE / PROCESSOR BOARD
WW.	90375 919	IC ST92195C9B1-S551
IC 81710	00011 400	IC HEF4066BP
IC 84501	90336 994	IC TSOP1236
L 31043	90337 969	DR / CHOKE ST 0411-GRP 8,2UH 10%
L 32109	90365 934	DR / CHOKE 0309 4,7UH 10%
L 52251	90339 984	DR / CHOKE AX 0411-GA 10UH 10%
L 52256	90365 953	DR / CHOKE AX 0411-GA 3,3UH 10%
L 53003	90336 995	FERRITPERLE / FERRITE BEAD HF70 BTL 3,5X
L 53011	90337 913	DR / CHOKE A AX-GA 10UH 10%
L 53021	90337 932	LINEARITAETSREGLER / LINEARITY CONTROL
L 53074	90363 949	ZB-SPULE ZB COIL
L 60251	90349 961	△ FUNKENTSTOERDROSSEL / INTERFERENCE CHOKE
L 60506	90337 989	FERRITPERLE / FERRITE BEAD 3,6UH 5720500
L 61038	90338 907	FERRITPERLE / FERRITE BEAD BL02RN2-R62
L 61211	90336 976	DAEMPF-PERLE / DAMPING BEAD 433003038102
L 62501	90338 926	△ FUNKENTSTOERDROSSEL / INTERFERENCE CHOKE
L 81061	90338 945	FERRITPERLE / FERRITE BEAD HF55 BTL 3,5X
L 81062	90363 947	DR / CHOKE 0411 10UH 5%
L 81064	90363 947	DR / CHOKE 0411 10UH 5%
OK 60210	00017 531	△ OPTOKOPPLER / OPTO COUPLER
Q 34043	90363 966	QUARZ 4,433619MHZ
Q 34044	90374 981	QUARZ 3,579545MHZ

Pos.Nr. Pos.No.	Material-Nr. Part No	Teile-Bezeichnung Description
		LOEWE-CHASSIS TV MONO 2106 (VNA) M155 TM 884-90371.922
Q 80001	90363 985	QUARZ 4MHZ
Q 80951	90364 903	QUARZ 4MHZ
R 40553	90337 933	△ KSW SI B 2,2 OHM 5%
R 43006	90348 968	KSW 0204 75 OHM 5%
R 50047	90372 994	MSW 0207 1,1 OHM 1%
R 50048	90364 941	△ MOW 0411 22 OHM 5%
R 50050	90363 968	△ MOW 0411 150 OHM 5%
R 52004	90344 997	△ MOW 0411 150 OHM 5%
R 53002	90338 927	△ KSW NB 0207 10 KOHM 5%
R 53009	90336 998	MGW AX 1 MOHM 5%
R 53011	90363 988	△ MOW 0411 6,8 OHM 5%
R 53016	90356 978	DRW 9 10 OHM 10%
R 53021	90363 969	△ MOW 0411 820 OHM 5%
R 53033	90364 981	△ MOW 0411 1,5 OHM 5%
R 53074	90363 987	△ MOW 0617 820 OHM 5%
R 54001	90364 905	△ MOW 0411 10 OHM 5%
R 54006	90365 916	△ MOW 0411 2,2 OHM 5%
R 54022	90364 924	△ MOW 0617 39 KOHM 5%
R 60204	90348 949	MSW 0207 20 OHM 1%
R 60251	90337 934	△ MSW SI 0414 4,7 MOHM
R 60502	90365 935	KSW 0617 3 MOHM 2%
R 60504	90363 929	KSW 0617 1,2 MOHM 2%
R 60508	90345 972	△ MOW 0617 22 KOHM 5%
R 60509	90345 972	△ MOW 0617 22 KOHM 5%
R 60516	90363 948	ESTR.SK10-A 4,7 KOHM LIN
R 61018	90364 943	△ MOW 0411 82 KOHM 5%
R 62501	90356 997	△ PTC DUO T251-A80-A10
R 62502	90336 997	△ NTC 4,7 OHM 30%
R 62549	90337 934	△ MSW SI 0414 4,7 MOHM
R 91124	90348 968	KSW 0204 75 OHM 5%
SI 60201	90348 987	△ SI LOET T200MA 250V
SI 60251	00037 597	△ SI 5X20 T2A L 250V
SI 61211	90349 905	△ SI LOET T800MA 250V
SI 62501	00045 568	△ SI 5X20 T2,5A L 250V
T 52001	13561 020	TRANS BC637
T 53001	17452 002	TRANS S2055N
T 60506	90338 909	TRANS IRFBC40
T 91101	90344 922	TRANS BC548B/BC547B
T 91111	90344 922	TRANS BC548B/BC547B
T 91121	90344 922	TRANS BC548B/BC547B
TR 52001	90338 928	TRAFO TREIBER
		TRANSFORMER DRIVER
TR 53020	90373 912	△ DIODEN-SPLIT TRAFO
		TRANSFORMER DIODE SPLIT
TR 60201	90349 943	△ TRAFO SPERRWANDLER NETZTEIL
		B.O.TYPE CONVERTER TRANSFORMER POWER SUPPLY
TR 61000	90336 941	△ TRAFO SPERRWANDLER
		B.O.TYPE CONVERTER TRANSFORMER



