

# JVC

## SERVICE MANUAL

### COLOUR TELEVISION

BASIC CHASSIS

CM-F

# AV-21PS(AU)

This service manual mainly consists of the following items:

- The items which differ from those for the AV-21PS service manual.
- The initial value for each setting item.

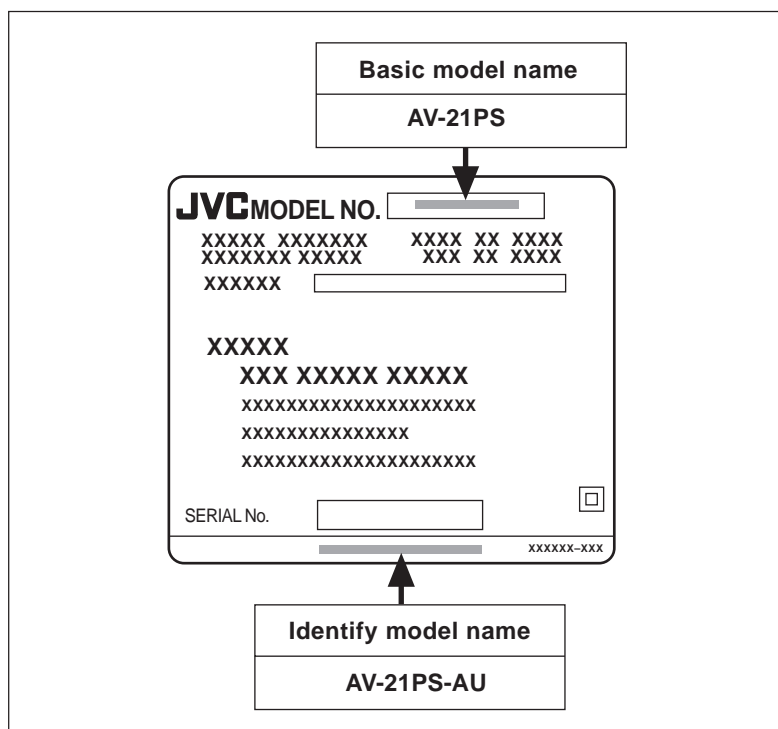
For details other than those described in this manual, please refer to the following service manual.

Reference Service Manual: AV-21PS Service Manual (No. 56018, Jun. 2000)

**Note:** The page in parentheses shows the one for the AV-21PS service manual (No. 56018, Jun. 2000).


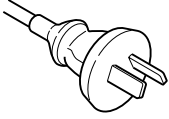
## HOW TO IDENTIFY MODEL

While referring to the illustration given below, identify model name on the rating label affixed to the rear cover.



# PARTS DIFFERENCE TABLE

The different parts between AV-21PS and AV-21PS(AU) are described below:

△	REF. NO.	AV-21PS	AV-21PS(AU)	PART NAME	DESCRIPTION
		PART No.	PART No.		
<b>■ EXPLODED VIEW PARTS LIST (Page 32)</b>					
△	L01	QQW0067-001	QQW0058-001	DEG COIL	
	9	LC40317-001A	LC40317-002A-H	TAPPING SCREW	(×4)
△	13	QMP40D0-200J5 or QMP40D0-200J3 	QMP2980-185J5 	POWER CORD	
△	18	LC20377-001B-H	LC20377-013B-H	RATING LABEL	
<b>■ PRINTED WIRING BOARD PARTS LIST (Page 34-)</b>					
	—	SCM-1612A-H2	SCM-1615A-H2	MAIN PWB ASSY	
	R1319	QRE141J-333Y	—	C R	33kΩ 1/4W J
	R1757	QRE141J-102Y	—	C R	1kΩ 1/4W J
	R1801	QRE141J-471Y	—	C R	470Ω 1/4W J
	R1802	QRE141J-392Y	—	C R	3.9kΩ 1/4W J
	R1803	QRE141J-561Y	—	C R	560Ω 1/4W J
	R1805	QRE141J-102Y	—	C R	1kΩ 1/4W J
	R1806	QRE141J-152Y	—	C R	1.5kΩ 1/4W J
	R1807	QRE141J-333Y	—	C R	33kΩ 1/4W J
	R1808	QRE141J-182Y	—	C R	1.8kΩ 1/4W J
	R1809	QRE141J-181Y	—	C R	180Ω 1/4W J
	R1810	QRE141J-182Y	—	C R	1.8kΩ 1/4W J
	R1811	QRE141J-181Y	—	C R	180Ω 1/4W J
	R1812	QRE141J-182Y	—	C R	1.8kΩ 1/4W J
	R1813	QRE141J-181Y	—	C R	180Ω 1/4W J
	R1814	QRE141J-122Y	—	C R	1.2kΩ 1/4W J
	R1815	QRE141J-561Y	—	C R	560Ω 1/4W J
	R1816	QRE141J-152Y	—	C R	1.5kΩ 1/4W J
	R1817	QRE141J-152Y	—	C R	1.5kΩ 1/4W J
	C1313	QETN1HM-105Z	—	E CAP.	1μF 50V M
		—	QFLC1HJ-103Z	M CAP.	0.01μF 50V J
	C1314	QETN1HM-105Z	—	E CAP.	1μF 50V M
		—	QFLC1HJ-103Z	M CAP.	0.01μF 50V J
	C1315	QETN1HM-105Z	—	E CAP.	1μF 50V M
		—	QFLC1HJ-103Z	M CAP.	0.01μF 50V J

▲	REF. NO.	AV-21PS	AV-21PS(AU)	PART NAME	DESCRIPTION
		PART No.	PART No.		
<b>■ PRINTED WIRING BOARD PARTS LIST-Continued (Page 34-)</b>					
	C1317	QCS31HJ-470Z	———	C CAP.	47pF 50V J
	C1801	QETN1EM-476Z	———	E CAP.	47μF 25V M
	C1802	QCS31HJ-331Z	———	C CAP.	330pF 50V J
	C1803	QFLC1HJ-223Z	———	M CAP.	0.022μF 50V J
	C1804	QCS31HJ-221Z	———	C CAP.	220pF 50V J
	C1805	QDC31HJ-150Z	———	C CAP.	15pF 50V J
	C1806	QDC31HJ-150Z	———	C CAP.	15pF 50V J
	C1807	QETN1AM-107Z	———	E CAP.	100μF 10V M
	C1808	QCB31HK-102Z	———	C CAP.	1000pF 50V K
	C1809	QCS31HJ-221Z	———	C CAP.	220pF 50V J
	C1810	QETN1AM-107Z	———	E CAP.	100μF 10V M
	C1811	QCB31HK-103Z	———	C CAP.	0.01μF 50V K
	C1812	QFV71HJ-104Z	———	TF CAP.	0.1μF 50V J
	C1813	QCB31HK-103Z	———	C CAP.	0.01μF 50V K
	C1814	QETN1HM-226Z	———	E CAP.	22μF 50V M
	C1815	QFV71HJ-104Z	———	TF CAP.	0.1μF 50V J
	C1816	QCB31HK-103Z	———	C CAP.	0.01μF 50V K
	C1817	QFLC1HJ-103Z	———	M CAP.	0.01μF 50V J
	C1818	QCB31HK-103Z	———	C CAP.	0.01μF 50V K
	C1820	QFV71HJ-104Z	———	TF CAP.	0.1μF 50V J
	Q1801	2SC1740S/QR/-T	———	SI TRANSISTOR	
	Q1802	2SC1740S/QR/-T	———	SI TRANSISTOR	
	IC1801	ET417	———	IC (DATA SLICER)	
	IC1802	ET211	———	IC (TELETEXT DEC)	
	K1801	CE41433-001Z	———	BEADS CORE	
	K1802	CE41433-001Z	———	BEADS CORE	
	X1801	CE41257-001Z	———	X TAL	
<b>■ PACKING PARTS LIST (Page 44)</b>					
	1	GG10044-006A-H	<b>GG10044-010A-H</b>	PACKING CASE	
	4	RM-C231-1C	<b>RM-C237-1C</b>	REMOCON UNIT	
▲	6	LCT0735-001A-H	<b>LCT0823-001A-H</b>	INST BOOK	
	—	———	<b>BT-56001-2</b>	WARRANTY CARD	
	—	———	<b>BT-56002-2</b>	SERVICE CENTER LIST	

