

TV: Matchline service mode

Revision history	
2004-06-27	• Added 34PT8420 in table
2004-03-19	• Added 28PT7156 settings in EM2E table
2004-03-13	• Added 28PT7156 in table
2004-02-18	• Added link (A10 table)
2004-02-15	• Updated software list • Added 29PT9008 in EM2 table
2004-02-08	• Added 32PW9501 settings • Added 50P8341A settings
2004-02-04	• Added 29PT8508 settings
2004-01-24	• Added 34PW8520 settings
2004-01-09	• Added note on 24PW6006 • Updated software version table
2004-01-05	• Added 32PW5407 (L01.1E) settings
2004-01-04	• Added 32PW8807 (EM3E) settings

Modern TV’s have most of their settings set by software. To get in the so-called ‘service mode’ there are two options available for Philips TV’s:

Option 1:
In the TV-set itself is a 3-pin connector with which either SERVICE-DEFAULT or SERVICE-MODE can be activated. For the MG3.1E chassis this connector is depicted 0356 (SERVICE-PINS) on page K7 (TXT&CONTROL). Shorting pins 1-2 will activate SERVICE-MODE. Shorting pins 2-3 will activate SERVICE-DEFAULT.
IMPORTANT NOTE: using the service pins will disable any software security feature!!

Option 2:
Activate these modes using the remote control.

Obviously option 2 is the preferred method because the settings have to be changed using a remote control anyway....

To activate SERVICE-DEFAULT:

- Press **0 6 2 5 9 6** and then the **[menu]** button
The message ‘Service Default’ appears and channel ‘SER T’ will be selected. This only sets some settings to a preset value (channel/color/brightness/volume and such).

This mode is primarily intended to set things to a predefined state for servicing. Measurements/adjustments are usually carried out with service default active. You can exit the service default mode by placing the TV into standby (not through the mains switch).

To activate SERVICE-MODE:

- Press **0 6 2 5 9 6** and then the **[i+]** button (Note: the [i+] button is also known as [OSD] or [STATUS] button.

After pressing **0 6 2 5 9 6** the message 'Dealer' should have appeared.

Other codes which seem to work:

0 1 6 2 5 9 6

0 3 6 2 5 9 6

0 4 6 2 5 9 6

0 7 6 2 5 9 6

0 8 6 2 5 9 6

These alternative codes have just an additional number after the '0'. The additional number is any number which was not part of the 'original' code.

More precisely: the number following the '0' can be repeated multiple times, so

0 1 1 1 6 2 5 9 6 is also acceptable.

Note: press the numbers not faster (or slower) than you would normally do if you had to press multiple numbers. Do not worry about the channel changing while you press the numbers.

Tip from Jan Christiaan van Winkel: if you switch to Teletext mode before entering the service code then the channel changing won't take place. You even have some visible feedback of the numbers you are entering.

Service technicians have the means of entering service mode using a special remote control. So, if above method does not work, and you happen to own a programmable remote control (like the Pronto) then you might be helped with the remote control codes themselves: go to the [TV: Service Mode \(remote control codes\)](#) section for these. If you don't own a programmable remote but want to build your own: go to the [Projects: Remote control](#) page. There is an extremely simple one, consisting of just a resistor and infrared LED and with software to control it!

It has been pointed out to me, by someone named Martin, that entering the service default mode by these methods would disable the Protection system and could therefore put you at risk of harming yourself. Unfortunately he didn't go into more detail on why or how.

However, be warned that if you use the service pins to access service mode all software security features ARE typically switched OFF!!!

The service mode menu will look something like this:

Date: Sep 26 2000 Id: MG31E11.8_02581

Operation Hours: XXXXX.X
Errors: XXX XXX XXX XXX ...

Defect. Module: Unknown

Service

Reset Error Buffer
Functional Test
Alignments
Dealer Options

The ‘Alignment’ and ‘Dealer Options’ have sub-menu’s which are layout in the the tables. The bold setting is the 'default' setting, the others are alternative settings.

Every TV has it's specific settings (especially the geometry). So, everyone is invited to send in his, or hers, list of settings for their television. Even if the model is already in the list! There are a lot of readers which are helped with a list of settings which they can use as a starting point.