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Techn.Auskunft VCR/CC Telefon (01 80) 5 22 18 02

Techn.Auskunft Telekom. Telefon (01 80) 5 22 18 03

Techn.Auskunft Hifi Telefon (01 80) 5 22 18 04

Techn.Auskunft HMM Telefon (01 80) 5 22 18 07

Techn.Auskunfte Telefax (0 92 61) 99-730

**Hinweis!** Ersatzteilbestellung nur über Service + Logistik / Zentrale 96317 Kronach  
**Note!** Spare parts orders only through Service + Logistics / Headquarters in Kronach

## Loewe-Vertragswerkstätten

## Loewe establishments

## Loewe Service Europa • Europe

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Fax 030 - 2803327

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**96317 Kronach • Industriestrasse 11**  
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Fax 0180 - 5221806  
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## INTERFACE FOR EXTERNAL COMMUNICATION

### TECHNICAL SPECIFICATION

**Version:** 2.5

**Autoren:** M. Monheim

**Ort, Datum:**  
Kronach, 2000-05-11

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## Status of the versions

ver.	date	name	remark	cap.
1.4	28.08.98	Meyer	Pon, 12V, 5V recognition,	
2.0	29.09.98	Meyer	integrated communication modules	
2.1	08.10.98	Meyer	supplements	
2.1	05.11.98	Meyer	dimensions C-interface	
2.1	22.12.98	Meyer	stereo audio out, length of IIC	
2.2	27.01.99	Meyer	max. load 17V, PCB material for C-modules, EMV	
2.2	02.02.99	Meyer	no time out in C-versions	1.
2.2.	05.02.99	Meyer	prodac version 1.3	6.1
2.2	17.02.99	Meyer	Pinning für Adapterplatte	2.
2.3	14.05.99	Meyer	Waiting Time after IR-commands	6.2.1
			Additional function settings	6.2.5
			Behalf of 2 digit program input	6.2
			Standby on possible after hospital ident	5.1.
2.3	17.09.99	Meyer	RC-Code 10 (switch on and two digit input)	6.2.
2.3	22.09.99	Meyer	Pin 9 of H-Modul delivers 300 mA in Stby	5.2.
2.3	10.12.99	Monheim	format document, sort pin listing	2.
2.4	21.12.99	Monheim	modify volume increment	6.2
			remove sleep timer in hospital mode	6.2
			programmable station name in programm 00 (AV)	6.2
2.5	11.05.00	Monheim	add command listing	6.2.1
	11.05.00	Monheim	save default values when programming AV1	6.2.3.9
	11.05.00	Monheim	display station name after programming AV1	6.2.3.9
	11.05.00	Monheim	power on without sound	6.2.1/2

## 1 General items

Special applications (hospital, hotel, ...) demand the possibility to communicate and to control the television set not only by the IR-remote control, but also by a connection to a central control base.

To realize that, the C-model offers the interfaces.

The base for the C-variant is the VT (or the L) model.

The chassis delivers signals to an interface PCB. This PCB carries a connector with all the signals. By opening a cover on the rear panel an external modem electronic can be put in without removing the back cover. These modems contains different electronics for communication with the central computer of hospitals or hotels. The supplier and producer of this interfaces are different partners of Loewe.

All modems have the same form factor of 83mm x 160mm and a maximum height of app. 40 mm.

An additional modul is placed in the socket for SAT or FM-Modul, which contains an independent power supply. This module is connected always to main power (in front of main switch of the chassis) to supply continuously the additional modems.

Retrofitting of additional headphone and external loudspeaker output at the rear side in the rear panel is possible. In case external loudspeaker is plugged in, the internal speaker have to work parallel. The loudspeaker socket offers also the possibility to switch off the internal loudspeaker by inserting the plug in reverse order. The minimum impedance for the external loudspeaker is 8 Ohm.