# SPECIFICATIONS (Page 2)

Item		Content
<b>Dimensions (W × H × D)</b>		596mm × 468.5mm × 481.5mm
<b>Mass</b>		25kg
<b>TV RF System</b>		B / G, I, D / K, K1, M
<b>Colour System</b>	TV Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
	VIDEO Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
<b>Stereo System</b>		A2/NICAM (B/G, I, D/K) System
<b>Receiving Frequency</b>	VHF (VL)	46.25MHz ~ 168.25MHz
	VHF (VH)	175.25MHz ~ 463.25MHz
	UHF	471.25MHz ~ 863.25MHz
	CATV	● Cable TVs of Mid (X-Z, S1-S10) Super (S11-S20) & Hyper (S21-S41) bands receivable
<b>Intermediate Frequency</b>	VIF Carrier	38.0MHz
	SIF Carrier	31.5MHz (6.5MHz) 32.0MHz (6.0MHz) 32.5MHz (5.5MHz) 33.5MHz (4.5MHz)
<b>Colour Sub Carrier Frequency</b>		PAL (4.43MHz), SECAM (4.40625MHz / 4.25MHz) NTSC (3.58MHz / 4.43MHz)
<b>Aerial Input Terminal</b>		75Ω Unbalanced
<b>Power Input</b>		AC110 ~ 240V, 50/60Hz
<b>Power Consumption</b>		135W (Max.) / 89W (Avg.)
<b>Picture Tube</b>		Visible size : 51cm measured diagonally
<b>High Voltage</b>		29kV +1/-1.5kV (at zero beam current)
<b>Speaker</b>		5 × 12cm Oval type × 2
<b>Audio Output</b>		5W + 5W
<b>Input (S/Video-1, Video-2 &amp; -3, Audio)</b>	Video	1Vp-p, 75Ω
	S/Video	Y: 1Vp-p Positive (negative sync provided, when terminated with 75Ω) C: 0.286Vp-p (burst signal, when terminated with 75Ω)
	Audio (L/R)	500mVrms (-4dBs), High impedance
<b>Output</b>	Video	1Vp-p, 75Ω
	Audio (L/R)	500mVrms (-4dBs), Low impedance
<b>Headphone Jack</b>		Stereo mini jack (3.5ø)
<b>Remote Control Unit</b>		RM-C237-1C (Battery size : AA/R06/UM-3 × 2)

