## **Grundig** passion

Matrix		
Item	See Model	Book
Service Notes (See Notes)	Grundig G1000 Chassis	4
X-Ray Precautions (See Notes)	Grundig G1000 Chassis	4
Circuit Diagram Symbols	Grundig CUC 1982	5
Remote Control Diagram	Grundig CUC 6360	5
Tuner Diagram	Grundig CUC 5301	3

## **Recommended Safety Parts**

Item	Part No.	Description	
F72 9112			
	09246-188.31	Degaussing Coil	
WW.	09246-188.71	Degaussing Coil	
	8300-068-696	Pict. Tube A 68 KZN 696X01	
	29201-360.11	CRT Socket	
	29703-291.81	Power Switch	
	8290-991-356	Power Cable	
	29201-361.17	Focus-UG 2 Control	
	29305-022.26	CRT Board CUC 7800	
R 816, R 817	8766-701-027	KSW SI A 12 OHM 5% -GA	
5172700/9	09246-188 31	Degaussing Coil	
ww	09246-188 71	Degaussing Coll	
	8300-068-696	Pict. Tube A 68 KZN 696X01	
	29201-360.11	CRT Socket	
	29303-452.03	Mains Plug - Lower Part	
	29703-291.32	Power Switch	
	8290-991-361	Power Cable	
	29201-361.17	Focus Control Unit	
R 1850	8765-049-157	MSW AX 0414-GA 3,3 MOHM	
S163 760/9	00046 100 71	Deseuvoine Cail	
	09246-188.71	Degaussing Coll Biot Tube A 59 LCC 696X01	
	20201 260 11	CPT Socket	
	29201-300.11	Euro-Converter	
	29303-377 03	Bracket Plug 2-POI	
	29303-452.03	Mains Plug - Lower Part	
	29703-291.32	Power Switch	
	8290-991-361	Power Cable	
	29201-361.19	Focus Control Unit	
R 1850	8765-049-157	MSW AX 0414-GA 3,3 MOHM	
CUC 7861			
	29304-050.95	Mains Interference Unit	
0.7	09621-113.02	Fuse Holder	
0.001	8531-505-221		
C 621	8660 008 228	SI-KERKO B-SS 2200PF 20%	
C 665	8660-098-234	SI-KERKO B-SS 2200FF 20%	
C 666	8515-912-063	EKP1 0 033UE 20% 630V	
C 6001	8511-793-047	MP 3 0 47 UF 20% 250VW	
C 6002	8511-793-045	MP 0.33 UF 20% 250VW	
L 6001	29500-809.97	FUNKENSTOERDR	
OK637	8306-000-012	OPTOKOPPLET CNY 17 F1	
OK646	8306-000-012	OPTOKOPPLET CNY 17 F1	
R 503	8701-230-817	NKS 3 4,7 OHM 5% ROE	
R 520	8705-329-071	MOW LI 0411 820 OHM 5%	
R 525	8735-003-068	DW 0,75W 0,68 OHM 10%	
R 551	8705-227-423	MOW AX0411-GA 8,2 OHM 5% DRA 22	
R 552	8700-329-009	KSW LI 0207-NE 2,2 OHM	
R 000	8700-349-155		
SI 401	8315-616-205		
SI 406	8315-616-205	LOET-SL-GR 800 MA/T	
SI 411	8315-616-205	LOET-SL-GR 800 MA/T	
SI 630	8315-619-028	LOET-SIGR 1.6 A/T	
SI 671	8315-622-025	LOET-SIGR 3,15 A/T	
SI 691	8315-623-008	LOET-SIGR 4 A/T	
SI 6001	8315-622-503	FS.3,15 A/T H 250V	
TR 8	29201-445.97	FOKUSIERUEBERTRAGER	
TR 410	29201-382.97	UEBERTRAGER EF20	
TR 526	29201-030.08	DIODENSPLITTRAO KPL	
TR 6010	09032-301.02	NETZTRAFO	
IR 651	29201-408.97	SPERRWANDLERTRAFO KPL	
WW.	29201-453.08	SPERRWANDLERTRAFO KPL	(vvvv. = Optional)
	ICGIII   E72 9112   WW.   R 816, R 817   ST72 760/9   WW.   R 1850   ST63 760/9   WW.   R 1850   ST63 760/9   C 7   C 621   C 662   C 666   C 6001   C 6625   C 6666   C 6001   C 6002   L 6001   OK646   R 503   R 525   R 551   R 552   R 665   R 6009   SI 401   SI 601   TR 8   TR 410   TR 526   TR 6010   TR 651   WW.	Itegin Pairt NO.   E72 9112 09246-188.31   WW. 09246-188.71   8300-068-696 29201-360.11   29703-291.81 8290-991-356   29201-360.11 29305-022.26   R 816, R 817 8766-701-027   ST72 760/9 09246-188.31   WW. 09246-188.71   8300-068-696 29201-360.11   29303-452.03 29703-291.32   8290-991-361 29201-361.17   P 1850 8765-049-157   ST63 760/9 09246-188.71   8300-059-696 29201-361.17   P 1850 8765-049-157   ST63 760/9 09246-188.71   29303-377.03 29303-377.03   29303-377.03 29303-377.03   29303-377.03 29303-377.03   29303-377.03 29303-377.03   29303-377.03 29303-452.03   29703-291.32 8290-991.361   29201-361.19 29201-361.19   R 1850 8765-049-157   CUC 7861 29304-050.95   09621-113.02 <t< td=""><td>Rein Part No. Description   F72 9112 09246-188.31 Degaussing Coil   WW. 09246-188.71 Degaussing Coil   8300-068-866 Pict. Tube A 68 K2N 696X01   29201-360.11 CRT Socket   29201-361.17 Power Switch   29201-361.17 Power Cable   29201-361.17 Power Cable   29201-361.17 Power Cable   29201-360.11 CRT Board CUC 7800   816. R 817 Begaussing Coil   99246-188.31 Degaussing Coil   29201-360.11 CRT Socket   29201-361.17 Power Switch   29201-361.17 Power Switch   29201-361.17 Pocaussing Coil   29201-361.17 Power Cable   29201-361.19 Power Cable   29201-361.19 Power Cable</td></t<>	Rein Part No. Description   F72 9112 09246-188.31 Degaussing Coil   WW. 09246-188.71 Degaussing Coil   8300-068-866 Pict. Tube A 68 K2N 696X01   29201-360.11 CRT Socket   29201-361.17 Power Switch   29201-361.17 Power Cable   29201-361.17 Power Cable   29201-361.17 Power Cable   29201-360.11 CRT Board CUC 7800   816. R 817 Begaussing Coil   99246-188.31 Degaussing Coil   29201-360.11 CRT Socket   29201-361.17 Power Switch   29201-361.17 Power Switch   29201-361.17 Pocaussing Coil   29201-361.17 Power Cable   29201-361.19 Power Cable   29201-361.19 Power Cable

