



# AV RECEIVERS

- Diagnostic Mode
- DSP Board removal





# Diagnostic Mode

RX-V757/DSP-A X757/DSP-A X757SE  
RX-V657/HTR-5660

## ■ SELF DIAGNOSIS FUNCTION (DIAG).....

This product has a built-in self diagnosis function (DIAG) to facilitate inspection, measurement and determination of a faulty item, if any. There are 20 DIAG menu items, each having sub-menu items.

No.	DIAG menu	Sub-menu
1	BYPASS	1. ANALOG BYPASS 2. DSP BYPASS
2	RAM THROUGH	1. RAM MARGIN 2. RAM FULL BIT
3	PRO LOGIC	1. PRO LOGIC
4	SPEAKERS SET	1. FRNT : SML OdB 2. CENTER : NONE 3. LFE/B : FRNT 4. Pres Mix : Sch 5. Front GAIN 1 6. Front GAIN 2 7. Zone 2 Amp ON
5	XCH INPUT	1. XCH INPUT_S 2. XCH INPUT_B
6	MIC CHECK	1. MIC CHIK
7	VFD CHECK	1. VFD CHECK (initial display / ** * * * * 2. VFD OFF/OSD OFF 3. VFD ALL/OSD 128 character pattern 4. VFD DIMMER/OSD OFF 5. VFD PATTERN/OSD OFF
8	MANUAL TEST	1. TEST ALL 2. TEST FRNT L 3. TEST CENTER 4. TEST FRNT R 5. TEST SURR R 6. TEST SB R 7. TEST SB L 8. TEST SURR L 9. TEST PRES L 10. TEST PRES R 11. TEST LFE
9	FACTORY PRESET	1. PRESET INHI (memory initialization inhibited) / ** * * * * 2. PRESET RSRV (memory initialized) / ** * * * *
10	AD DATA CHECK	1. DC/PS (protection) 2. THM 3. IMP SW/POWER LIMIT 4. PANEL KEY
11	V CONV STATUS	1. LOW BYTE 2. HIGH BYTE
12	XM STATUS	1. XM81 (No applied to these models) / ** * * * * 2. XM82 (No applied to these models) / ** * * * *
13	IF STATUS	1. DST : 2. DMD : 3. DIF : 4. PC : 5. CS1 : 6. CS2 : 7. DEI :

- Please note all our AV receivers, cinema stations almost all our products have a diagnostic mode. It is imperative that we always use it. It is a clever tool that can assist us to quickly diagnose the fault of a unit.



# Diagnostic Mode

RX-V757/DSP-A X757/DSP-A X757SE  
RX-V657/HTR-5880

## ● Starting DIAG

Press the "STANDBY/ON" key of the main unit while simultaneously pressing the "INPUT MODE" key and the "MULTI CH INPUT" key to activate the DIAG function.



Turn on the power while pressing these keys.

## ● Starting DIAG in the protection cancel mode

If the protection function works and causing hindrance to trouble diagnosis, cancel the protection function as described below and it will be possible to enter the DIAG mode. (The protection functions other than the excess current detect function will be disabled.)

Press the "STANDBY/ON" key while simultaneously pressing those two keys indicated in the figure above. At this time, keep pressing those two keys for 3 seconds or longer.

In this mode, the "SLEEP" segment of the FL display of the main unit flashes to indicate that the mode is DIAG mode with the protection functions disabled.

### CAUTION!

Using this product with the protection function disabled may cause damage to itself. Use special care for this point when using this mode.

## ● Canceling DIAG

1 Before canceling DIAG, execute setting for PRESET of DIAG menu No.9 (Memory Initialization Inhibited or Memory Initialized).

\* In order to keep the user memory stored, be sure to select PRESET INHIBITED (Memory Initialization Inhibited). Protection history will remain in memory.

2 Turn off the power by pressing the "STANDBY/ON" key of the main unit.

- Each series of receivers may have a different sequence of buttons to press to execute the diagnostic mode.



# Diagnostic Mode

RX-V757/DSP-AX757/DSP-AX757SE  
RX-V657/HTR-5860

● **Display provided when DIAG started**

When the monitor is connected, DIAGNOSTIC MENU appears on its screen as shown in the figure.

On the FL display of the main unit, an opening message (including the version and the protection history) appears for a few seconds followed by the diagnostic menu display (1. ANALOG BYPASS).

