

JVC

SERVICE MANUAL

COLOUR TELEVISION

BASIC CHASSIS

CG

AV-21A4(BK)

This service manual mainly consists of the following items:

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

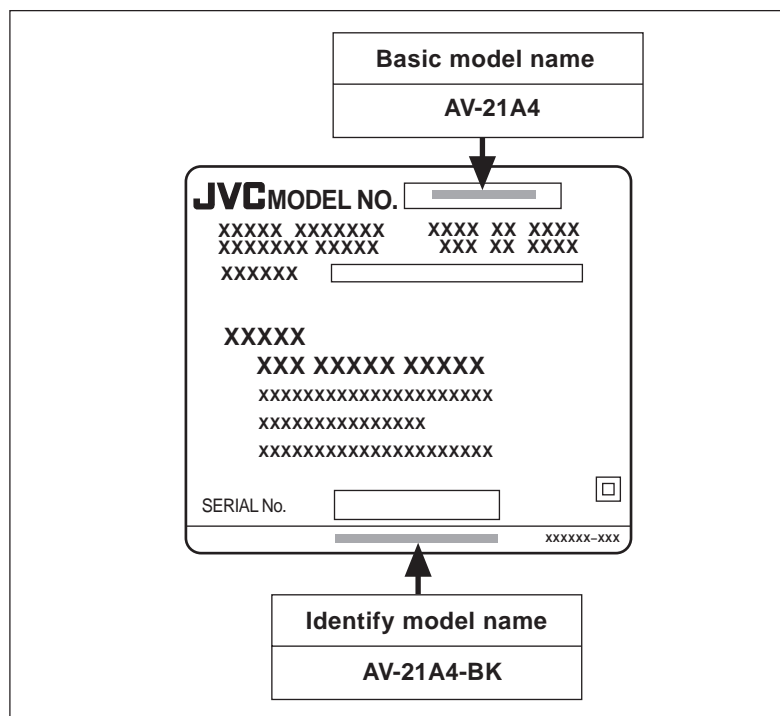
For details other than those described in this manual, please refer to the following service manual.

Reference Service Manual: AV-21AT Service Manual (No. 56013, May 2000)

Note: The page in parentheses shows the one for the AV-21AT service manual (No. 56013, May 2000).


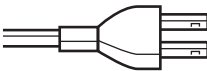
HOW TO IDENTIFY MODEL

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-21AT and AV-21A4(BK) are described below:

△	REF. NO.	AV-21AT	AV-21A4(BK)	PART NAME	DESCRIPTION
		PART No.	PART No.		
■ EXPLODED VIEW PARTS LIST (Page 28)					
△	V01	A51LMV20X	A51LEC065X	PICTURE TUBE	
	DY01	CE20336-00A	CE20332-00A	DEF YOKE	
△	T1522	QQH0069-001	QQH0070-001	H.V. TRANSF.	
	1	GG10047-002A-H	GG10047-005A-H	FRONT CABINET ASSY	
△	15	LC20377-010A-H	CM22960-074-H	RATING LABEL	
△	18	QMP40D0-200J5 or QMP40D0-200J3 	QMPR010-200-E2 or QMPR010-200-K2 	POWER CORD	
■ PRINTED WIRING BOARD PARTS LIST (Page 30)					
	—	SCG-1247A-H2	SCG-1245A-BK	MAIN PWB ASSY	
	R1161	—	NRSA02J-102X	CH MG R	1kΩ 1/10W J
	R1162	—	NRSA02J-122X	CH MG R	1.2kΩ 1/10W J
	R1163	—	NRSA02J-222X	CH MG R	2.2kΩ 1/10W J
	R1164	—	NRSA02J-221X	CH MG R	220Ω 1/10W J
	R1165	—	NRSA02J-220X	CH MG R	22Ω 1/10W J
	R1166	—	NRSA02J-821X	CH MG R	820Ω 1/10W J
	R1771	NRSA02J-821X	—	CH MG R	820Ω 1/10W J
		—	NRSA02J-222X	CH MG R	2.2kΩ 1/10W J
	R1773	—	NRSA02J-122X	CH MG R	1.2kΩ 1/10W J
	C1161	—	NCB21HK-103X	CH C CAP.	0.01μF 50V K
	C1164	—	NCB21HK-103X	CH C CAP.	0.01μF 50V K
	C1165	—	NCB21HK-103X	CH C CAP.	0.01μF 50V K
	C1166	—	NCB21HK-104X	CH C CAP.	0.1μF 50V K
	C1525	QFZ0200-103	—	MPP CAP.	0.01μF 1.5kVH ±3%
		—	QFZ0200-962	MPP CAP.	9600pF 1.5kVH ±3%
	C1527	QFZ0199-224	—	MPP CAP.	0.22μF 250V J
		—	QFZ0199-254	MPP CAP.	0.25μF 250V J
	C1582	QFZ0199-224	—	MPP CAP.	0.22μF 250V J
		—	QFZ0199-274	MPP CAP.	0.27μF 250V J
△	T1522	QQH0069-001	QQH0070-001	H.V. TRANSF.	
	L1551	QQLZ018-430	QQLZ018-540	HEATER CHOKE	
	D1705	L-132XND-T16	—	LED (ORG)	
		—	SLR-342MG-T16	LED (GRE)	