## Service Adjustments Service and Special **Functions**

1: Switching-on Options

#### ATS Reset

Press and hold the L+ button on the local keyboard while switching on with the mains button to set the ATS-bit. This option activates the ATS function next time the receiver is switched on.

ATS Start Pressing the buttons "P/C" (approx. 4 secs.) --> OK (language selection menu) --> starts the Auto Tuning System (ATS). When finding a TV signal, the ATS system automatically determines the fine tuning value and the VPS signal for the station ident. Additionally for the programmes 1 ... 99 the volume offset is reset and the optimum values for brightness, colour contrast and volume level are stored together with the Peri bit for the

### Loading the Average Values

respective country.

Press and hold the "P-" button on the local keyboard and switch the TV on with the mains button. In doing so the analog average values for the programmes 1 - 99 and AV1 - AV4 are

loaded in the programme memory IC840, the Luminance Delay is set to "0". The individual settings can be entered and stored with the remote control handset

#### **Emergency Data**

The processor IC850 in this TV receiver is fitted with two memories in which the picture geometry data is stored. If this IC fails or the data has been changed the TV receiver must be switched on with the emergency data set.

## Loading the Emergency Data (eg. after

changing mP IC850) Connect pin 2 of the processor to chassis and switch the TV on with the mains button. The EEPROM in the processor IC850 is loaded with

- the basic data set and the geometry data for the Decoder/Sync Processor TDA 9160/9162.
- the basic data set for the RGB Processor TDA 4685.
- the AGC reference voltage (tuner gain control).
  - the AFC reference voltage (PLL-control).
- 2: Settings Via the Info Menu

#### **EPROM Version Number**

The version number can be called up in the Info Menu with the "AUX" button. The index 05 of the part number (19798-254.05) indicates the EPROM version.

### Programme Lock

(protection against unauthorised use) You can cancel your personal code number by pressing  $\triangleright \triangleleft \nabla \triangle$  and OK sequentially.

