

**MONO PLUS
CHASSIS**

22A

TV

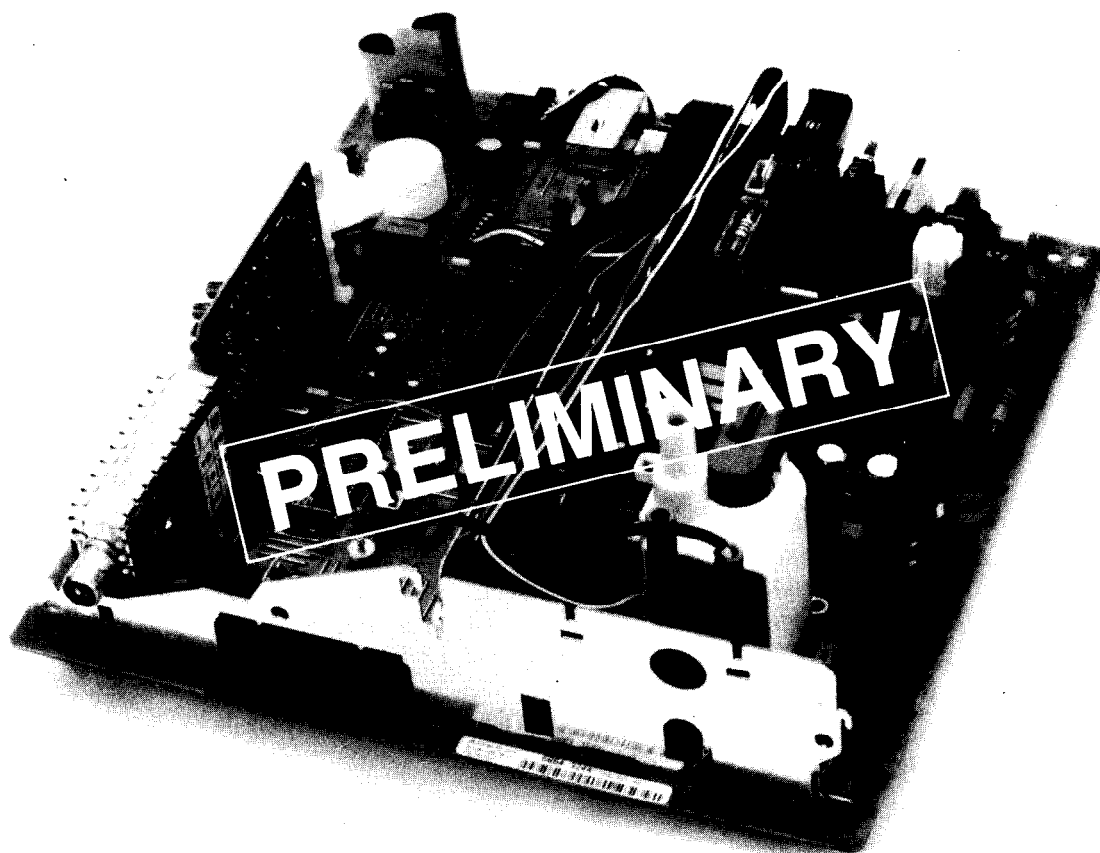
1995

Ⓞ Service manual
Ⓧ Service-Manual
Ⓢ Serviceanvisning

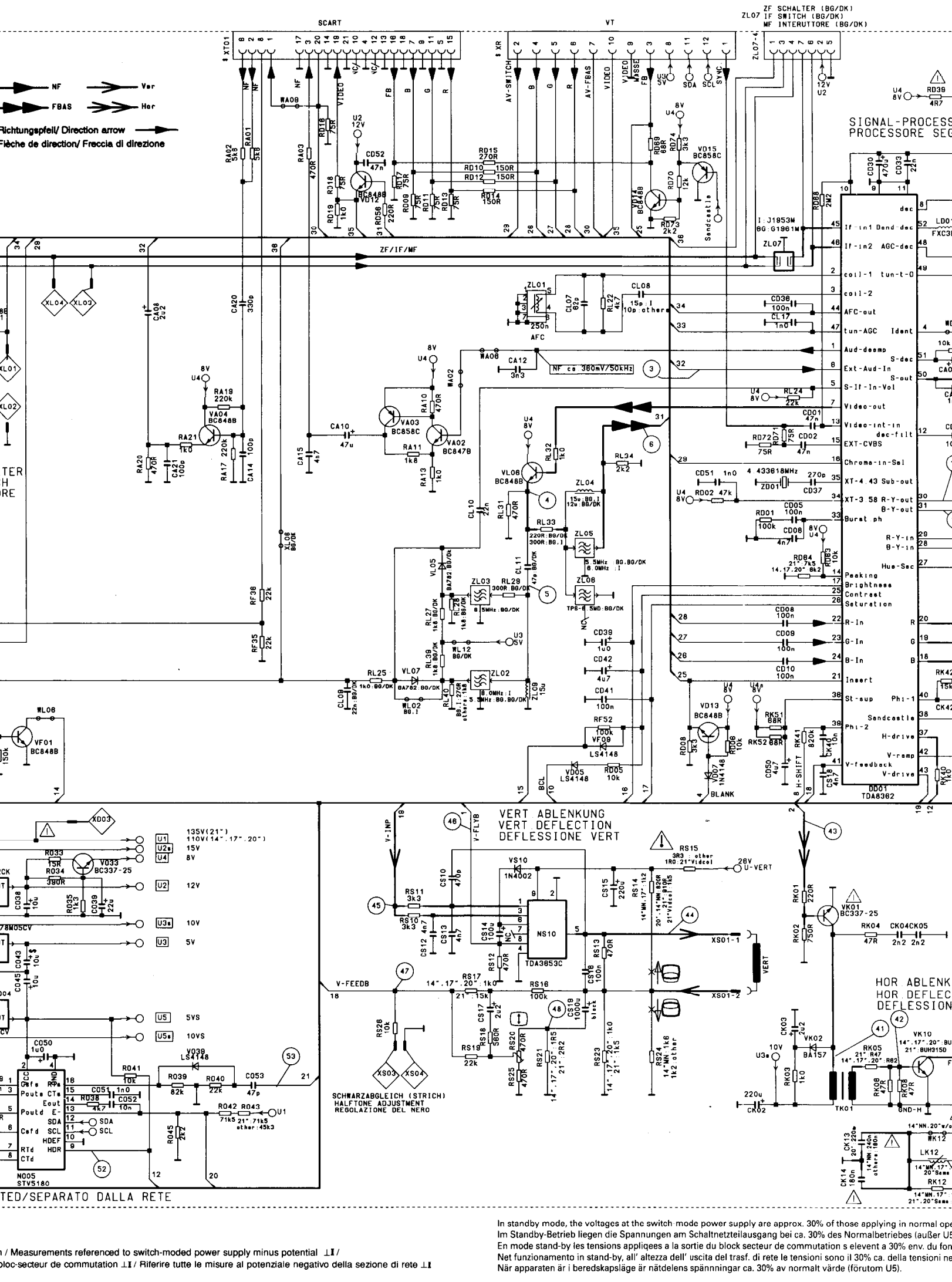
Ⓧ Manuel de service
Ⓡ Manuale di servizio