1. PROTECT	11. I/F STATUS
2. PRO TMR	12. I/F STATUS
3. PRO LOGIC	13. I/F STATUS
4. SP SET	14. DSP BUS
5. INCH INPUT	15. SMPR C. OFF
6. MIC CHECK	16. PRT SET
7. VFC CHECK	17. PRT HIST.
8. INCH LTEST	18. SOFT SW
9. PRESET	19. VBR/SUR/P
10. FC CHECK	20. TI BOOT

When there is no history of protection function:

When there is no protection history

NO PROTECT Z

 → 

1. ANALOG BYPASS

Version (1 alphabet)

When there is a history of protection function:

The FL display appears as shown below depending on the type of the protection function.

The protection function worked due to excessive current through the amplifier. Causes could be a short at the speaker terminal or a defect in the amplifier. The protection function activates immediately to turn off the power, with no history display at turn-on, if the amplifier is defective.

I PROTECT Z

- Please note that DM mode has many different steps to assist us with many different fault conditions.



# Diagnostic Mode

RX-V767/DSP-A X767/DSP-A X767SE  
RX-V667/HTR-6660

The protection function worked due to a defect or overload in the power supply. If the power is turned on with the abnormality unsolved, the protection function works in about 1 second to turn off the power.

PS PRT : 000 Z

The protection function worked due to a DC voltage appearing at the speaker terminal. A cause could be a defect in the amplifier. If the power is turned on with the abnormality unsolved, the protection function works in about 3 seconds to turn off the power.

DC PRT : 000 Z

The protection function worked due to the temperature limit being exceeded. Causes could be poor ventilation or a defect related to the thermal sensor. If the power is turned on with the abnormality unsolved, the protection function works in about 1 second to turn off the power.

TMP PRT : 000 Z

For detection of each protection function (except I-PROTECT), refer to DIAG MENU No.10 AD DATA (p.42).

## History of protection function

When the protection function has worked, its history is stored in memory with a backup. Even if no abnormality is noted while servicing the unit, an abnormality which has occurred previously can be defined as long as the backup data has been stored.

The history of the protection function is cleared when DIAG is cancelled by selecting PRESET RESERVED (Memory initialized) of DIAG menu No.9 or when the backup data is erased.

## Display during menu operation

During the DIAG operation, the menu list described in the section of the startup screen appears on the monitor screen and the function at work is indicated on the FL indicator. The contents displayed during the function operation are described later in the "Details of DIAG menu" section.

- Please note there are four different protection circuits active in our AV receivers.

Eg. DC Protect  
I Protect  
TMP Protect  
PS Protect




# Diagnostic Mode


RX-V757/DSP-AX757/DSP-AX757SE  
RX-V657/HTR-5860

● **Operation procedure of DIAG MENU and SUB-MENU**  
There are 20 MENU items, each of which has some SUB-MENU items.

**DIAG menu selection**  
Select the menu using PROGRAM knob.

**SUB-MENU selection**  
Select the sub-menu using  $\rightarrow$  (Forward) and  $\leftarrow$  (Reverse) keys of PRESET/TUNING (LEVEL).

**DIAG menu selection**  


**SUB-MENU selection**  


● **Functions in DIAG mode**  
In addition to the DIAG menu items, functions as listed below are available.

- Input selection, Multi channel input
- Center/Surround/Surround Back/Sub-woofer level adjustment
- Muting
- Speaker relay A/B
- Power on/off
- Master volume

\* Functions related to the tuner and the set menu are not available.

\* It is possible to confirm Menu No.13 IF STATUS while keeping the signal process (operation status) of each DIAG menu by using the Input mode key of the main unit.

● **Initial settings used to start DIAG**  
The following initial settings are used when starting DIAG. When DIAG is canceled, these settings are restored to those before starting DIAG.

- Master volume: -20dB
- Input: DVD (MULTI CHANNEL INPUT OFF)
- Effect level: 0dB
- Audio mute: OFF
- Speaker relay A/B: ON
- Speaker setting: LARGE / BASS OUT = SWFR
- DIAG menu: BYPASS (1. ANALOG BYPASS)

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- Please observe the keys required to navigate through the diagnostic mode, this may vary from model to model.



# Diagnostic Mode

RX-V757/DSP-AX757/DSP-AX757SE  
RX-V657/HTR-5860

**9. FACTORY PRESET**  
This menu is used to reserve/inhibit initialization of the back-up RAM (Parameters and set menu contents, etc. of the sound field program).

**9. PRESET INHI**  
PRESET INHIBIT (Initialization inhibited) / .....  
RAM initialization is not executed. Select this sub-menu to protect the values set by the user.  
*Note: The protection history will not be erased using PRESET INHIBIT.*

**9. PRESET RSRV**  
PRESET RESERVED (Initialization reserved) / .....  
Initialization of the back-up RAM is reserved. (Actually, initialization is executed the next time that the power is turned on.) Select this sub-menu to reset to the original factory settings or to reset the RAM. Use PRESET RESERVED to erase the protection history.