Notes:

Please note that ****every**** TV has it's own individual settings. Even if the TV is from the same production line. Options (and also the option bytes) are hardware specific and should **not** be changed (they reflect the actual hardware). Since these hardware settings are typically only read when the TV is powered up (using the mains switch), it means that these settings have to be stored prior to this. If such a hardware setting is not correct (eg. you changed it yourself) then the TV might get into protection. Since you won't be able to see anything on screen anymore it is difficult to correct this. One of the options is to replace or clear the EEPROM (first make a backup of the original settings...). If the TV recognizes a new EEPROM it should start up with factory default settings....

The following tables can be found here:

Table A10	32PW6515
Table EM1	50P8341, 34PW8520
Table EM2	28PT7156, 32PW8106, 29PT8508, 32PW8707, 29PT9008
Table EM3	32PW8807
Table GFL	32PW9501
Table L01	25PT2252, 25PT4107, 32PW5407, 21PT5507, 24PW6006, 28PW6006, 32PW6006, 32PW6506
Table MG2	32PW9545
Table MG3	PW9416, 32PW9616, 32PW9616, 32PW9616, 32PW9617, 32PW9765, 32PW9767 , 36PW9767
Table MG7	28PW9525, 32PW9525 Note: Also see MG7.1E specific pages
TV: Miscellaneous	For all others, especially older models.

Geometry alignments:

When convergence or geometry alignments are to be carried out take the following hints in consideration.

Have the TV set warmed up for at least 20 minutes.

When adjusting, sit in front of the TV about 1.5 .. 3 meters away from the screen. Make sure you are at eye level with the area on the screen you are adjusting.

Because an alignment in one area of the screen affects other areas on the screen, you need to perform several 'passes' through the whole sequence of adjusting to get the desired result. Adjust the parameters in the same order as they are presented on screen, starting from the top and then going down the list. This means that you typically adjust 'V.slope' first , followed by 'V. shift', and so on.

Customer Service Menu:

Other menu's and settings, besides the service mode, are available. There is the Customer Service Menu (with thanks to Armin Gawatz for the method to enter the Customer Service Menu). You get into this menu using the combination of the [MENU] button on the TV and using the [MUTE] button on the remote. Hold down the [MENU] button (TV) and the [MUTE] button (remote) simultaneously for about 4 seconds. The Customer Service Menu will appear. These Customer Service Menu's are informational pages only, you can not change anything.

Alternative method: press first TV-[MENU] for 4 seconds and then press [MUTE] until menu appears.

If you have a TV with a MG3.2E chassis (or a TV with the same/newer software) then you can also enter the Customer Service menu by pressing **1 2 3 6 5 4** using the standard remote control. This also applies to TV's with the MG7.1E chassis (thanks to Vsevolod Ilyin): as said before: this depends on the software version of the TV. Version 02581 does not seem to support this method.

PW9525:

CUSTOMER SERVICE MENU 1		
1	SW Versi on	MG31E11. 8_02581
2	Code 1	050 066 050 066 050
3	Code 2	066 050 066
4	LS Vol ume	0
5	LS Brightness	32
6	LS Contrast	26
7	LS Col our	19
8	LS Headphone	6
9	Sharpness	5
10	Dol by	Not present
11	Surround Mode	3D Surround
11a	Tuner Frequency	751 MHz

PW9525:

CUSTOMER SERVICE MENU 2		
12	Rear Vol ume	5
13	Centre Vol ume	5
14	DNR	Maxi mum
15	Noise Fi gure	42
16	Di gital Opti on	Natural Moti on
17	Col our System	Pal
18	TV System	BG
19	Audi o System	Stereo
20	Tuned bi t	Off
21	Speaker config.	full i nternal

22 Digital sources None

For the PW9616 model a typical customer service menu looks like this (contributed by Aad van der Zanden):

PW9616:

CUSTOMER SERVICE MENU 1		
1	SW Version	MG31E11. A_02581
2	Code 1	no errors
3	Code 2	-
4	LS Volume	9
5	LS Brightness	36
6	LS Contrast	32
7	LS Colour	33
8	LS Headphone	12
9	Sharpness	2
10	Dolby	Not present
11	Surround Mode	Pro logic
11a	Tuner Frequency	681 MHz

PW9616:

CUSTOMER SERVICE MENU 2		
12	-	
13	Centre Volume	11
14	DNR	Maximum
15	Noise Figure	20
16	Digital Option	Natural Motion
17	Colour System	Pal
18	TV System	BG
19	Audio System	Stereo
20	Tuned bit	Off
21	Speaker config.	Surr ext.
22	Digital sources	None
23	Rear vol left	18
24	Rear vol right	18