In service mode of the TV option bits decide whether the behalf of the TV set is

- TV
- Hotel mode
- Hospital mode

When TV is switched on (from Standby or main switch) in free Hotel mode (without external modem), it has to come up with program place 1. That means no "last program" in this case. In C-model no time out is allowed, when TV is controlled by external modem.



## 2 Connector for external modems

The type for the connector is: AMP Amplimite 050 174217-2  
 This connector requires a double sided throughcontacted PCB. For position refer to mechanical specification.

Pinning: ("in" means "leads in the chassis")

<u>pinnumber</u>	<u>signalname</u>	<u>remark</u>
1	ground RGB	
2	fast blank in	to videoprocessor without pull down
3	fast blank out	from scart, 75 Ohm in chassis
4	red out	from scart, 75 Ohm in Chassis
5	red in	to videoprocessor without pull down
6	green out	from scart, 75 Ohm in Chassis
7	green in	to videoprocessor without pull down
8	blue out	from scart, 75 Ohm in Chassis
9	blue in	to videoprocessorwithout pull down
10	audio L out	acc. scart, from scart 1 ??? + speaker in (R) ???
11	N.C.	speaker in (R) ???
12	loudspeaker in	earth-free to internal speaker
13	ground sound	
14	loudspeaker in	earth-free to internal speaker
15	loudspeaker+ out	earth-free (min. 8 Ohm, xx Vpp)
16	loudspeaker- out	earth-free
17	+5VSB from chassis (H)	even in standby, detection off
18	horizontal sync.	emitter follower on interface PCB
19	ground	
20	vertical sync.	emitter follower on interface PCB
21	audio ground	
22	12V	from additional power supply
23	audio L in	according scart, for future
24	ground (17, 12V)	separated from the other gnd
25	audio R in	acc. scart, for future
26	17V	from additional power supply
27	audio R out	acc. scart, from scart 1
28	hotel reset	
29	hospital ident	
30	bus clock SCL	
31	bus data SDA	
32	ground processor	
33	infrared out	to micro
34	infrared in	from receiver
35	message LED	LED cathode to ground
36	8V from chassis (E)	detection standby
37	switching voltage	switches pin 38 to monitor
38	CVBS in	1Vpp, external to monitor
39	CVBS out	2Vpp, monitor (from videoprocessor out)
40	ground CVBS	

### 3 Interface PCB

This PCB manage the trails for the signals comming from the chassis to the interface connector.

The IIC-bus to the communication modules is shared with the internal NVM-bus, because this bus is working in standby mode too. An electronic switch is necessary in the chassis or on the interface PCB to select between internal and external communication for safety reasons.

Note, that IIC-Bus is not intended to connect long distances. (Total bus capacitance should not exceed 400 pF, less than 50 cm is recommended).

For the signals H, V and CVBSout emitterfollowers should be placed on the interface.

The 5VSB and the 8V from the chassis serve for recognition of the status of the television.

5VSB +/-5%	100 mA	Standby
	150 mA	TVon
8V +/-5%	30 mA	TVon

The additional power supply delivers the operating currents for the modules. The ground of this module is not connected to chassis ground.

17V +/- 0.5 V:	150 mA	TVoff, Standby, TVon	(without load 17V +/-10%)
12V +/- 5%:	300 mA	TVoff, Standby, TVon	

If no load is used from the 12V the maximum current out of the 17V is 500mA

The interface PCB contains a mechanical switch. If this is not pushed the TV works normal. If a external modem is put in some looped through signals (see schematic) are opened.

### 4 Commercial interfaces (hotels)

Differnet customers can use the above described interface.

The Xelos C is CE (EMV...) approved without additional modules. It is measured with maximum load from the additional power supply. It is possible to support the customer by testing the additional modules (conditions have to be discussed).

Additional explanation for some signals:

- hotel reset: connected direct with the TV controller reset
- CVBSin can be switched to the monitor by pin 29 or by IIC command. It serves for external sync if no signal comes out of TV
- audio out (pin3): parallel to sound output at the TV-Scart. In case of emergency this tuner sound can be amplified even if the customer is not switched free.

## 5 Hospital interface

### 5.1 *general*

For hospital television systems a special kind of interface is prepared. The communication takes place through infrared commands and in newer versions additional with IIC-bus. For backward compatibility it is important to keep the specification of the output connector (hospital scart). As reference take the existing circuit diagram. As optocoupler are used TPL 621 (output is open collector type). CNF 17F is a compatible type.