NOKIA 3724 3725 4525 5125 5525

SALORA 14S3 20S3 21S3

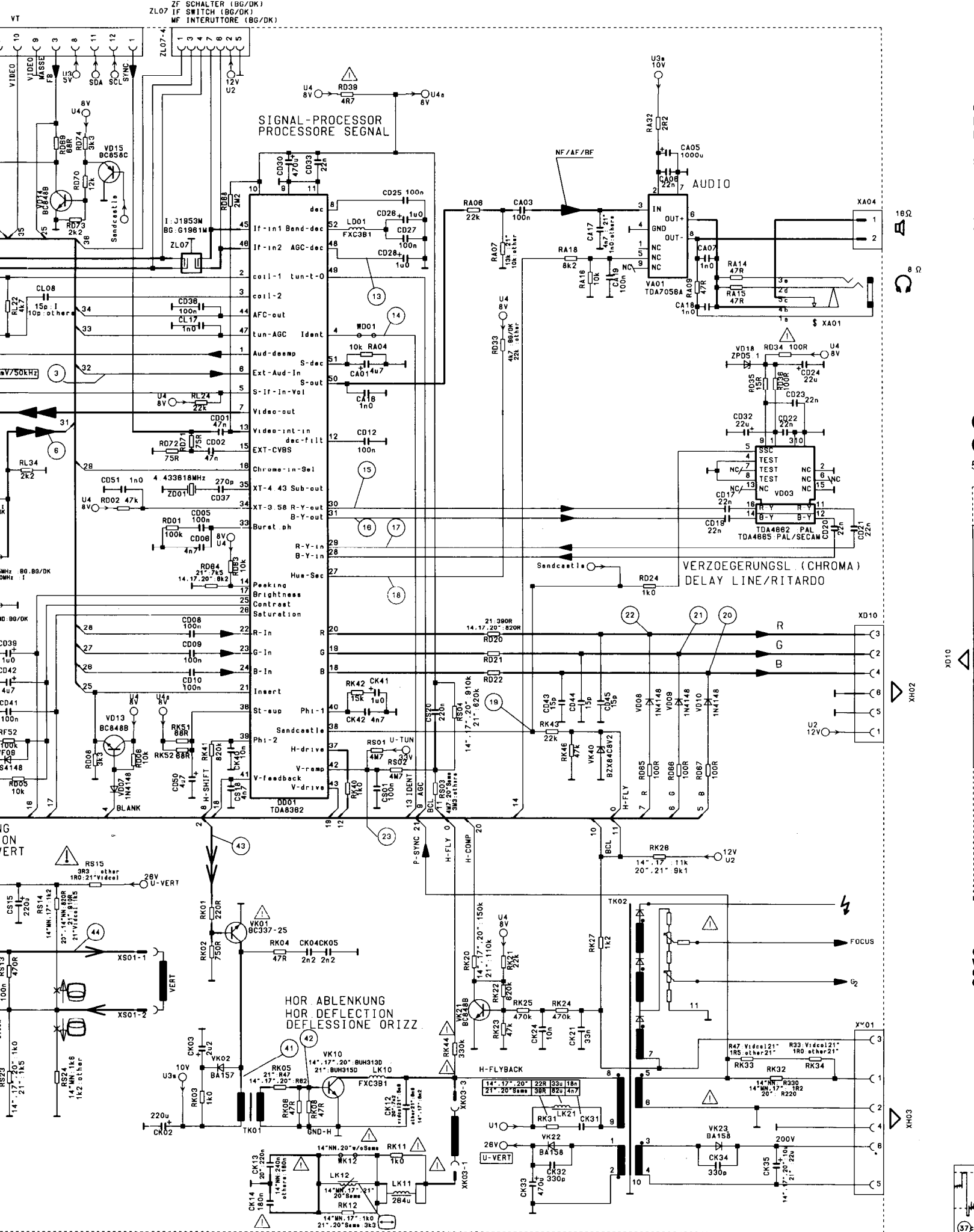


NOKIA
CONNECTING PEOPLE



In standby mode, the voltages at the switch mode power supply are approx. 30% of those applying in normal operation. In Standby-Betrieb liegen die Spannungen am Schaltnetzteilausgang bei ca. 30% des Normalbetriebes (außer U5).
 En mode stand-by les tensions appliquées à la sortie du block secteur de commutation s'élevent à 30% env. du fond de tension.
 Net funzionamento in stand-by, all' altezza dell' uscita del trasf. di rete le tensioni sono il 30% ca. della tensione normale.
 När apparaten är i beredskapsläge är nätdelens spänningar ca. 30% av normalt värde (förutom U5).

Measurements referenced to switch-mode power supply minus potential \perp /
 Mesures effectuées par rapport au potentiel négatif de la section de commutation \perp /
 Tutte le misure al potenziale negativo della sezione di rete \perp



Stages at the switch-mode power supply are approx. 30% of those applying in normal operating mode (except for U5).
 Le tensioni alle uscite del convertitore a commutazione sono il 30% env. del funzionamento normale (a part U5).
 Stadi di alimentazione a commutazione, all' altezza dell' uscita del trasf. di rete le tensioni sono il 30% ca. della tensioni net funzion. normale (eccetto U5).
 Spänningarna vid utgången från omformaren är ungefär 30% av normala värdet (förutom U5).

After DF02 has been replaced, the AGC must also be recalibrated.
 Nach Austausch von DF02 muß auch die AGC neu abgeglichen werden.
 Après avoir remplacé DF02, AGC doit également être rééquilibrée.
 Dopo aver sostituito il DF02 è necessario equilibrare nuovamente anche l' AGC.
 AGC: n måste också justeras när DF02 byts.