For the PW9767 model a typical customer service menu looks like this (contributed by René Krottje):

PW9767:

CUSTOMER SERVICE MENU 0		
0	Typenumber	32PW976712
25	FBX SW Version	310431703690

CUSTOMER SERVICE MENU 1

1 SW Version	MG32E11. 2_03611
2 Code 1	No errors
3 Code 2	-
4 LS Volume	7
5 LS Brightness	25
6 LS Contrast	51
7 LS Colour	26
8 LS Headphone	0
9 Sharpness	5
10 Dolby	Not present
11 Surround Mode	Pro logic
11a Tuner Frequency	632 MHz
13 Centre Volume	13
14 DNR	Medium
15 Noise Figure	20
16 Digital option	Pixel plus
17 Colour System	PAL
18 TV System	BG
19 Audio System	Stereo
20 Tuned bit	On
21 Speaker config.	Surround external
22 Digital sources	Ext. 1 + Dig. STB
23 Rear Volume Left	5
24 Rear Volume Right	14

Dealer Demo Mode:

One of the Dealer Options in the service mode is the 'Demo Menu Enable'. To show this Demo Menu you have to keep the [MENU] button on the TV pressed for more than 6 seconds. The following items will appear (one at the time):

Item	Options
COMB FILTER	ON / OFF
SURROUND MODE	3D SURROUND / DOLBY 3 STEREO / STEREO
TINT	NORMAL / WARM / COOL
DIGITAL OPTIONS	Natural Motion / Nat. Motion Demo / 100 Hz. / Digital Scan
SMART SOUND CONTROL	PERSONAL / MOVIE / SPEECH / MUSIC
SMART PICTURE CONTROL	PERSONAL / ECO / NATURAL / RICH / MULTIMEDIA
VIEW MODE	AUTO FORMAT / SUPER ZOOM / 4:3 / MOVIE EXPAND 14:9 / MOVIE EXPAND 16:9 / 16:9 SUBTITLE / WIDESCREEN
DYNAMIC CONTRAST	MAX / OFF / MIN / MED

DYN. NOISE REDUCTION	MAX / OFF / MIN / MED
CTI	ON / OFF
ZOOM	OFF / 1X / 4X / 8X / 16X
LIGHTSENSOR	ON / OFF

There are some options available which are normally not accessible by other methods (ie. the bold emphasized items). The 'Nat. Motion Demo' shows a black and white picture were colors are blended in were 'natural motion' is detected.

Use TV-MENU to toggle the options. With TV-P+ and TV-P- you can scroll through the items. After selecting the last item and using TV-P+ you leave this mode.

The settings you change do not seem to be permanent (even changing the channel, while being in this mode, will revert the changes made most of the time).

In the top of the screen the message 'Demo' is usually displayed. If you press the (i+) remote key once while you were keeping the TV-[MENU] key pressed then 'Demo' will be removed. This works using some other keys as well.

The method for leaving the Demo mode is the same as how this mode is activated (pressing the MENU button for more than 6 seconds).

Notes:

When 'Service Default' has been set, it can happen that when the TV is powered back on, it will display 'Service Default' again. You have to go in (and out) of standby to return to normal operation.

A response I received from Lauri gives the following method:

"The solution for me was to turn the TV off using the remote control. It wouldn't disappear if I used the tv's own power only. I had to turn the tv off using the remote, and then press the power button in the tv itself, that did the trick."

The first 'hint' for these service mode codes was found in a 'TV repair answers' page from the AnaTek Corporation (www.anatekcorp.com).

The text concerning was:

"QUESTION NO. P617_10: How do I get to the service menu on a Philips Widescreen 32" TV 9503?

On most Philips products, entering 0_6_2_5_9_6_MENU will bring up the default service mode.

1_6_2_5_9_6_MENU will bring up an adjustment mode on some sets.

0_6_2_5_9_7_MENU will bring up a convergence mode on some of their PTVs.

I am not sure if this will work on a 32" but it's worth a shot, it works on all Phillips PTV's of 42" and bigger.

Using the original remote, service mode062596 and hit menu; convergence mode062597 and hit menu."