△	REF. NO.	AV-21AT	AV-21A4(BK)	PART NAME	DESCRIPTION
		PART No.	PART No.		
■ PRINTED WIRING BOARD PARTS LIST-Continued (Page 30)					
	Q1161	———	2SC2412K/QR/-X	CHIP TRANSISTOR	
	Q1710	———	DTC124EKA-X	DIGI TRANSISTOR	
	IC1701	MN1873287JA	MN1873287JC	IC (MICROCOMPUTER)	
	IC1702	AT24C08-21FTR	AT24C08-21F4BK	IC (MEMORY)	(Service)
	CF1161	———	SFE5.74MC2	C TRAP	
	CF1162	———	SFE5.74MC2	C TRAP	
	TU1001	QAU0185-001	QAU0186-001	TUNER	
■ PACKING PARTS LIST (Page 34)					
	1	GG10056-017A-H	CP11434-063-H	PACKING CASE	
	5	RM-C364-1H	RM-C368-1H	REMOCON UNIT	
△	7	LCT0748-001A-H	LCT0730-001A-H	INST BOOK	
△	8	LCT0749-001A-H	———	DIGEST MANUAL	
	—	———	ATEAB001-00A	MATCHING BOX	

SPECIFICATIONS (Page 2)

Item		Content
Dimensions (W × H × D)		502mm × 451mm × 480.5mm
Mass		19.5kg
TV RF System		B / G, I, D / K, K1
Colour System	TV Mode	PAL / SECAM
	VIDEO Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
Stereo System		Bilingual in A2
Receiving Frequency	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
Intermediate Frequency	VIF Carrier	38.0MHz
	SIF Carrier	31.5MHz (6.5MHz) 32.0MHz (6.0MHz) 32.5MHz (5.5MHz) 33.5MHz (4.5MHz)
Colour Sub Carrier Frequency		PAL (4.43MHz) SECAM (4.40625MHz / 4.25MHz) NTSC (3.58MHz / 4.43MHz)
Aerial Input Terminal		75Ω Unbalanced
Power Input		Rating: AC110 ~ 240V, 50/60Hz Operating: AC90 ~ 260V, 50/60Hz
Power Consumption		105W (Max.)/68W (Avg.)
Picture Tube		Visible size : 51cm measured diagonally
High Voltage		26.5kV ± 1.5kV (at zero beam current)
Speaker		5cm × 9 cm Oval type × 2
Audio Output		5W (Monaural)
Input	Video	1Vp-p, 75Ω
	Audio	500mVrms (-4dBs), High impedance
Output	Video	1Vp-p, 75Ω
	Audio	500mVrms (-4dBs), Low impedance
Headphone Jack		Stereo mini jack (3.5ø)
Remote Control Unit		RM-C368-1H (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
COLOUR	<input type="checkbox"/> MULTI. <input type="checkbox"/> TRIPLE <input type="checkbox"/> PAL	TRIPLE
BILINGUAL	<input type="checkbox"/> YES <input type="checkbox"/> NO	YES
TUNER	<input type="checkbox"/> MU <input type="checkbox"/> MA	MU
ECO SENSOR	<input type="checkbox"/> YES <input type="checkbox"/> NO	YES
LANGUAGE	<input type="checkbox"/> E/T <input type="checkbox"/> E	E/T
B/B SOUND	<input type="checkbox"/> ON <input type="checkbox"/> OFF	OFF
LOCK	YES ↔ 10 ↔ 20 ↔ ... ↔ 230 250 ↔ 240	180
COLOUR AUTO	<input type="checkbox"/> YES <input type="checkbox"/> NO	NO
QSS	<input type="checkbox"/> MINT <input type="checkbox"/> MQSS	MINT
ALC	<input type="checkbox"/> YES <input type="checkbox"/> NO	NO
TEXT RATE	10 ↔ 20 ↔ 40 ↔ 80	20
AMP TUNER	<input type="checkbox"/> YES <input type="checkbox"/> NO	YES
VNR	<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	PICTURE MODE (VSM)	BRIGHT
CHANNEL POSITION	1 POSITION	OFF TIMER	OFF
CHANNEL PRESET	Refer to OPERATING INSTRUCTION	LANGUAGE	THAI
		AUTO SHUTOFF	OFF
VOLUME	Appropriate sound volume	ECO SENSOR	OFF
TV/VIDEO	TV	BLUE BACK	OFF
ON SCREEN DISPLAY	POSITION NUMBER DISPLAY	ON TIMER	PR1 0:00
COLOUR SYSTEM	AUTO PAL	CHILD LOCK	OFF
SOUND SYSTEM	B / G	PICTURE BOOSTER	OFF
BILINGUAL MODE	I		