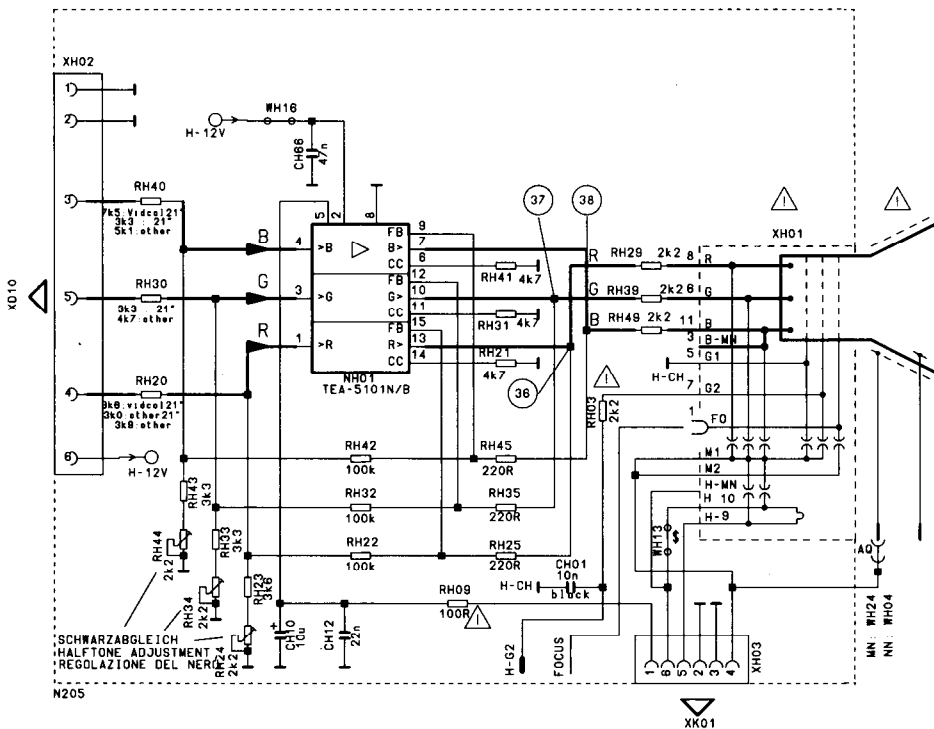
MONO PLUS CHASSIS

Assembly group abbreviations/ Baugruppenkurzbezeichnungen
 Codifica dei moduli/ Désignations abrégées des sous-ensembles
 Blockförkortningar

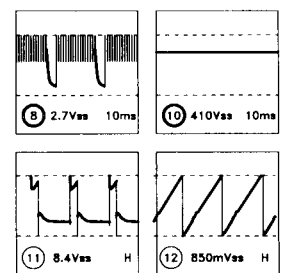
- D = Color decoder/ Decodificatore colore/ Färgdekoder
- K = Deflectione orizzontale/ Hor. deflection/ Horizontal avlänkning
- S = Verticale/ Vertical
- I = AF/ ZF/ HF
- L = IF/ MF/
- F = Control unit/ Unita di comando/ Kontrollenhet
- A = Audio
- O = Power supply/ Schaltnetzteil/ Circuito aliment. rete/ Nätdel
- H = C.R.T. board/ Bildröhrenanschluß/ Colleg. cinescopio/ Bildrörsplattan
- R = Videotext/ Teletext/ Televideo/ Text-TV

CRT board/ Bildröhrenanschlußplatte/ Connexion tube image/ Collegamento cinescopio

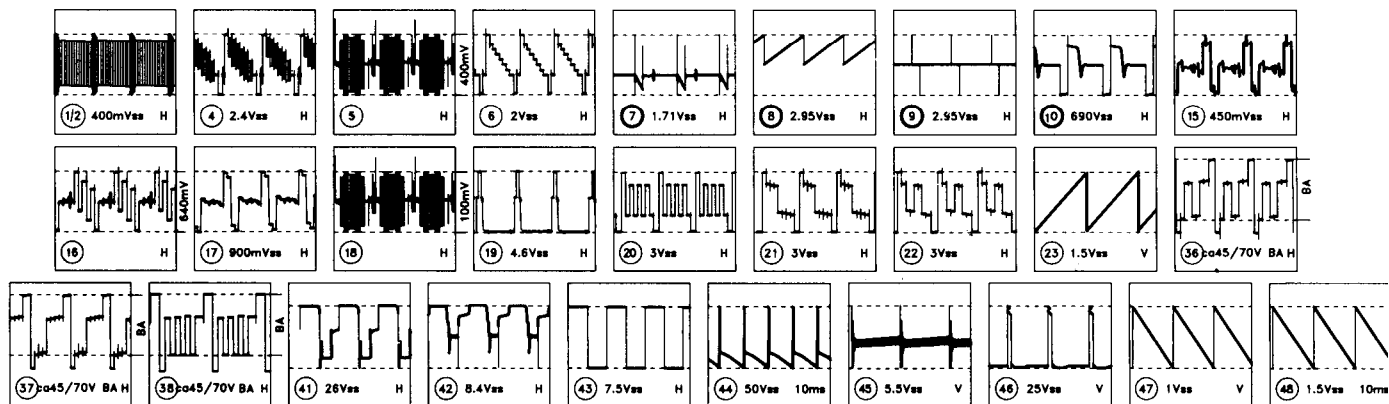
5858 20 50, ..51, ..54, ..55, ..57, ..58