- Another site which gives some explanation on service mode stuff can be found at www.keohi.com . Go to the HDTV section. It mentions the following service codes: 062595 (NTSC Service Mode), 062596 (Whole System Service Mode) and 062597 (Convergence Service Mode). This site goes into some detail on how to adjust some settings (although they don't directly relate to the PW9525 model).
- Electronic owner manuals can be found on most of the Philips sites. Note that this is region specific, which means that only models valid for that particular region are available. You can find the PW9525 manual on the Dutch Philips site (in Dutch!), but not on the American Philips site. A good starting point is www.ce-europe.philips.com. The english manual of the PW9525 can be found on the United Kingdom site of Philips (you can use the link above but make sure you select UNITED KINGDOM as language!). Use the 'Owner manuals' section which gives you a search-entry. Note that you must explicitly use the full searchname (like '25PW9525') to find it. Entering 'PW9525' will give no results.
- The customer care site of Philips has a more extensive search capability. It will find all kind of different manuals in different languages for a specific model. Instead of entering the whole model number you can just enter part of it. This site can be reached at

www.p4c.philips.com.

Compatible models:

Some replies I received show that other models accept the service code too (or not). Note that some replies were 'inconclusive' so these have an additional (?). This 'inconclusive' typically means that I received a question if I knew a way to get into service mode of the indicated model (I don't, otherwise I would have mentioned it on this page). Assuming they have tried the service code mentioned on this page, this means that the model does not accept the service code ...

Acceptance of the code depends on the software version. Software versions MG31E11.6-02291 (and probably earlier versions) are likely **not** to accept the code. Software version MG31E11.8_02581 dated 26 September, 2000 (and probably later versions) are likely to accept the code (no matter what kind of model).

For those, unfortunate, people who's television does not accept the code you might have a look on the [TV: Miscellaneous](#) page for some possible alternatives or the [TV: Service Mode \(remote control codes\)](#) page.

Model:	Works:	Comments/Reported by:
27TP2785	Partially	Bruce
32PW5407	Yes	Ole Endre (menu's simular to PW6006)
21PT5507	Yes	CL
24PW6006 28PW6006	Yes	John Jennings (different menu structure, see TV: Miscellaneous)
28PW6305	Yes	Christoph
32PW6315	Yes	Reported on a forum
28PW6322	No	Denis Cornet (see above)
32PW6324	No	Marcus Berglund
29PT6361	No (?)	Withawat Seailk
28PW6515	Yes	Andy C. Mats Carlsson Slightly different menu structure (see his settings table above).
32PW6516	Yes	Walter Bergers (software version A10EP1-2.0).
28PW6615	No	Iain Hill
28PT7156	Yes	Andreas Rosin (software version EM2E_11.6_02521).
28PW858A	Yes	Klaus Use [OSD] button

32PW8106	No	Michael Piller (software version EM2E_11.C_03771 dated June 10, 2002).
32PW8206	Yes	Martin Fesch The 'Normal geometry' menu has no "Vertical shift' and 'Vertical amplitude' . The 'Superwide geometry' menu has no 'Vertical alignment'.
28PW8206	Yes	Andreas Urner (software version EM2E_11.6_02521 dated August 21, 2000).
25PT8304	Yes (partial)	Rolf Müller You have to press the sequence fast (software version MG21E13.5_02591 dated September 25, 2000). Only main service menu, no convergence possible.
32PW8406	Yes	Serkan Mavus Slightly different menu structure
34PT8420	Yes	Angelo R. Gonzales EM1E chassis Different menu's and no Customer service menu
32PW8504	No	Luca Trbalzini
32PW8506	Yes	Urban M.
29PT8507	Yes	Thomas von Eckern
34PW8520	Yes	Randall Grice Use 062596+status on the remote.
32PW8707	Yes	John Arnstrom (EM2E chassis)
	Yes	Ilja Keseberg (EM2E chassis) (code '0162596', software version EM2E11.C_03771 dated June 10, 2002)
28PW8806	Yes	Henk Bokhoven (code '0362596')
32PW8806	Yes	Italo Tettoni
32PW8807	Yes	Markku Vento (code '0862596', software version EM3E11.3_03431 dated September 13, 2001)
29PT9006	Yes	Michael Kirsch
	Yes	Evaldas Urbonas (software version MG 21 E...)