Data of the audio transformer: refer to separate spec

Only the sound should be heard, which is switched free through the H-interface. This means, if no brigde is set on the H-modul no sound at internal headphone and loudspeaker.

Hospital applications demand to have 9mm between primary side and a secondary ground which is reachable by the customer (patient). This is recommended by EN 60601.

Additional explanation for some signals:

- hospital ident: signaling existence of H or C module, switch of TV if unallowed plug off/in of scart connector; detection whether there is again a switch on trial after plug off and pull in interface connector, signal leads to a processor port

If Hospital mode is on and Hospital ident is active the TV has to go to stand by. If it is deactivated, it should be possible to switch on with main power switch or by remote control.

## 5.2 Output definition (from TV-set)

Pinning of the hospital scart

<u>pin nr.:</u>	<u>note</u>	
1	headphone output (pin 1 and 4) earth free 1kHz, 500mVrms output at 200 Ohm external load with 8 dB below maximum adjustment of the volume, no distortion in case of short circuit	
2	n.c.	
3	external ground, separated from internal ground via optocoupling IC1/2/4	
4	headphone output (pin 1 and 4)	
5	earth free output signal line for:	
	- standby / off:	high (pull up to 8 V)
	- on mode:	low
6	output for R-Sig via optocoupling (IC2)	
7	U17 SB: 16 - 21V max. current	
	- standby	60 mA
	- on mode	150 mA
8	pin lock (n.c.)	
9	U12: 12V +/- 5% max. current	
	- standby	300 mA
	- on mode	300 mA
10	external ground, ground input for R-Sig to IC3	
11	external ground, ground input for R-Sig to IC3	
12	input of R-Sig to optocoupler IC3	
13	earth free output signal line for:	
	- off:	high (pull up to 5V)
	- standby:	low
	- on mode:	low
14	IIC-bus: SCL	
15	internal ground for U5 / U12 / U17	
16	pin lock (n.c.)	
17	internal ground as pin 15	
18	IIC-bus: SDA	
19	this pin is connected to ground with a modification in the scart plug, for switching to standby, if scart is pulled of and plugged in again	
20	U5 SB: 5V +/- 5% max. current	
	- standby	100 mA
	- on mode	150 mA
21	n.c.	

Through optocoupler and pin 13 the 5V from the TV is used to recognize whether the TV main switch is on or off. With the same system the 8V (through optocoupler to pin 5) is used to recognize Standby or On-mode.

## **6 Software**

### **6.1 IIC-Bus**

Refer to separate specification paper of Prodac V1.5

Additional specification for control of the teletext / OSD is necessary

## 6.2 RSIG - Interface (Quick & Easy programming)

### 6.2.1 General

The programming is done with a special infrared remote controller or through the RSIG line at the interface of H-models. All following RC5 codes can be used:

Function /button	Code (dez.)	Description
On	63	Switch on displaying station name. Stop code when programming
On	10	Switch on, next is two digit input
Off	12	Switch off
Start	56	Start-Code when programming
Memory	57	Memory-Code when programming
Stop	58	Stop-Code when programming and displaying station name
Stop	63	Stop-Code when programming
P+	32	Channel +=1
P-	33	Channel -=1
L+	16	Volume +=1, ignore 2 <sup>nd</sup> -3 <sup>rd</sup> command without togglebit
L-	17	Volume -=1, ignore 2 <sup>nd</sup> -3 <sup>rd</sup> command without togglebit
Mute	13	Toggle mute
Volume	52	Direct command with two digits, e.g. 52 30 (volume := 30)
Contrast	44	Direct command with two digits, e.g. 44 30
Brightness	45	Direct command with two digits, e.g. 45 30
Hue	46	Direct command with two digits, e.g. 46 30
T	60	Teletext on/off
M	11	Station name and time (teletext) on/off
E	63	Station name on/off
i	39	Jump to P99
Red	27	Display contrast value (up/down with L±). Fasttext
Green	26	Display brightness value (up/down with L±). Fasttext
Yellow	43	P99 <-> aktueller Kanal Toggeln, Fasttext
Blue	40	Display hue value (up/down with L±). Fasttext
0...9	0...9	0...9

**Tabelle 1: RC5 Codes für die Quick&Easy Programmierung**

For sure recognition wait 2,5 seconds after switch on from standby and 500 ms after each RC5 code. If no further input or after all data input, there will be a reset after 2 seconds.