#### **One place/Two Place Programme Selection** Via the Menu Info Centre ---> Special Functions

--> Settings, Programme Selection can be switched over between 1 - 9 and 1 - 99.

## Maximum Programme Number

Via the Menu Info Centre --> Special Functions --> Settings. When storing the channel number "00" at any programme position, programme selection with the VA buttons is limited to the numbers lower than this position.

## OSD-ON/OSD-OFF - all programmes.

The on screen display can be switched on or off via the Menu Info Centre --> Special Functions --> Settings --> Pict./Sound Options. When selecting the OSD-OFF option the station identifications and scales for the analog values is switched off

#### Volume Offset

Via the menu --> Special Functions --> Settings the volume level can be changed in 16 steps for each individual programme position.

### 3: Settings via the Audio Menu

The following settings can be changed with the Audio Menu:

- Loudspeaker: Mono/Stereo sound
- Headphones: Mono/Stereo sound Equaliser: frequencies 1 ... 12kHz
- Configuration of loudspeaker boxes
- Effect sounds with the IDTV button
- (effect sound fields menu)

## Switching Over the Sound (only multi system) to: Stereo, Mono, FM, NICAM, NICAM B

Via the Audio Menu --> Sound Switch the stereo decoder for the desired sound reception with  $\triangleright \blacktriangleleft$  buttons.

#### FM-sound stereo broadcast:

 Switchable between Stereo <---> Mono Two-channel sound: switchable between Sound 1  $\leq$  Sound 2.

The sound for the loudspeakers and headphones can be switched over independently of each other.

#### NICAM-sound mono broadcast: switchable between NICAM Mono

<---> FM-Mono

## NICAM-sound stereo broadcast:

- switchable between NICAM Stereo <---> FM-Mono
- NICAM-sound dual-sound broadcast:
- switchable to NICAM-sound 1 --> NICAM-sound 2 --> FM-Mono

## NICAM not relating to the picture:

switchable to NICAM-sound 1 --> NICAMsound 2 --> FM-Mono, preferred sound is FM-Mono

#### AV mode:

- Stereo (preferred setting) --> Sound 1 --> Sound 2
- With Sound 1 and Sound 2, the sound for the loudspeakers and headphones can be switched over independently of each other.

## 4: Settings via the Station Ident

Select the menu Info Centre --> TV station Table and activate the desired TV station.

## **OSD-ON/OSD-OFF Individual Programmes**

Note: only TVs with LED display. Enter a décimal point "." at the first place of the station identification. With this setting the display can be switched off for the individual programmes. The first places of the station identification can be filled with any kind of characters.

#### **Forced Switching to Mono**

#### Example: MONO

ARD Indication: The stereo decoder is made to remain in the FM-Mono mode. This function is advantageous in the case of stereo broadcasts in poor reception conditions.

#### Automatic Frequency Control

## AV or AF

The TV tuner is automatically re-tuned according to the variations of the receiving frequency which is advantageous when feeding in the video signal via the aerial socket.

#### Forced Switching to SECAM

### SECAM or SE

Colour errors may occur when operating the TV with Canal-plus decoders in SECAM standard. These errors can be eliminated by forced switching to SECAM.

### 5: Settings via the AUX Position

The "AUX" command initialises an input mode in which certain commands are interpreted differently. This mode remains active for about 4 secs, unless another command is entered. The indication "AUX" is shown on the screen for 4 secs.

## Changing the Display Brightness

(VFD display only) Press the "AUX" button --> buttons sequentially.

## Setting the Peri Bit

"AUX" -->" "0/AV". With the PERI-bit set, the control processor evaluates the switching voltage on pin 8 of the EURO-AV-socket AV1 (black) and switches the TV receiver to this input, eg. on descrambler operation. The Peri symbol illuminates in the display of the keyboard unit.

## Switching over the descrambler:

- Descrambler off (Peri bit set) Descrambler on Auto
- Descrambler on Stereo (Peri bit set) (Peri bit set)

(Peri bit set)

- Descrambler on Mono L Descrambler on Mono - R

## **Copy Function**

## In operating mode:

Select first the AV signal source eg. AV1, AV2 etc. On: "AUX" --> "0/AV" indication "Copy on" Off: "AUX" --> "0/AV" indication "Copy off"

#### Copying possibilities:

From	То
AV1(black)	> AV2 (orange) a
AV2 (orange)	> AV3 (blue).
AV3 (blue)	> AV2 (orange).
AV4 (CCVS-socket)	> AV2 (orange) a
AV5 (S-VHS)	> AV2 (orange) a

### Please take into account the following restrictions

Peri operation is not possible when AV1 is used as a signal source. Switching over to the AV2 or AV3 programme is only possible if the selected AV position and the signal source are the same.