*Design & specifications are subject to change without notice.*

# SPECIFIC SERVICE INSTRUCTIONS

## SETTING OF SYSTEM CONSTANT SET (Page 7)

Table 1

Setting item	Setting contents	Setting value
1. COLOUR AUTO	<input type="checkbox"/> YES → <input type="checkbox"/> NO	NO
2. COLOUR	<input type="checkbox"/> MULTI. → <input type="checkbox"/> TRIPLE → <input type="checkbox"/> PAL	MULTI
3. ECO SENSOR	<input type="checkbox"/> YES → <input type="checkbox"/> NO	YES
4. BASS	<input type="checkbox"/> YES-BB → <input type="checkbox"/> YES-BB-SB → <input type="checkbox"/> YES-SB <input type="checkbox"/> NO-SB-OFF ← <input type="checkbox"/> NO-SB-ON ← <input type="checkbox"/> YES-BA	NO-SB-ON
5. VOL. LIMITER	<input type="checkbox"/> YES → <input type="checkbox"/> NO	YES
6. TEXT	<input type="checkbox"/> YES → <input type="checkbox"/> NO	NO
7. MSP	<input type="checkbox"/> YES → <input type="checkbox"/> NO → <input type="checkbox"/> NO-A2	YES
8. LANGUAGE	<input type="checkbox"/> E/R/A/F → <input type="checkbox"/> E/A/F → <input type="checkbox"/> E/A → <input type="checkbox"/> E/F	E/R/A/F
9. EW-PIN IC	<input type="checkbox"/> YES → <input type="checkbox"/> NO	YES
10. B/B OFF MUTE	<input type="checkbox"/> ON → <input type="checkbox"/> OFF	OFF
11. LED	<input type="checkbox"/> 2 → <input type="checkbox"/> 3	3
12. D/K NICAM	<input type="checkbox"/> YES → <input type="checkbox"/> NO	YES
13. ALC	<input type="checkbox"/> YES → <input type="checkbox"/> NO	YES
14. BBE	<input type="checkbox"/> YES → <input type="checkbox"/> NO	NO
15. E.M.C.	<input type="checkbox"/> YES → <input type="checkbox"/> NO	NO

## USER SETTING VALUES (Page 7)

Table 2

Setting item	Setting value	Setting item	Setting value
SUB POWER	ON	BASS	CENTER
CHANNEL POSITION	1 POSITION	BALANCE	CENTER
CHANNEL PRESET	Refer to OPERATING INSTRUCTION	LANGUAGE	ENGLISH
VOLUME	Appropriate sound volume	AUTO VNR	OFF
TV/VIDEO	TV	OFF TIMER	OFF
ON SCREEN DISPLAY	POSITION NUMBER DISPLAY	AUTO SHUTOFF	OFF
COLOUR SYSTEM	AUTO PAL	ECO SENSOR	OFF
SOUND SYSTEM	B / G	AI VOLUME	HIGH
BILINGUAL MODE	STEREO	BLUE BACK	OFF
PICTURE MODE (VSM)	BRIGHT	ON TIMER	PR1 0:00
LIVE SPATIAL	OFF	CHILD LOCK	OFF
TREBLE	CENTER		

# SERVICE ADJUSTMENTS

## ■ Initial Setting Value


### ■ IF CIRCUIT ADJUSTMENT -- Adjustment of DELAY POINT (Page 15)

Setting (Adjustment) item	Variable range	Initial setting value
DELAY POINT (AGC TAKE-OVER)	0 ~ 63	19

### ■ V/C (VIDEO/CHROMA) CIRCUIT ADJUSTMENT (Page 15)

[SUB MENU 2. V/C]

Setting item	Colour system	Variable range	Initial setting value			
			PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUT OFF (R / G / B)		-128 ~ +127	0	←	←	←
2. DRIVE (R / B)		-128 ~ +127	0	←	←	←
3. BRIGHT (RF/VIDEO)		-128 ~ +127	0 / 0	+2 / -1	0 / -2	——
4. CONT. (RF/VIDEO)		-42 ~ +42	0 / -6	-7 / -8	-8 / -7	——
5. COLOUR		-60 ~ +68	+11	+3	+15	0
6. TINT (TV / VIDEO)		-64 ~ +63	——	——	+12 / 0	0 / -4
7. BLACK OFFSET (R-Y / B-Y)		-8 ~ +7	——	+4 / +2	——	——
8. SHARP (TV / VIDEO)		-32 ~ +31	-15 / 0	←	-20 / 0	——
9. TEXT (RGB) CONT.		-128 ~ +77	+10	←	←	←
10. B.S.OFF		0 ~ +1	0	←	←	←
11. B.S.POINT		0 ~ +7	+6	←	←	←
12. DC TRAN RATE		0 ~ +7	0	←	←	←
13. APA-CON FO/SW		0 ~ +3	+1	←	←	←
14. VSM PHASE		0 ~ +3	+3	←	←	←
15. VSM GAIN		0 ~ +3	+1	←	←	←
16. CLL SW		0 ~ +1	+1	←	←	←
17. CLL LEVEL		0 ~ +3	+2	←	←	←
18. ABL POINT		0 ~ +7	+5	←	←	←
19. ABL GAIN		0 ~ +7	+1	←	←	←
20. Y-DL (TV / VIDEO / S)		0 ~ +7	+2 / +4 / +2	+3 / +3 / +2	+2 / +2 / +2	+4 / +4 / +2
21. P.ACL SW		0 ~ +1	+1	←	←	←
22. WPL SW		0 ~ +1	0	←	←	←
23. Y GAMMA		0 ~ +1	0	←	←	←