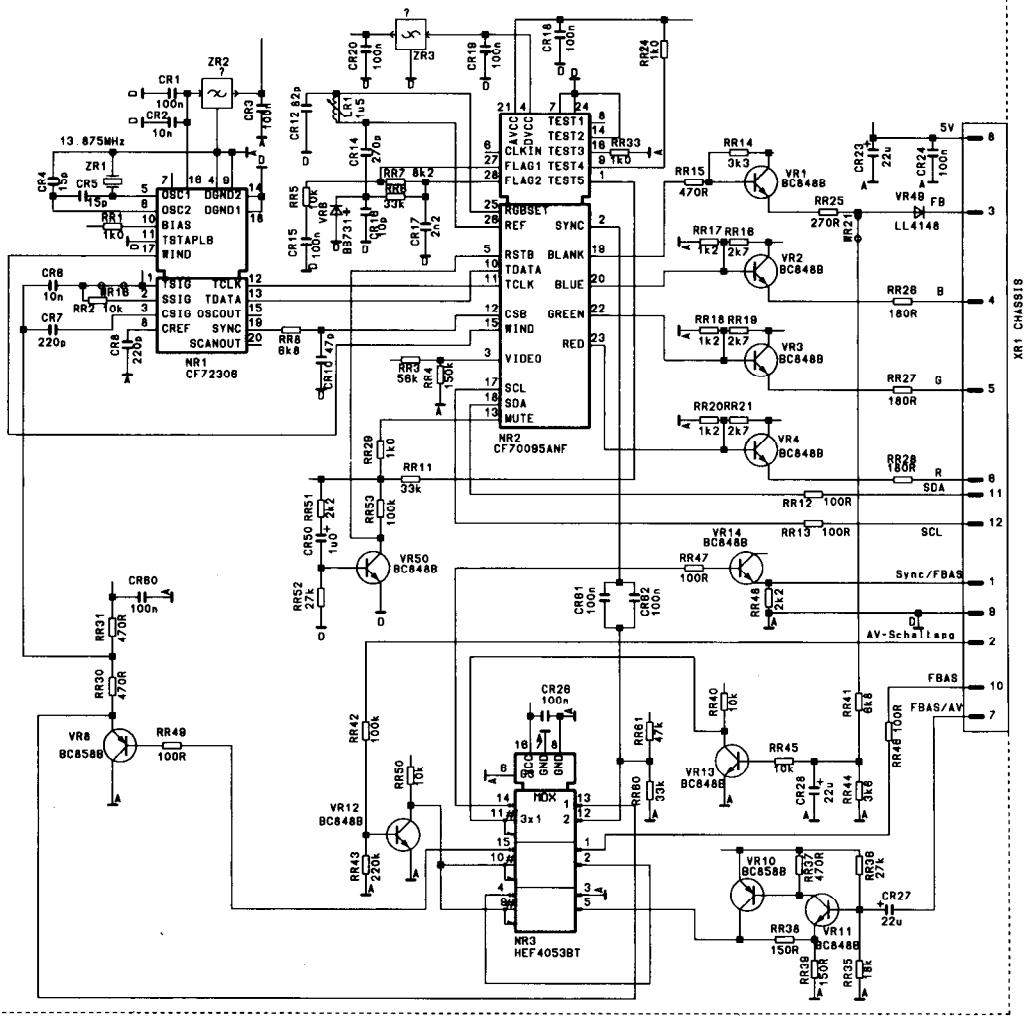


Oscillogramme bei Stand-by-Betrieb
 Waveforms at stand-by mode
 Oscillogrammes pour fonctionnement en stand-by
 Oscillogrammi in modo -stand-by-

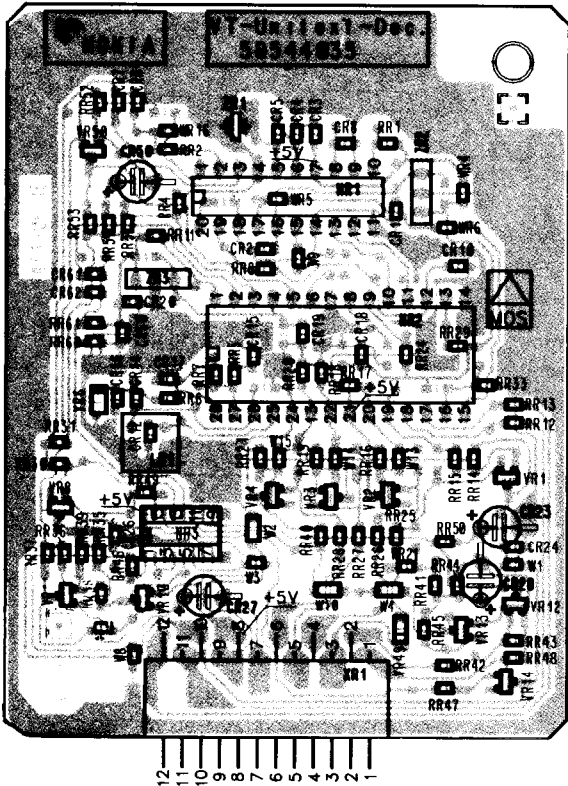


Oscillogramme bei Normalbetrieb
 Wave forms at normal operation
 Oscillogrammes en mode de fonc. normal
 Oscillogrammi in presenza di esercizio normal.





N152



Set IC NR 02 to 2,5V +/- 0,1V with LR 1 at Pin 28.

HOTEL MODE = " MUTE, YELLOW, TV " RED = OK

Service adjustments

Note! Before other adjustments U1 voltage must be adjusted.
If the set cannot be switched on with the number buttons, please see under "MODE" (Service menu 3).

Service mode

Select the service mode by pressing the Mute, OK (M) and TV buttons on the remote control unit. You can use the yellow button to call up Service Menu 2 or 3 (or Service Menu 1 again).

Use the cursor button ▲ or ▼ to select required adjustment and adjust it by using the cursor buttons ◀ and ▶.

Store into memory by pressing the red OK (M) button.

Return to normal TV mode by pressing the TV button.

Service adjustment which are made in service mode

OSD	Note
Service menu 1	
U1	U1 operating voltage, see adjustment "U1 voltage"
AGC	See adjustment "AGC"
H-SHIFT	Adjust centre of the test picture horizontal to a centred position. (Advice on set software)
Service menu 2 (only for models with VT decoder 5854 40 36)	
TXT	Teletext character sets: EAST/WEST/WEST TURK
SCART	SCART socket, YES/1=When a switching voltage is being received at pin 8 (+12 V), the set switches from standby to the "ON" operating status (programme memory location E1). YES/2=as for YES/1; however, the set switches back to the standby operating status when the switching voltage (at pin 8) is switched off. This does not apply if you have changed programmes during operation. NO=E1 cannot be selected.
TXT H-SHIFT	Adjust teletext picture horizontal to centre on the screen.
APS	Set to the appropriate television standard. Specifies APS sequence, e.g. first the BG standard, then L or L, and then BG.
Service menu 3	
AUTOAPS	YES=APS; search function will be run automatically when the set is switched on for the first time and stores all stations in memory. NO=No automatic search function when the set is switched on for the first time.
MODE	1=NOKIA, SALORA 2=other sets 3=UNIVERSUM, MELETRONIC If the set cannot be switched on with the number buttons on the remote control, then switch the set on with the TV button and go to the service menu 3 (see service mode). Select the MODE setting and alter it to correspond your set. Store the setting in memory with the OK (M) button.