### Copy function In stand-by mode: (not for OSD-TVs).

## Firstly select the AV signal source eg. AV1, AV2 etc. - On: "AUX" --> "0/AV"

- (Indication "Copy on".)
- Buttons "AUX" -->

(Indication "COP" in the display.) Copying possibilities are the same as before.

Attention: In Copy Standby-Mode the switched-mode power supply is not switched off.

**De-activation of the copy-mode:** (not for OSD-TVs).

#### To cancel the copy mode: - Press standby or power switch off. Changing the headphone volume Enter "AUX" --> ▶ ◀ changes the volume level for headphones.

Switching to mono --> stereo sound "AUX" --> activates the sound switching function: Mono --> Stereo --> Mono A --> Mono B etc.

## 6: IR-Data Programmer

With this menu and the IR-Data Programmer 2. it is possible to transfer a maximum of 99 programme positions with the data for the TV norm, Peri, 6-place station identification, the fine tuning centre frequency and the volume offset "0". The Programmer AP transfers only channels and 4-place station identifications and the volume offset "0".

## Functions --> IR-Data Programmer. Attention: The data transfer can be affected by

the decoder is set to "ON"

when a 16:9 signal source is

connected to the AV1 socket

16:9 switching voltage at the AV1

4:3 switching voltage at the AV1

Ratio

Identification:

source, Pin 8 = 6V.

source, Pin 8 = 12V.

8: Setting the Analog Values

Brightness 32 Colour contrast 24 40 B/W contrast 21 32 Volume 10 10 Alignment All adjustment controls not mentioned in this description are adjusted during production and and AV3 (blue). must not be re-adjusted in the case of repairs. 1. Chassis Board and AV3 (blue). Measuring Instruments: and AV3 (blue) Oscilloscope with 10:1 test probe Colour test pattern High resistance voltmeter. Checks and adjustments after replacement or repair of: Power Supply: Horizontal Deflection: 1.2, 1.4, 1.8, 1.9 Picture Tube/CRT Panel: 1.2, 1.7 Colour-Decoder Sync. Module: 1.7 IF Amplifier, Tuner: 1.5 Tuning Module: 1.6, 1.8 Vertical Deflection: 1.9 Bridge Coil: only necessary after improper changes in the horizontal deflection adjustment 1.3 1.1: Alignment +A Voltage Preparation Set luminance to minimum. Connect the voltmeter to the cathode of D681. Alignment Process Set the control R654 to the voltage 152V. 1.2: Alignment Screen grid voltage U Preparation Feed in a test pattern. With the remote control adjust the screen brightness so that the grey areas just become dark. Switch the TV receiver to AV operation. Connect a high-ohmic voltmeter (series resistance approx. 220 W) to the test points R, G. B and determine the maximum voltage. Alignment Process With the control SG on the picture tube panel set the maximum voltage level to approx. 165 ... 170V. If retrace lines are visible on the screen reduce the voltage by approx. 10V. Call up via the Menu Info Centre --> Special Black level interference's from electrical lighting fixtures. 165...170V 7: Autom. Change between 4:3/16:9 Aspect With the setting "Format 4:3/16:9 auto" the aspect ratio is switched over automatically 1.3: Alignment in programme positions 1 ... 99 when Bridge coil L551 in AV position or with the Peri-bit set, Preparation The bridge coil L551 is correctly adjusted during production and should not be readjusted anymore. Call up the Service Programme --> Info Centre --> Special Functions --> Service --> Code 8500 --> Ġeometry. Set the horizontal amplitude to minimum. Connect channel one an oscilloscope to the collector of the transistor T572.

Minimum value Optimum value

When exceeding the minimum acceptable values for the brightness, colour contrast and volume level specified in the table below, the appropriate optimum value is initialised when switching the TV on or changing from RF value AV.

Alignment Process Adjust the coil L511 so that both oscillograms have the same pulse width. Re-adjust the horizontal amplitude according to

the test pattern and store.

Connect channel two of an oscilloscope

between the diodes D502 and D503.

