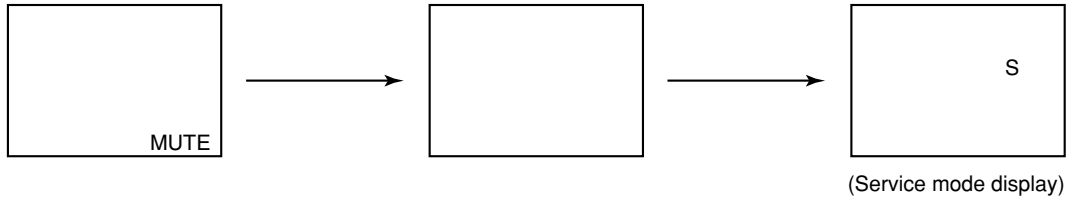# SERVICE MODE

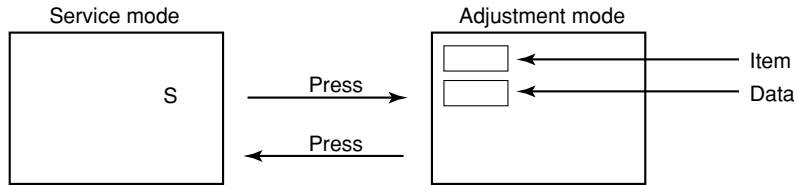## 1. ENTERING TO SERVICE MODE

1) Press MUTE button once
on Remote Control.

MUTE

2) Press MUTE button
again to keep pressing.

3) While pressing the MUTE button,
press MENU button on TV set.

S

(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.

Service mode

S

Adjustment mode

Press →

← Press

Item

Data

3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

A single horizontal line ON/OFF: TV (ANT)/VIDEO button (on TV)
Test signal selection :   TV (ANT)/VIDEO button (on Remote)
Selection of the adjustment items :   Channel ▲/▼ (on TV or Remote)
Change of the data value :   Volume ▲/▼ (on TV or Remote)
Adjustment menu mode ON/OFF :   MENU button (on TV)
Initialization of the memory (QA02) :   RECALL+Channel button on TV (▲)
Initialization of the self diagnostic data: RECALL+Channel button on TV (▼)

"RCUT" selection :   1 button
"GCUT" selection :   2 button
"BCUT" selection :   3 button
"SCNT" selection :   4 button
"COLC" selection :   5 button
"TNTC" selection :   6 button
Self diagnostic display ON/OFF :   9 button

4. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2.
(▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 13)

5. ADJUSTING THE DATA

1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

6. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

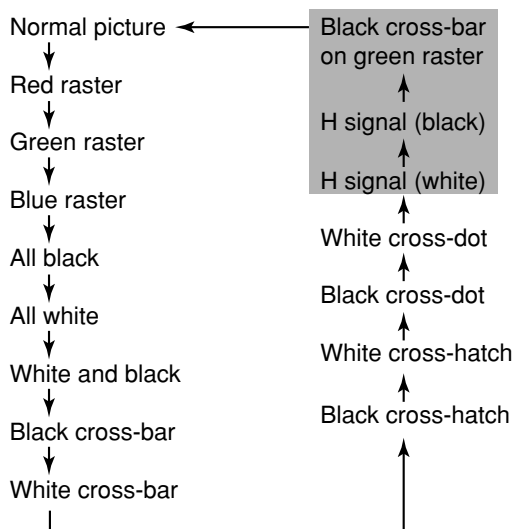## ■ INITIALIZATION OF MEMORY DATA OF QA02

After replacing QA02, the following initialization is required.
1. Enter the service mode, then select any register item.
2. Press and hold the RECALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been complated.
3. Check the picture carefully. If necessary, adjust any adjustment item above.
Perform "Programming Channel Memory" on the owner's manual.
CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

7. TEST SIGNAL SELECTION

1) Every pressing of TV/VIDEO button on the Remote Control in the Service mode, changes the built-in test patterns on screen in the following order.
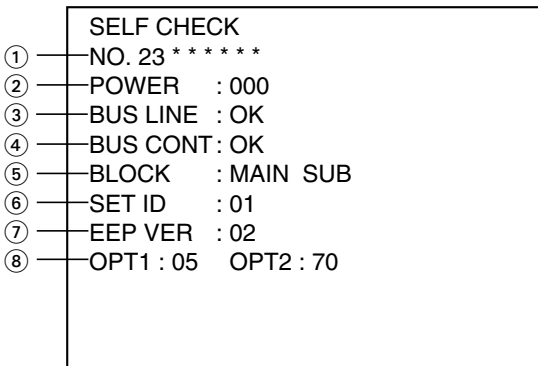
Normal picture ← Black cross-bar on green raster
↓ ↑
Red raster H signal (black)
↓ ↑
Green raster H signal (white)
↓ ↑
Blue raster White cross-dot
↓ ↑
All black Black cross-dot
↓ ↑
All white White cross-hatch
↓ ↑
White and black Black cross-hatch
↓ ↑
Black cross-bar
↓
White cross-bar

Note: If the video cable is connected to the VIDEO1 INPUT jack, the built-in pattern signals are not displayed.

Signals	Picture
• Red raster • Green raster • Blue raster • All Black • All White	
• Black & White	
• Black cross-bar • White cross-bar • Black cross-bar on green raster	
• Black cross-hatch • White cross-hatch	
• Black cross-dot • White cross-dot	
• H signal (white) • H signal (black)	

* The signals marked with ▨ are not usable to display in the Test signal for some model.