U1 voltage adjustment

1. Set the contrast and brightness to minimum.
2. Connect test point XF01 (chassis board) to ground.
3. Go to service menu 1 (see service mode).
4. Use cursor button ▲ or ▼ to select U1-adjustment.
5. Adjust the U1 voltage to $109.5 \text{ V} \pm 0.5 \text{ V}$ (14", 17", 20") and $134.5 \text{ V} \pm 0.5 \text{ V}$ (21") with the cursor button ◀ and ▶ at test point XO03.
6. Use the OK (M) (memory) button to store the value in memory.
7. Remove XF01/ground connection again.
8. Return to normal TV mode by pressing the TV button.

AGC

1. Connect test point XF01 to ground.
2. Feed in RF signal without sound carrier with $70 \text{ dB}\mu\text{V}$ on a medium UHF channel via the aerial input.
3. Go to service menu 1 (see service mode).
4. Use cursor button ▲ or ▼ to select AGC-adjustment.
5. Connect oscilloscope (bandwidth > 50 MHz) to the tuner's IF output, test point XL03 or XL04 and to ground XL02.
6. Use cursor button ◀ and ▶ to adjust to $400 \text{ mVpp} \pm 50 \text{ mV}$ with reference to the signal's synchronizing peaks.
7. Use the OK (M) button to store the value in memory.
8. Remove XF01/ground connection again.
9. Return to normal TV mode by pressing the TV button.

Other service adjustments

Horizontal amplitude

Adjust hor. amplitude to coil LK 12 (14" minineck picture tube, 21").

Vertical amplitude

Adjust vertical amplitude to resistor RS20.

Vertical position

Adjust vertical position by severing resistor RS24 and/or RS14.

Focus

Use focus adjuster TK02 (at horizontal transformer) to set the focus to optimum sharpness.

G2- and colour temperature

1. RH24, RH34 and RH44 (picture-tube connection board) to anticlockwise stop.
2. Switch the TV set to AV, or take the black test picture.
3. Connect oscilloscope at the green input of the picture-tube connection board (XH02/2).
4. Set to 1.7 V DC black value with brightness adjuster.
5. Short-circuit test points XS03/XS04 (vert. deflection).
6. Turn the UG2 adjuster at the hor. transformer until a colour just appears as a bar.
7. Turn RH24, RH34 or RH44 resistor until the bar just appears in white. At least one of the adjusters should remain at its anticlockwise stop.
8. Sever XS03/04.

AFC

1. Feed in symmetr. IF signal by means of 4:1 transmitter at test points XL03/04 (BG, DK standard 38.9 MHz or the I standard 39.5 MHz; approx. 0.8 Vpp).
2. At test point XL01 (XL02 ground), set to $3.5 \text{ V DC} \pm 0.5 \text{ V}$ with coil ZL01 (AFC reference).
3. Multinorm sets, L' standard: Select a program memory location in Band 1 and norm L'. Set the STANDARD setting to 1 (see above under "Sound", 1..5). At test points XL03/04 (33.9 MHz approx. 0.8 Vpp), adjust for a symmetrical IF signal by means of 4:1 transmitter to $3.5 \text{ V DC} \pm 0.5 \text{ V}$ at test point XL01 with CL05.

AFC check

Retune the IF signal to approx. 39 MHz (39.7 MHz); when you do this, the voltage must drop to approx. 1 V.

Sound (for the BG, DK or for the I standards)

The BG or I standards are independent of the STANDARD set. With the BG/DK standard: STANDARD 2 = DK and STANDARD 3 = BG.

To set the STANDARD, proceed as follows:

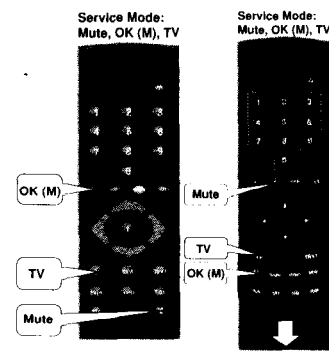
1. Press the PROG button (RCF..Remote Control).
1. Press the blue button twice (RCN..Remote Control).
2. Select the menuline STANDARD.
3. Use the cursor button ◀ and ▶ to switch to STANDARD 3 or 2.
4. Use the OK (M) (memory) button to store the value in memory.
5. Return to normal TV mode by pressing the TV button.

Sound calibration (Multinorm Modul)

1. Connect wobulator with markers 30-45 MHz to connecting pin AL14.
2. Connect control voltage unit at pin 3 of TDA 9830 and calibrate ca. 200 mV.
3. Connect oscilloscope at connecting pin AL11.
4. Standard L: Voltage at AL09 = 0 V. Use ZL51 and ZL52 to adjust 32,4 MHz to maximal amplitude.
5. Standard L': Voltage at AL10 = 12 V. Use RL73 to adjust 40,4 MHz to maximal amplitude.

Teletext decoder 5854 40 37

Set IC NR02 to $2.5 \text{ V} \pm 0.1 \text{ V}$ with the coil LR1 at pin 28.



(GB)

Instructions for repair work

N.B.: (cc. switch-mode)

Please use only original component 3447 00 04 for CO06. If standard size electrolyt capacitor CO06 is used, parallel 0,47 μ F MKT must be installed additionally.

1. With the horizontal output stage disconnected (e.g. pin 8 at TK02 open) and a "dummy" load at the cathode of VO31 (e.g. 100 W lamp) the power supply must supply approx. 100% of the setpoint voltage.
2. For fault finding the elect. fuse can be disconnected with a shunt connection across CO07. IF the electronic fuse cuts out due to a momentary overload, the TV set can be re-started by using the mains switch.
3. Make sure there is hum-free d. c. voltage available. For example: the ripple voltage of U1 is approx. 4 V and should, due to capacitance loss of CO33, not increase much more. The ripple voltages of the other d.c. voltages should be less than 1 V. The ripple voltages of U2, U3, U5 are in the mV range.

(D)

Reparaturtips

Achtung! (betr. Schaltnetzteil)

Für CO06 nur Originalteil 3447 00 04 verwenden. Bei handelsüblichem Elko CO06 muß parallel 0,47 μ F MKT zusätzlich bestückt werden.