 : Do not adjust.

**Adjustment of SUB COLOUR-II (Page 18)**

Adjustment part	Description
<b>5. COLOUR</b>	
PAL COLOUR	Value (A) in the figure: Set to <b>+4V (W &amp; G)</b> .
SECAM COLOUR	Value (A) in the figure: Set to <b>+3V (W &amp; G)</b> .
NTSC 3.58 COLOUR	Value (A) in the figure: Set to <b>+4V (W &amp; G)</b> .

**Adjustment of SUB TINT-II (Page 19)**

Adjustment part	Description
<b>6. TINT</b>	
NTSC 3.58 TINT	Value (B) in the figure: Set to <b>+3V (W &amp; Cy)</b> .

**■ DEFLECTION CIRCUIT ADJUSTMENT (Page 21)****[SUB MENU 4. DEF]**

Setting item	Adjustment name	Variable range	Initial setting value	
			50Hz	60Hz
1. TRAPEZ	Trapezoidal distortion correction	-32 ~ +31	-15	-3
2. V-SHIFT	Vertical center	-32 ~ +31	-19	+12
3. V-SIZE	Vertical height	-64 ~ +63	+12	0
4. H-CENT	Horizontal center	-16 ~ +15	-6	0
5. H-SIZE	Horizontal width	-64 ~ +63	+6	0
6. EW-PIN	Side pin correction	-64 ~ +63	-10	0
7. V-S. CR	Vertical height correction	-64 ~ +63	0	+2
8. V-EDGE	Vertical edge correction	-64 ~ +63	+3	+2
9. EW-COR	Side pin fore correction	-64 ~ +63	-1	-1
10. V-LINE	Vertical linearity	-16 ~ +15	0	+2
11. H-COMP	Horizontal compensation	0 ~ +15	+3	0

: Do not adjust.

**■ VSM PRESET ADJUSTMENT (Page 25)****[Setting Values for SUB MENU 5. VSM PRESET]**

VSM Setting item	VSM preset mode		
	BRIGHT	STANDARD	SOFT
1. TINT SETTING VALUE	0	←	←
2. COLOUR SETTING VALUE	0	←	←
3. BRIGHT SETTING VALUE	0	←	←
4. CONT. SETTING VALUE	+15	0	-4
5. SHARP SETTING VALUE	0	←	-3

: Do not adjust.

## ■ AUDIO ADJUSTMENT (Page 25)

### [SUB MENU 3. AUDIO]

Setting item	Variable range	Initial setting value (fixed)
1. ERROR LIMIT	00H ~ FFH	100H
2. A2 ID THR	00H ~ FFH	14H
3. SOUND SYSTEM	—	—

: Do not adjust.

## ■ CENTER ADJUSTMENT (Page 25)

### [SUB MENU 6. CENTER]

Setting item	Initial setting value (fixed)
TREBLE (Do not adjust.)	+2
BASS (Do not adjust.)	+3

: Do not adjust.

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