## Service Adjustments Cont'd.

1.4: Alignment Line sharpness

## Preparation

Select the convergence test pattern. Contrast to maximum Set the brightness so that the black background of the test pattern is just brightening.

## Alignment Process

With the focus control adjust the horizontal lines for maximum sharpness

Attention: For measurements on the focusing panel use only sufficiently insulated measuring cables and test probes with adequate electric strength (eg. 100:1).

## 1.5: Alignment

Tuner-AGC. Manual or Automatic.

#### Preparation Manual:

Feed in a standard test pattern in the upper range of the UHF band: the RF must be 1.5mV (64dBmV, noise free picture) at least. Info Centre --> Special Functions --> Service --> Code 8500 --> Tuner-AGC --> Manual.

## Automatic:

Info Centre --> Special Functions --> Service --> Code 8500 --> Tuner-AGC --> Automatic.

### **AFC-Reference:**

Info Centre --> Special Functions --> Service --> Code 8500 --> AFC-Reference.

Tune to a local station on a channel as low as possible at the desired programme position with standard channel spacing without fine tunina

## Not For Servicing.

## **Alignment Process**

## Manual:

With buttons - and + tune the TV station so that noise just starts to appear in the picture. Then tune in reverse direction until the picture becomes noise free. Store with OK.

### Automatic:

The control processor will set the optimum value for the delayed gain control voltage. Activate with button OK.

## **AFC-Reference:**

On activation of AFC Reference Automatic a rectified IF-voltage is measured at the AFC output of the IF amplifier which is used on station search as a comparative value for VCR-RF playback (station identification "AV") to readjust the modulator drift. Activate with OK.

No function for the buttons - and +.

## 1.6: Alignment

Colour match.

## Preparation

Call up the programme position of the desired TV station. Info Centre --> Special Functions --> Settings -->Colour Match.

## Alignment Process

Adjust with - and + buttons to make the signals coincide. Store with OK

1.7: Alignment White balance

Preparation Call up the White Balance menu via the Service Programme Info Centre --> Special Functions --> Service --> Code 8500.

### Alignment Process

With - and + set the VG and VB values so that the white rectangular area in the middle of the picture becomes achromatic. Store with OK.

1.8: Alignment Picture sharpness

## Preparation

Call up the programme position of the desired TV station Info Centre --> Picture Menu --> Sharpness.

## Alignment Process

Change the value with the buttons - +. 1.9:Alignment

## Picture geometry

## Preparation

Info Centre --> Special Functions --> Service --> Code 8500 --> Geometry. For accurate adjustment of the picture a test generator or standard test pattern should be used. The integrated test pattern or grid pattern may also be used.

Attention: Start always with the "V-Middle" adjustment otherwise the other vertical deflection parameters would defy correct geometry adjustment.

### Alignment Process

Via the menu, select the geometry values for the vertical deflection, then set the values for the horizontal deflection.

### Prenaration

"V-Middle" adjustment with a colour test pattern: select the "V-Middle" menu. The upper part of the picture is coloured the lower part is black and white.

## Alignment Process

With the - or + button move the three broken lines on the left and on the right of the indication "V-Middle" upwards or downwards so that they coincide with the line separating the coloured part and B/W part of the picture. Continue with the picture geometry adjustment via the menu and store.

### Preparation

"V-Middle" adjustment with a video generator, eg. Grundig VG 1000. Feed in the convergence test pattern with standard colour bars via RF. To store this adjustment move the bar to 'Terminate with Store" and confirm with OK.

### Alignment Process

With the - or + button change the setting so that the G-Y vector (orange area in the centre of the picture) is just covered. Continue with the picture geometry adjustment via the menu and store.

### Preparation

The picture geometry is set to the last stored value whenever the receiver is switched on.

## Reset:

Under the menu item "Reset" an average data set from the ROM IC860 is stored. After inadvertent readjustment during servicing, these basic values can be re-loaded at any time. For this, move the bar to "Reset". Press the OK button. By pressing the "AUX" button the picture geometry is set according to the "Reset" values. With the i button return to the normal menu.







3

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## 6





## **Display Control Unit with Videotext Diagram**



## AF Output Diagram "A"



AF Output Diagram "B"









MUTE, Standby

Togglefunktion im Sound-Mode "On/OFF" / Toggle function in the Sound Mode "ON/OFF" Normalbetrieb ohne Tastenbetätigung / Normal operation without pressing the buttons IF Amp Diagram



2

## IF Amp Diagram Cont'd



## 14

## **Tuner Diagram**