1. Mit abgetrennter Horizontalendstufe (z.B. Anschluß 8 an TK02 offen) und einer Ersatzbelastung an der Kathode von VO31 (100 W Glühlampe) muß das Netzteil ca. 100% der Sollspannung liefern.
2. Zur Fehlersuche bei Sicherungsbetrieb des Netzteiles kann CO07 überbrückt werden. Würde der Sicherungsbetrieb durch einen flüchtigen Überlastfall ausgelöst, kann das Gerät durch Aus- und Einschalten des Netzschalters wieder in Betrieb genommen werden.
3. Auf brummfreie Gleichspannung achten. Z.B. die Brummspannung von U1 liegt bei ca. 4 V und sollte, bedingt durch Kapazitätsverlust von CO33, nicht viel größer werden. Die Brummspannungen der übrigen Gleichspannungen sollten unter 1 V liegen. Die Brummspannungen von U2, U3 und U5 liegen im mV-Bereich.

(F)

Conseils de réparation

Attention! (bloc secteur de commutation)

Utiliser uniquement la pice originale 3447 00 04 (CO06). Dans le cas de condensateurs electrochimiques usuels CO06 0,47 μ F MKT doit etre équipé en plus.

1. Lorsque l'étage final horizontal est déconnecté (par ex. raccordement 8 sur TK02 ouvert) et dans le cas d'une charge de remplacement au niveau de la cathode de VO31 (lampe à incandescence de 100 W) le bloc seteur doit délivrer 100% env. des tensions de consigne.
2. Pour la détection d'erreurs en fonctionnement de sécurité du bloc secteur, il est possible de ponter CO07. Lorsque le fonctionnement de sûreté est déclenché à cause d'une surcharge transitoire, l'appareil peut être remis en marche au moyen du commutation principal mise en et hors circuit.
3. Veiller à la présence de tensions continues exemptes d'ondulation. La tension d'ondulation de U1 par exemple est de 4 V env. et ne devrait pas beaucoup augmenter en raison d'une perte de capacité de CO33. Les tensions d'ondulation des autres tensions continues devraient toujours être inférieures à 1 V. Les tensions d'ondulation de U2, U3, U5 se situent dans la gamme des mV.

(I)

Consigli per le riparazioni

Attenzione! (circ. alimentazione)

Utilizzare soltanto pezzo orig. 3447 00 04 CO06. Nei Elko CO06 reperibili in commercio deve essere ulteriorm. e montato un 0,47 μ F MKT.

1. Con lo stadio di uscita orizzontale staccato (ad es. collegamento 8 al TK02 aperto) e un carico di sostituzione al catodo di VO31 (una lampada a 100 W), l'alimentatore deve fornire circa il 100% della tensione nominale.
2. Per la ricerca di errori in caso di funzionamento di sicurezza del blocco dileeralimentazione, CO07 può essere cavallottato. Se il funzionamento di sicurezza dovesse scattare a causa di un sovraccarico transitorio, l'apparecchio può essere rimesso in funzione azionando l'interruttore principale d'inserzione e disinserzione.
3. Controllare che le tensioni continue siano prive di ronzio. Per es la tensione di ronzio di U1 si trova a ca. 4 V e non dovrebbe aumentare di molto, in dipendenza della perdita di capacità di CO33. Le tensioni di ronzio delle rimanenti tensioni continue dovrebbero rimanere inferiori a 1 V. La tensione di ronzio di U2, U3, U5 si trovano nel campo dei mV.

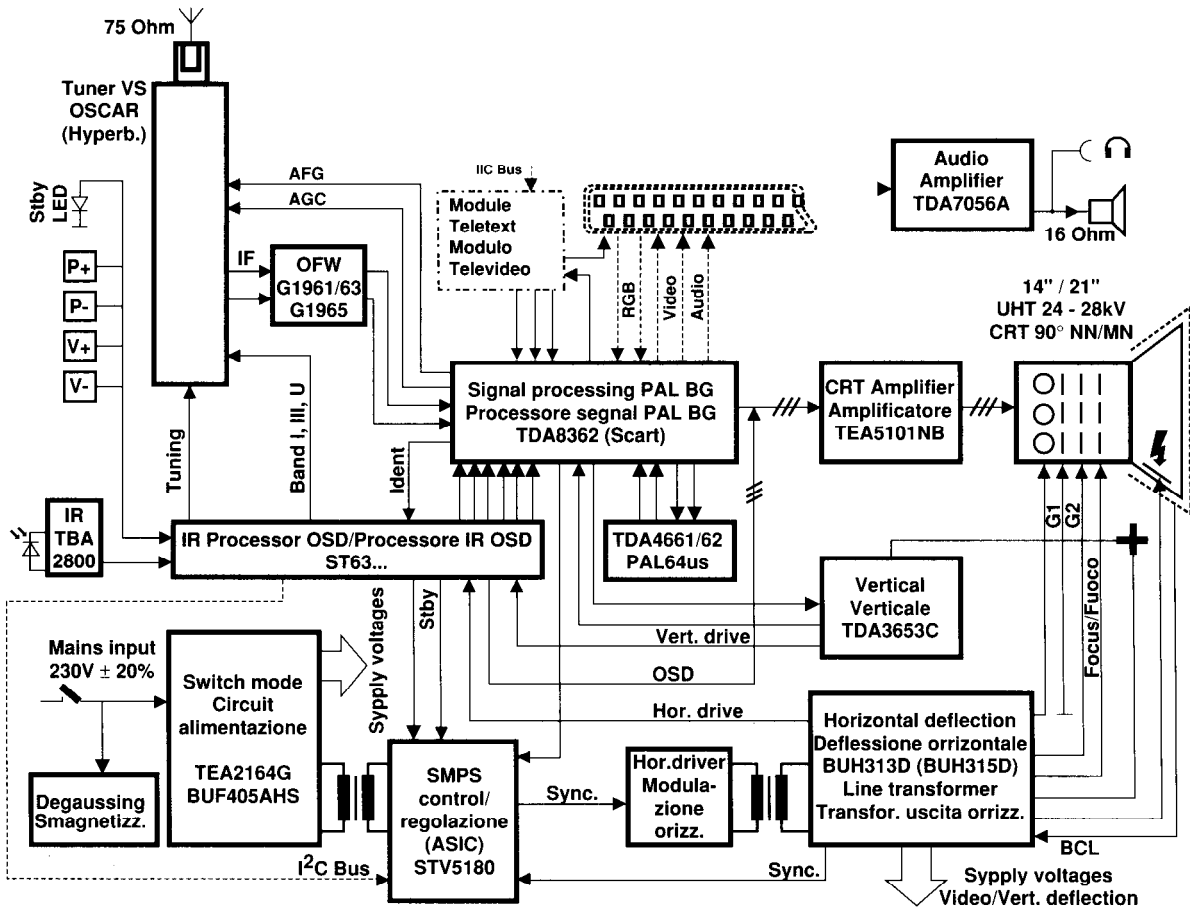
(S)