**CAUTION:** Before setting to the PRESET RESERVED, write down the existing preset memory content of the Tuner in a table as shown below. (This is because setting to the PRESET RESERVED will cause ALL user memory contents to be erased.)

Preset group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

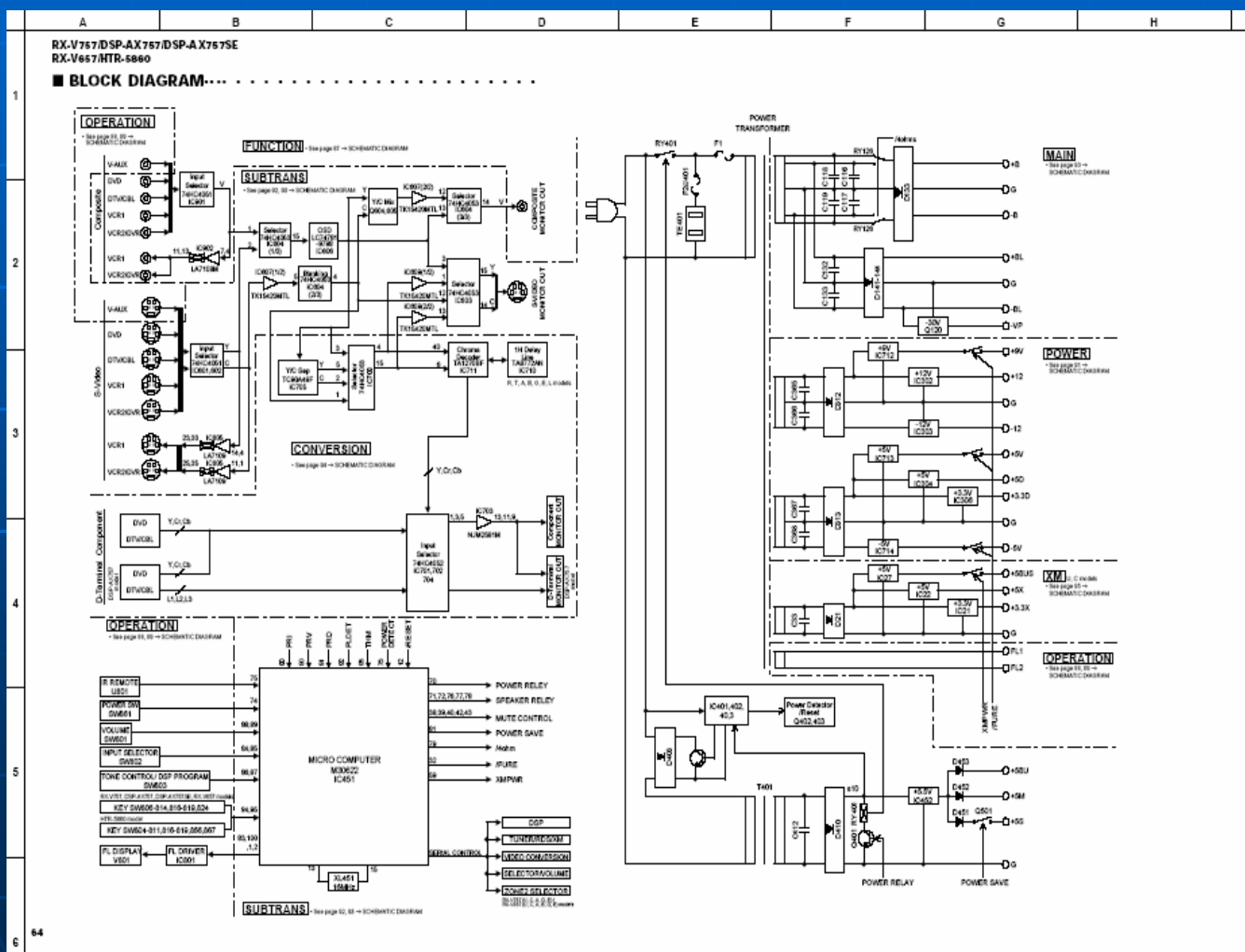
● PRESET STATIONS / .....

FM FACTORY PRESET DATA (MHz)					AM FACTORY PRESET DATA (kHz)				
PAGE	NO.	U. C.	R. T. K. A. B. G. L. J.		PAGE	NO.	U. C. R. T. K.	A. B. G. L. J.	
A/C/E	1	87.5	87.50	76.0	B/D	1	830	830	
	2	90.1	90.10	83.0		2	1080	1080	
	3	95.1	95.10	84.0		3	1440	1440	
	4	98.1	98.10	86.0		4	830	831	
	5	107.5	106.00	90.0		5	1710	1611	
	6	88.1	88.10	78.0		6	820	800	
	7	106.1	106.10	86.0		7	1350	1350	
	8	107.5	106.00	82.1		8	1420	1404	

- This function is a must when you have an AV receiver to repair, please complete this function (factory reset) it will reset the unit and place the unit into factory default mode. By the way once you have done this it clear all the previous history and settings in the unit.