29PT9007	Yes	Gerrit van Someren No vertical geometry settings possible (settings must be done by means of two potmeters on the chassis)
32PW9308	Yes	Pete Beniston
32PW9503	No	Thomas Engelhardt
28PW9505	No	Ricardo d'Aguiar (software version MG21E13.0_01991) Customer menu and demo menu are available
32PW9515	No	Petri Hietanen (software version MG21E13.2_02171)
28/32/36 PW9525	Yes No	Hessel Verschoor Armin Gawatz (software version MG31E11.6_02291)
36PW9527	Yes	Vaughn de Vocht Jan Cardon Menu's have more options. Test pattern is disabled.
32PW9534	No (?)	Carlo
32PW9544	Yes	Roman Vogel
32PW9545 /05	Yes	Mark Pickstone (software version MG21E13.5_02591, see also the settings overview for his settings)
36PW9607 /5	Yes	Robert Mullan (software version MG32E11.3_03981, dated June 5, 2002)
28PW9615	No (?)	J. Keutgen
32PW9616	Yes	Bart Kruger
28PW9617	Yes	Bart van den Boogaard (software version MG32E11.2_03611, dated January 31, 2002)
32PW9617	Yes	Gregor Pigula MG3.2 chassis
36PW9617	Yes	Marc Goldman

28PW9623	No	Jose Barullodos (software version 3104 3017 01360) Using the special remote control sequence allows accessing the service mode (see TV: Service Mode (remote control codes) page).
32PW9673	No	Gregor Pigula
32PW9723	No	Eddy Talbot (software version 3104 317 01240)
28PW9763	No (?)	Rob Verwimp
32PW9767	Yes	Markus Möller
32PW9765	Yes	Pascal Bulsing (software version _2581)
34PW9815	Yes	Eric Le Taub

Software versions

It is possible to upgrade/replace the software of the TV. The software is situated in an EPROM which can easily be replaced (it is placed into a socket). For the MG3.1/7.1E this is a 27V160 EPROM (2 Mbx8/1 Mbx16/3.3V). In the list below you see an overview of the different software versions and some remarks about them (needed jumpers and such). For those interested in programming their own EPROM a binary dump of the 2581 software can be requested. Just send me an email with your request. The zipped binary contents you will receive are about 700 kb. Note that you are on your 'own' when replacing the software; take a note of all your settings (if possible). You most likely have to set the option bytes correctly after replacement (see the [Service alignment mode](#) concerning these option bytes). There is also software available for the MG3.2/8E, which is version 4.04 from October 18, 2002 (MG32E11.4_04201), provided by Tim Swales. Just send me an email with your request. The zipped binary contents you will receive are about 700 kb.

MG2.1 with Software (CL1 family)	MG2.1 with Software (CL2A family)	MG2.1 with Software (CL1+2A family)	MG3.1 with Software	MG3.2 with Software (Pixel Plus)	MG7.1 with Software
01471	01821	01991	01981	03341	02161
01501	01851	02091	02031	03541	02291
01561	01871	02171	02041	03611	02581
01571	01931	02311 * 1	02081	03981	02811
01611	01961	02591 * 1	02141	04201	02851
01861	02181		02161		
01941	02411		02291 * 2 * 3		
02191			02581 * 2 * 3-> This version accepts service code 062596		
02401			02811 * 2 * 3		
			02851 * 2 * 3		
			03501		

Remarks

*1

Using this software (or a higher version) requires setting Option Byte 8 (2nd line, last byte) from 00000 into 0000x (see table).

Table	
29PT9005	00001
29PT9015	00001
29PT9055	00001
28/32PW9505	00001
28/32PW9515	00001
28/32PW9535	00001
28/32PW9545	00001
32PW9523/12M	00002
32PW9534/12M	00002
32PW9544/12M	00002

If you want to know how to do this, then have a look at the [Service alignment mode](#) page (SW4 byte).

*2

This MG3.1 software is not 100% backwards compatible with older versions. It replaces:

- 1981
- 2031
- 2041
- 2081
- 2141
- 2161

Using the new software requires removing of jumper 4400 and 4401, and making jumper 4402 and 4403.

From software 2161 onwards these jumpers are factory set.

*3

This new software is not compatible with old versions MG31E11.2_02041, MG31E11.3_02081 and MG31E11.4_02141.

This is why, when one replaces these old softwares by the new one, it is necessary to unsolder straps 4400 and 4401, and to assemble them in position 4402 and 4403.

In this way, the FBX is connected to fast bus I2C, which is essential for this software.

Using this software (or a higher version) requires setting Option Byte 8 (2nd line, last byte) from 00000 into 0000x (see table).

Table	
29PT9415	00001

29PT9416	00003
28/32PW9615	00001
28/32PW9525	00003
36PW9525	00004
36PW9765	00004

If you want to know how to do this, then have a look at the [Service alignment mode](#) page (SW4 byte).