Reparationstips

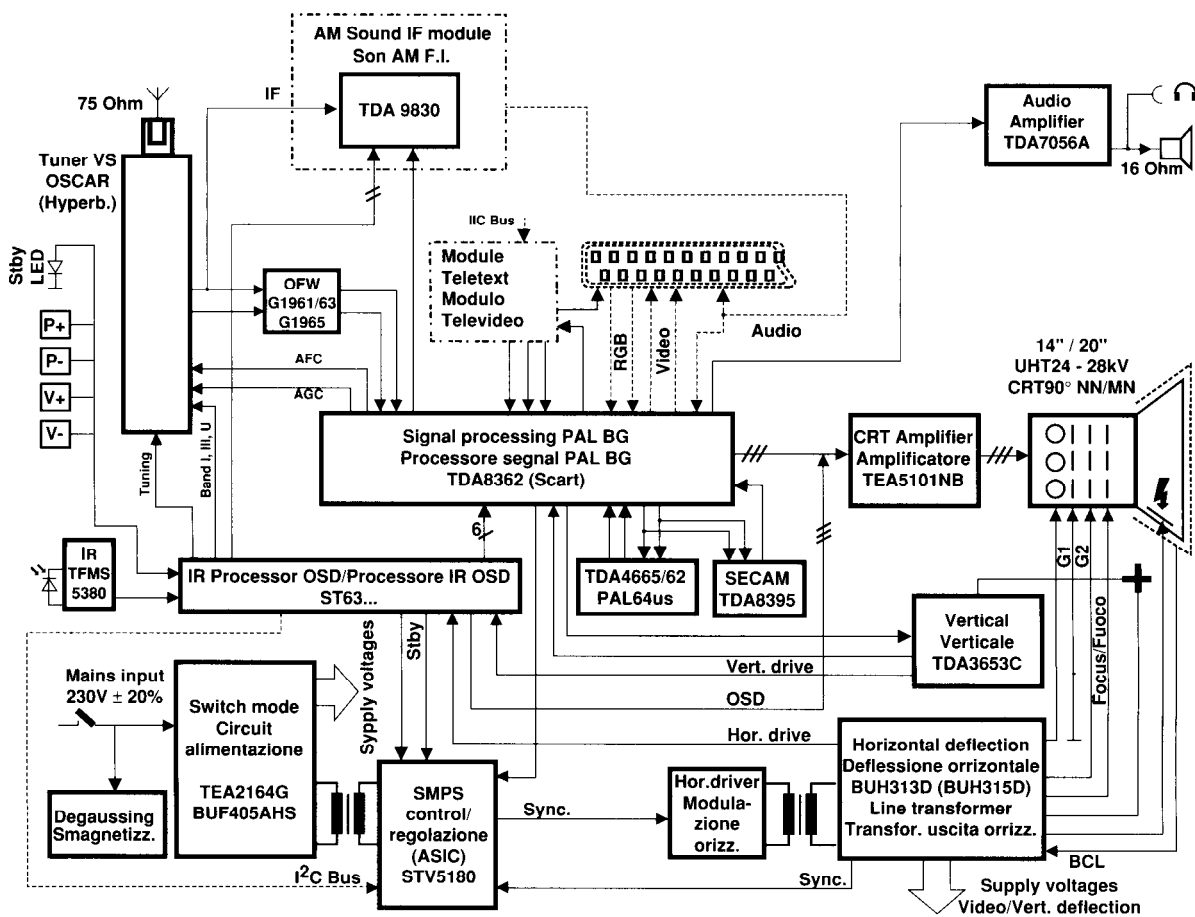
Obs! (gäller switch-nättdelen)

Endast originalkomponent 3447 00 04 bör användas för CO06. Om en standard elektrolytkondensator används för CO06, måste en 0,47 μ F MKT installeras parallellt.

1. Med horisontalslutsteget urkopplat (t.ex. stift 8 på TK02 öppen) och konstbelastning (t.ex. 100 W lamp) på katoden till VO31, måste nättdelen mata ca. 100% av den nödvändiga spänningen.
2. För felsökning kan skyddskretsen kopplas ur funktion med en bryggkoppling över CO07. Om skyddskretsen utlöser sig, beroende på en tillfällig överbelastning, kan mottagaren kopplas på på nytt med nätbrytaren.
3. Använd endast filtrerad DC-spänning. Exempel: Beroende på kapacitansförlusten över CO33, får brumnivån på U1 inte vara över 4 V. Brumnivån på övriga DC-spänningarna skall vara under 1 V. Brumnivån på U2, U3 och U5 är i mV storlek.



AM MULTINORM





Short operating instructions

General

The function menu is selected with the blue MENU button (RCN.. Remote Control) or the PROG button (RCF Remote Control).

The picture settings menu is selected with the yellow VIDEO button.

The sound settings menu is selected with the green SOUND button.

Once in the menu use the cursor buttons ▲ or ▼ to select required option and change (or adjust) it with the cursor buttons ◀ or ▶.

When necessary store by pressing the red OK button.

Return to normal TV mode by pressing the TV button.

Automatic programme search (APS):

1. Press the PROG. button (RCF.. Remote Control).

1. Press the blue MENU button twice.

2. Use the cursor button ▲ or ▼ to select APS function.

3. Activate it by pressing the cursor button ◀ or ▶.

4. Start APS with the red button OK (M).

The APSI -function will automatically search and store in memory all TV channels which can be received in the area where you live.

5. Return to normal TV reception by pressing the TV button.

Manual tuning:

1. Press the PROG. button (RCF.. Remote Control).

1. Press the blue MENU button twice.

2. Start the search function with the green SOUND button.

3. In the menu line PROGR use the cursor buttons to select the program memory location to which you want to assign the TV program you have found.