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 ~ 127	43

■ 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	-50	←	←	←
2. DRIVE (R / B)		-64 ~ +63	0	←	←	←
3. BRIGHT		-128 ~ +127	0	←	←	←
4. CONT.		-64 ~ +63	0	←	←	←
5. COLOUR (P / S / N3 / N4)		-64 ~ +63	0	←	←	←
6. TINT (N3 / N4)	TV / VIDEO	-64 ~ +63	—	—	0 / +8	0 / 0
7. SECAM BL ADJUST		-32 ~ +31	0	←	←	←
8. SHARP	TV / VIDEO	-32 ~ +31	-7 / +15	←	←	←
9. AMP T. SHARP		-16 ~ +15	-12	←	←	←

 : Do not adjust.

Adjustment of SUB COLOUR-II (Page 18)

Adjustment part	Description
5. COLOUR	
PAL COLOUR	Value (A) in the figure: Set to +9V (W & G).
SECAM COLOUR	Value (A) in the figure: Set to +9V (W & G).
NTSC 3.58 COLOUR	Value (A) in the figure: Set to +9V (W & G).

Adjustment of SUB TINT-II (Page 19)

Adjustment part	Description
6. TINT	
NTSC 3.58 TINT	Value (B) in the figure: Set to +7V (W & Cy).

■ DEFLECTION CIRCUIT ADJUSTMENT (Page 20)

[SUB MENU 4. DEF]

Setting item	Adjustment name	Variable range	Initial setting value	
			50Hz	60Hz
1. VER. POSITION	Vertical center	-4 ~ +3	-1	-3
2. HOR. POSITION	Horizontal center	-16 ~ +15	+3	+3
3. VER. HEIGHT	Vertical height	-64 ~ +63	-35	+1
4. VER. LINEARITY	Vertical linearity	-32 ~ +31	+15	-1
5. VER. SCURVE	Vertical scurve	-32 ~ +31	-32	0
6. HOR. VCO ADJUST	Horizontal VCO	-64 ~ +63	0	0

: Do not adjust.

■ VSM PRESET ADJUSTMENT (Page 22)

[Setting Values for SUB MENU 4. VSM PRESET]


VSM preset mode VSM Setting item	BRIGHT	STANDARD	SOFT
TINT SETTING VALUE	+15	←	←
COLOUR SETTING VALUE	+15	←	←
BRIGHT SETTING VALUE	+15	←	←
CONT. SETTING VALUE	+30	+19	+14
SHARP SETTING VALUE	+20	+20	+15

: Do not adjust.


■ PRESET ADJUSTMENT (Page 23)

[SUB MENU 5. PRESET]

Colour system		Initial setting value			
		PAL	SECAM	NTSC 3.58	NTSC 4.43
1. C-TRAP FIX		1	←	←	←
2. SHARP PEAK		0	←	←	←
3. ABL		1	←	←	←
4. GAMMA		0	←	←	←
5. Y.DELAY TIME	TV	0	2	2	3
	VIDEO	0	2	0	2
6. BLACK EXP START		3	←	←	←
7. C-BPF	TV	1	←	0	←
	VIDEO	1	←	←	←
8. CW/SCP		0	←	←	←
9. V.IF DET. LEVEL		0	←	←	←
11. IF AGC MIN.		0	←	←	←
12. V.IF AGC		0	←	←	←
13. V.IF PMOD		0	←	←	←
19. VNR		15	←	←	←
20. RGB LIM.		1	←	←	←
21. RGB LIMIT LEVEL		2	←	←	←
23. TEXT H. POSITION		-3	←	←	←
24. READ DATA		—	—	—	—

 : Do not adjust.

TV RF system		Initial setting value			
		B/G	I	D/K	M
10. S.IF DET. LEVEL		0	←	←	←
14. S.IF BPF BW ADJUST		0	←	←	←
15. S.IF TRAP FO ADJUST		0	←	←	←
16. S.IF TRAP FO ADJUST 2		0	←	←	←
17. S.IF-TRAP		0	←	←	←
18. S.IF-BPF		0	←	←	1
22. S.IF SW		1	←	←	0

 : Do not adjust.

JVC

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