Xelos M55C/TM feature: After 2,15 (± 0,1) seconds tv is still muted but reception of RC5 commands runs for following codes (dec.): 13 (mute). To perform power on without sound, AV programming command ( Kap. 6.2.3.9) for saving normal values (volume, brightness, contrast, hue) has to be used before.

**6.2.2 Switching On/Off**

For absolute sure function, synchronisation after Power failiure and manipulation protection the standby on and off commands has to be realized as direct functions but not as toggle functions as it it usual in consumer mode:

- 12 standby
- 63 on, with display of station name
- 10 on, with two digit input following

Two digit input starts tv with selected channel. e.g. 00 07 switches on channel 7. For switching on from power off without sound, AV programming command ( Kap.

6.2.3.9) for saving normal volues (volume, brightness, contrast, hue) has to be used before.

**6.2.3 Programming****6.2.3.1 start code:**

56

**6.2.3.2 programm number:**

xx xx (2 digits, e.g. 01 05 is programm 15 or 00 09 is program 9)

**6.2.3.3 range**

data	information		
0	BG	RF	VCR1
1	BG	cable	VCR1
2	BG	RF	VCR2
3	BG	cable	VCR2
4	BG	RF	off
5	BG	cable	off
6	BG	RF	AV!1
7	BG	RF	AV!2
8	L	RF	VCR1
9	L	cable	VCR1
10	L	RF	VCR2
11	L	cable	VCR2
12	L	RF	off
13	L	cable	off
14	L	RF	AV!1
15	L	RF	AV!2

**6.2.3.4 channel mode: xx xx (2 digits)**

V/UHF: 02 - 69

cable: 01 - 47

**6.2.3.5 station name xx xx xx xx xx (5 digits, if only 4 possible ignore the last)**

code	information	code	information	code	information
00	0	14	A	28	O
01	1	15	B	29	P
02	2	16	C	30	Q
03	3	17	D	31	R
04	4	18	E	32	S
05	5	19	F	33	T
06	6	20	G	34	U
07	7	21	H	35	V
08	8	22	I	36	W
09	9	23	J	37	X
10	+	24	K	38	Y
11	-	25	L	39	Z
12	.	26	M		
13	”space”	27	N		

**6.2.3.6 memory code:**

57

**6.2.3.7 stop code:**

58 (63)

**6.2.3.8 examples**

programm 25 should be programmed with BG-system, RF-channel 05 in VCR mode:

start	programm	range	channel	memory	stop
56	02 05	00	00 05	57	58

programm 16 should be programmed with BG-system, cable channel 20 on off mode and station name ”RTL 4”:

start	programm	range	channel	station	memory	stop
56	01 06	05	02 00	31 33 25 13 04	57	58

**6.2.3.9 programming AV**

Program place 00 (AV) is handled different in programming:

- Channel name (default AV1) must be programmable with 5 digits. AV has to be selected before. After programming station name is displayed when stop code 58 is used.
- With programming program place 00 (AV) actual analog values (volume, brightness, color, contrast) are saved as default values, with these values tv will restart after power of.



**6.2.4 channel mode for tuning**

channel mode is used for direct channel tuning

**6.2.4.1 channel mode code:**

41

**6.2.4.2 range:**

1 digit (see table above)

**6.2.4.3 channel number:**

2 digit

**6.2.4.4 example**

BG-system, V/UHF, 10 channel, VCR-mode

channel mode	range	channel number
41	00	01 00

**6.2.5 volume setting mode**

volume setting mode is direct volume data setting.  
Volume data = 0 means mute

**6.2.5.1 volume setting code: 52****6.2.5.2 data:**

1 digit (00 - 63)

**6.2.5.3 example**

To adjust the volume to 32 send:  
52 32

**6.2.5.4 volume in-/decrement**

It is possible to in-/decrement volume value by sending code 32/33.  
If these commands are sent without a change in toggle bit, then the 2<sup>nd</sup> and 3<sup>rd</sup> command are ignored. The 1<sup>st</sup>, 4<sup>th</sup>, 5<sup>th</sup>, ... commands are processed.  
When toggle bit changes, counting starts at 1<sup>st</sup> again.  
This feature may work also in consumer mode.

**6.2.6 additional setting codes:**

Contrast:	44
Brightness:	45
Color:	46

Adjustment of the values is the same as in volume setting.

720100437000

Änderungen vorbehalten  
Subject to modification  
Modification réserves  
Con riserva di modifiche