4. Use the red OK (M) button to store the setting in memory.

5. Return to normal TV reception by pressing the TV button.



Kurzbedienungsanleitung

Allgemein

Das Funktions-Menü wird mit der blauen MENU Taste (RCN.. Geber) oder der PROG. Taste (RCF., Geber), das Bild-Menü mit der gelben Taste VISION und das Ton-Menü mit der grünen Taste SOUND ausgewählt.

Im Menü kann mit der Cursor-Taste ▲ oder ▼ die erforderliche Option ausgewählt und mit der Cursor-Taste ◀ oder ▶ können die Werte verändert werden. Wenn erforderlich kann mit der roten Taste OK der Wert abgespeichert und mit der TV-Taste zum FS-Empfang zurückgeschaltet werden.

Automatischer Suchlauf (APS):

1. PROG Taste drücken (RCF.. Geber).

1. 2 x blaue MENU-Taste drücken.

2. Mit Cursor-Taste ▲ oder ▼ APS auswählen.

3. Mit Cursor-Taste ◀ oder ▶ die Funktion aktivieren.

4. Mit roter OK (M)-Taste APS starten:

Die APS-Funktion speichert alle örtlich zu empfangenden Fernsehprogramme.

5. Mit der Taste TV zum allgemeinen FS-Empfang zurückschalten.

Manuelle Abstimmung:

1. PROG Taste drücken (RCF.. Geber).

1. 2 x blaue MENU-Taste drücken.

2. Kanalsuche mit der grünen SOUND-Taste starten.

3. In der Zeile PROGR mit den Cursorstasten gewünschten Programmplatz wählen.

4. Mit der roten Taste OK (M) abspeichern.

5. Mit der Taste TV zum allgemeinen FS-Empfang zurückschalten.



Mode d'emploi abrégé

Généralités

Le menu de programmation est sélectionné par la touche MENU bleue (RCN.. télécommande) ou par la touche PROG (RCF.. télécommande).

Le menu d'image est sélectionné par la touche jaune VISION.

Le menu de son est sélectionné par la touche verte SOUND.

La touche curseur ▲ ou ▼ permet de sélectionner l'option requise et la touche curseur ◀ ou ▶ permet de modifier les valeurs. Si nécessaire, les valeurs peuvent être mémorisées à l'aide de la touche rouge OK ; pour retourner à la réception FS, appuyez sur la touche TV.

Recherche automatique (APS):

1. Appuyez sur la touche de PROG (RCF..télécommande).

1. Appuyez 2 fois sur la touche de MENU bleu.

2. Sélectionnez APS au moyen de la touche curseur ▲ ou ▼.

3. Activez la fonction par la touche curseur ◀ ou ▶.

4. Démarrez la recherche automatique des programmes en actionnant la touche rouge OK (M). La fonction APS mémorise tous les programmes de télévision pouvant être reçus dans votre région.

5. Retournez à la réception FS générale en actionnant la touche TV.

Ajustage manuel:

1. Appuyez sur la touche de PROG (RCF..télécommande).

1. Appuyez 2 fois sur la touche de MENU bleu.

2. Démarrez la recherche à l'aide de la touche verte.

3. Sélectionnez l'emplacement de mémoire de programme l'aide de la touche ▲ ou ▼ .

4. Mémorisez l'émetteur souhaité par la touche rouge OK (M).

5. Retournez à la réception FS générale en actionnant la touche TV.



Istruzioni per l'uso riassuntive

Generalità

Il menu delle funzioni viene selezionato premendo il pulsante tasto azzurro MENU (RCN.. telecomando) o il pulsante tasto PROG (RCF.. telecomando), mentre per il menu video si dovrà premere il pulsante giallo VISION e per il menu audio, il pulsante verde SOUND.

Nel menu è possibile selezionare l'opzione desiderata utilizzando il pulsante cursore ▲ oppure ▼ ed i valori possono essere modificati con il pulsante cursore ◀ oppure ▶. Se necessario, premendo il pulsante rosso OK è possibile memorizzare il valore e ricommutare sulla ricezione televisiva premendo il pulsante TV.

Ricerca automatica (APS):

1. Premere il tasto di PROG (RCF..telecomando).

1. Premere 2 volte il tasto azzurro di MENU.

2. Con il pulsante cursore ▲ oppure ▼, selezionate APS.

3. Attivate la funzione premendo il pulsante cursore ◀ oppure ▶.

4. Premendo il pulsante rosso OK (M) avvierete la ricerca automatica delle emittenti. A questo punto, la funzione APS memorizza tutti i programmi televisivi locali che si possono ricevere.

5. Ricommutate sulla ricezione televisiva normale premendo il pulsante TV.

Sintonizzazione manuale:

1. Premere il tasto di PROG (RCF..telecomando).

1. Premere 2 volte il tasto azzurro di MENU.

2. Avviate la ricerca premendo il tasto verde.

3. Selezionate la memoria di programma desiderata premendo il tasto cursore ▲ oppure ▼.

4. Memorizzate l'emittente desiderata premendo il tasto rosso OK (M).

5. Ricommutate sulla ricezione televisiva normale premendo il pulsante TV.



Kort bruksanvisning

Allmänt

Funktionsmenyn väljs med den blå MENU knappen (RCN.. Fjärrcontrollen) eller med den PROG knappen (RCF.. Fjärrcontrollen), bildmenyn med den gula knappen VISION och ljudmenyn med den gröna knappen SOUND. I menyn kan man välja önskad option med markörknappen ▲ eller ▼ och med markörknappen ◀ eller ▶ kan man ändra värdena. När det behövs kan värdet sparas med den röda knappen OK och man kan återgå till TV-mottagning med TV-knappen.

Automatisk programsökning (APS)

1. Tryck på PROG-knappen (RCF.. Fjärrcontrollen).

1. Tryck två gånger på den blå MENU knappen.

2. Välj APS med markörknappen ▲ eller ▼.

3. Aktivera funktionen med markörknappen ◀ eller ▶.

4. Genom att trycka på den röda OK (M)-knappen startar man den automatiska sändarsökningen. APS-funktionen sparar alla TV-program som kan tas emot på orten.

5. Med knappen TV återgår man till allmän TV-mottagning.

Manuell avstämning

1. Tryck på PROG-knappen (RCF.. Fjärrcontrollen).

1. Tryck två gånger på den blå MENU knappen.

2. Starta sökningen med den gröna knappen.

3. Välj önskad programplats med markörknappen ▲ eller ▼.

4. Spara önskad sändare med den röda OK (M)- knappen.

5. Med knappen TV återgår man till allmän TV-mottagning.