8. SELF DIAGNOSTIC FUNCTION

1) Press "9" button on Remote Control during display of adjustment menu in the service mode.
   The diagnosis will begin to check if interface among IC's are executed properly.
2) During diagnosis, the following displays are shown.

```
        SELF CHECK
①  ─── NO. 23 * * * * * *
②  ─── POWER    : 000
③  ─── BUS LINE  : OK
④  ─── BUS CONT : OK
⑤  ─── BLOCK     : MAIN  SUB
⑥  ─── SET ID     : 01
⑦  ─── EEP VER   : 02
⑧  ─── OPT1 : 05   OPT2 : 70
```

① Part number of microprocessor (QA01)
② Operation number of protection circuit (current limiter) . . . . "000" is normal.
③ BUS line check ─── "OK" .... Normal
                       "NG" .... SCL-GND
                                                or SAD-GND short circuit
④ BUS line ACK (acknowledge) check
                       "OK" .... Normal
                       Display of Location Number . . . . NG
                       (Display example)
                       "QA02 NG", "H001 NG", "Q501 NG" etc.
                       Note: The indication of failure place is only one place though failure places are plural. When
                             repair of a failure place finishes, the next failure place is indicated. (The order of priority of
                             indication is left side.)
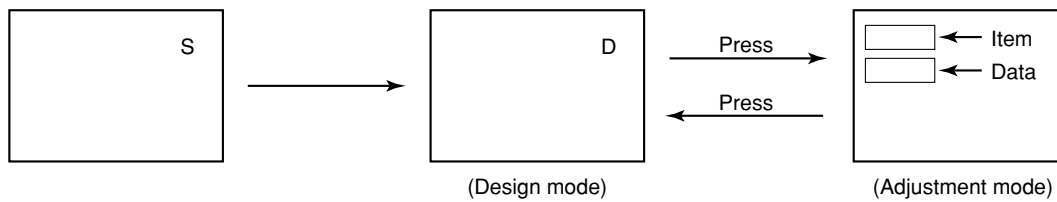⑤ Sync. signal check ─── Green display ..... Normal
                           Cyan display ...... No check
                           Red display .... NG

⑥ SET ID   : 01 ← SET ID
⑦ EEP VER   : 02 ← E2P version
⑧ OPT1 : 05 OPT2 : 70 ← OPT DATA

 * The item marked with ▉ are not usable to display in the SELF DIAGNOSTIC FUNCTION for some model.

DESIGN MODE

1. ENTERING TO DESIGN MODE

    1) Select the Service mode.   2) While pressing RECALL button on   3) Press MENU button on TV.
                                      Remote and press MENU button on TV.

(Design mode)   (Adjustment mode)

When QA02 is initialized, items "OPT0" and "OPT1" and "OPT2" of DESIGN MODE are set to the data of the representative model of this chassis family.

Therefore, because ON-SCREEN specification remains in the state of the representative of model. This model is required to reset the data of items "OPT0" and "OPT1" and "OPT2".

2. SELECTING THE ADJUSTING ITEMS

Every pressing of CHANNEL ▼ button in the design mode changes the adjustment items in the order of table-3.
(▲ button for reverse order)

Refer to table-3 for data of design mode.
(See SETTING & ADJUSTING DATA on page 13)

3. ADJUSTING THE DATA

Pressing of VOLUME ▲ or ▼ button will change the value of data.

SETTING & ADJUSTING DATA

【 SAFETY INSTRUCTIONS 】

		32"
HIGH VOLTAGE AT ZERO BEAM:	(A)	32.7kV
MAX HIGH VOLTAGE:	(B)	34.1kV

Table-1

【 SERVICE MODE 】

ADJUSTING ITEMS AND DATAS IN THE SERVICE MODE:

Item	Name of adjustment	Preset	Data	Item	Name of adjustment	Preset	Data
RCUT	R CUTOFF	40H	←	HIT	HEIGHT	20H	←
GCUT	G CUTOFF	40H	←	LIN	V-LINEARITY	08H	08H
BCUT	B CUTOFF	40H	←	VSC	V-S CORRECTION	04H	04H
GDRV	G DRIVE	40H	←	VPS	V-SHIFT	01H	←
BDRV	B DRIVE	40H	←	VCP	V-COMPENSATION	03H	←
SCNT	SUB-CONTRAST	0AH	←	WID	PICTURE WIDTH	17H	17H
BRTC	SUB-BRIGHT	40H	←	DPC	E-W PARABOLA (DPC)	0CH	0CH
COLC	SUB-COLOR	3AH	←	CNR	E-W CORNER	02H	02H
TNTC	SUB-TINT	44H	←	TRAP	TRAPEZIUM	06H	06H
SAVC	SAP VCO	20H	←	HCP	H-COMPENSATION	00H	←
ATT	ATTENUATOR	20H	←	VFC	V-F CORRECTION	0FH	←
STVC	STEREO VCO	20H	←	PCOL	PIP COLOR	0FH	←
STRF	STEREO FILTER	20H	←	PHUE	PIP TINT	11H	←
SPEC	SPECTRAL	20H	←	PGOF	PIP	36H	←
WBAN	STEREO SEPARATION	20H	←	PROF	PIP	17H	←
HPOS	HORIZ. POSITION	16H	←	PBOF	PIP	17H	←
VPOS	VERT. POSITION	03H	←	RGBB	RGB BRIGHT	0BH	←

Table-2

【 DESIGN MODE 】

ADJUSTING ITEMS AND DATAS IN THE DESIGN MODE:

Item	Name of adjustment	Preset Data	Data	Remarks
OPT1	OPTION1	84H	84H	
OPT2	OPTION2	01H	01H	

Table-3

【 CIRCUIT CHECKS 】

		32"
FAIL SAFE DET. VOLTAGE	(C)	22.35 V

Table-4