# Block diagram



- Please note on this block diagram the four different protection lines going to the Microcomputer. With intermittent faults it is always beneficial to know the resources you have to assist you in diagnosing more accurately.





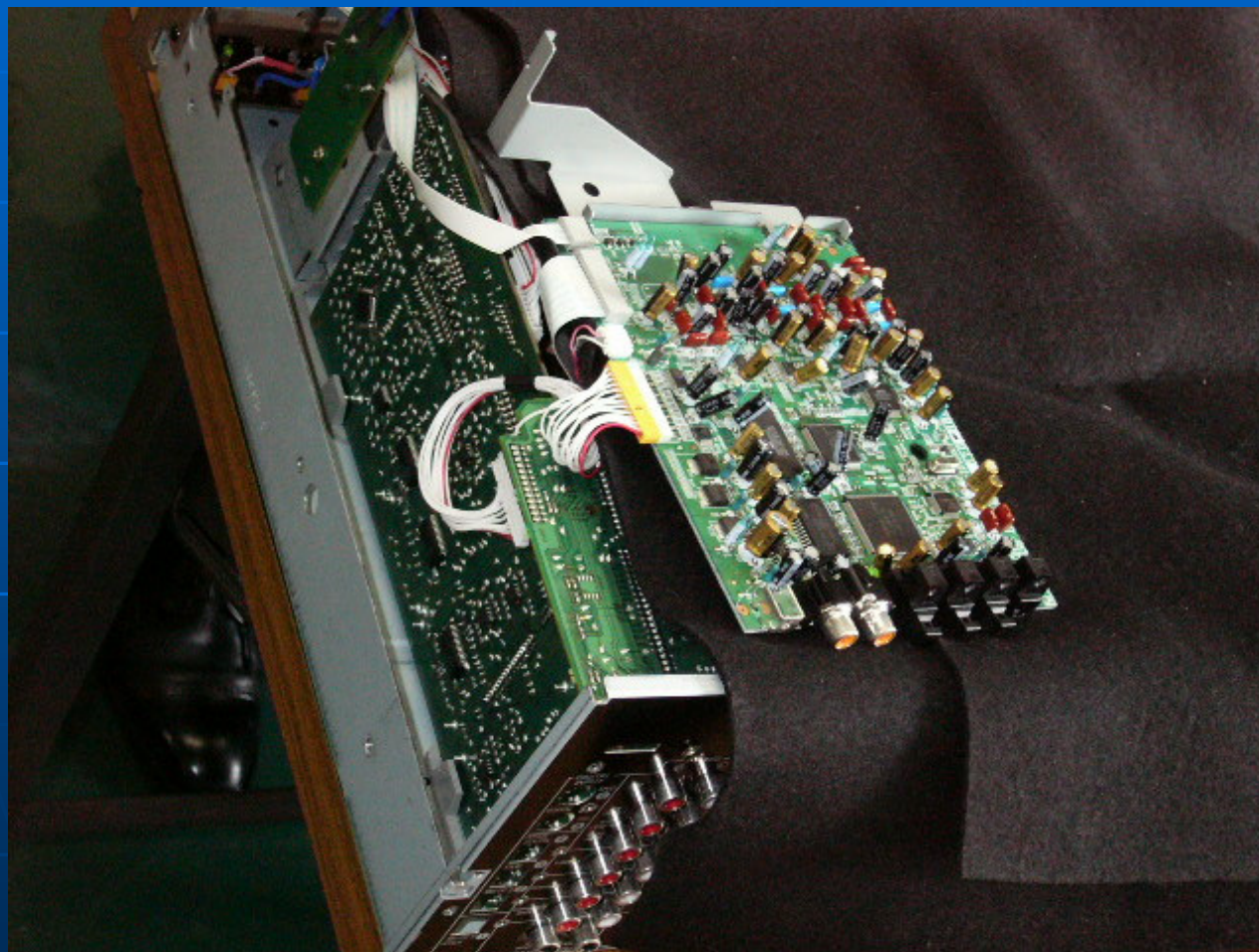
# RXV650/750 service tips



- We can remove the dsp board completely from the assembly using an extension cable V4539100.



# DSP Board removed



- Now the board is more accessible for diagnosis.



THANKYOU