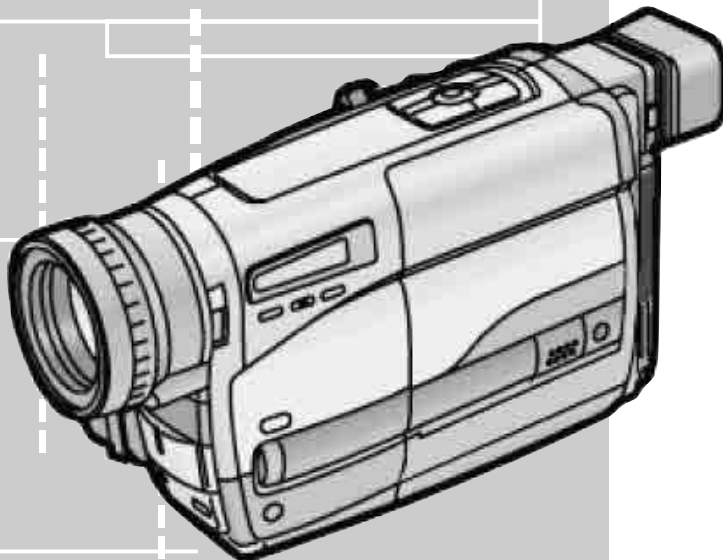


LIVE CAM _____ Service Manual

Livance LC 1100 GM17900



Zusätzlich erforderliche Unterlagen für den Komplettservice
Additionally required Service Documents for the Complete Service

Service Manual

Sicherheit
Safety

Materialnr./Part No.
720108000000

Materialnummer/Part Number 7201005408000
Änderungen vorbehalten/Subject to alteration • Printed in Germany
E-BS-SA14 0601
<http://www.grundig.com>

Grundig Service

Holpline Deutschland...
...Mo.-Fr. 8.00-18.00 Uhr

Technik:

TV	0180/52318-41
TV	0180/52318-49
SAT	0180/52318-48
VCR/LiveCam	0180/52318-42
HiFi/Audio	0180/52318-43
Car Audio	0180/52318-44
Telekommunikation	0180/52318-45
Fax:	0180/52318-51
Planatron (8.00-22.00 Uhr)	0180/52318-99

Ersatzteil-Verkauf:

Mo.-Fr. 8.00-19.00 Uhr

Telefon:	0180/52318-40
Fax:	0180/52318-50

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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SPECIFICATIONS

ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	Source: Battery Pack; 7.2 V DC AC Adaptor; 7.9 V DC Consumption (Battery Operation) ; 4.7 W	VIDEO	Television System: EIA Standard (625 lines, 50 fields) PAL color signal
VIDEO RECORDING SYSTEM	VHS-C 4 Head System	AUDIO	OUTPUT: PHONO CONNECTOR; 1.0 Vp-p 75 Ω terminated
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7 mm)		HEADS: 1 Stationary head (Normal-Mono) OUTPUT: PHONO CONNECTOR; -6 dB (47kΩ loaded)/less than 1 kΩ
TAPE SPEED	SP mode : 23.39 mm/s LP mode : 11.695 mm/s	OPERATING TEMPERATURE	0-40 °C
	Record/Playback Time: SP mode ; 60 min. with EC60 LP mode ; 120 min. with EC60 FF/REW Time: less than 2.5 min. with EC60	OPERATING HUMIDITY	10-80 %
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)	WEIGHT	Approx. 740g (without Battery Pack)
	STANDARD ILLUMINATION: 1,400 lx	DIMENSIONS	81 (W) X 118 (H) X 231 (D) mm
	LENS: 22 : 1 Power Zoom Lens F1.6 Focal Length; 2.9-63.8 mm Digital AI Auto Focus/Auto Iris Filter Diameter ; 43 mm	STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Cassette Adaptor (Except NV-RZ10B) 1 pc. Shoulder Strap 1 pc. DC Output Cable 1 pc. Battery for Cassette Adaptor (Except NV-RZ10B) 1 pc. AC Cord 1 pc. AV Cord (NV-RZ10B only) 1 pc. Remote Controller (NV-RZ10 only) 1 pc. Battery for Remote Controller (NV-RZ10 only)
FINDER	0.24-inch Black/ White Electronic Finder		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

1 INTRODUCTION

1.1. INTRODUCTION1

This service manual contains technical information which will be allowed service personnel's to understand and service this model. Please use part number on the parts list to make order for spare part and do not use reference number on the drawing. If the circuit is changed or modified, this information will be followed by supplement service manual.

Note 1:

The service manual for Mechanism-Chassis is separated as another one.
Please refer to the following manual for detail of adjustment procedure for Mechanism-Chassis.

Order number for service manual of Mechanism-Chassis : VMD9912044C8

1.2. INTRODUCTION2

Note 1:

Differences are mentioned as follows for RZ9 series.

Description	EN	ENC
Packing case	VPG0H93	VPG0J57

Note 2:

Differences are mentioned as follows for RZ10 series.

Description	EG	EGM
Packing case	VPG0H79	VPG0H80
Operating manual	VQT9062	VQT9063

Note 3:

Differences are mentioned as follows for RZ10 series.

Description	EG	EGE
Operating manual	VQT9062	VQT9198

1.3. FEATURE COMPARISON CHART

		RZ9	RZ10			
		EN	EG	B	EN	A
CCD	CCD Image Sensor	1/5"	1/5"	1/5"	1/5"	1/5"
	CCD Capacity (Pixels)	450k	450k	450k	450k	450k
B/W-EVF	B/W EVF LCD Monitor	0.24"	0.24"	0.24"	0.24"	0.24"
	EVF LCD Capacity (Pixels)	76,800	76,800	76,800	76,800	76,800
SPEED	Recording/Playback mode	SP/LP	SP	SP/LP	SP/LP	SP/LP
LENS	Optical Zoom Ratio	x22	x22	x22	x22	x22
	Shortest Image Distance (From 1st Lens)	1.8m	1.8m	1.8m	1.8m	1.8m
DIG.ZOOM	Digital Zoom (x45/x100/x250)	O/O/O	O/O/O	O/O/O	O/O/O	O/O/O
	Voice zoom	O	O	O	O	O
ACCESSORY	Remote controller	X	O	O	O	O
	AV cord	X	X	O	X	X

2 SERVICE CAUTION

2.1. EEPROM DATA FOR SPARE PARTS OF THE MAIN C.B.A.

When the Main C.B.A. is replaced, the fixed and average data must be re-installed to EEPROM by Tatsujin kit according to the suffix for Movie camera.

Then, confirm and/or adjust the VTR and Camera adjustment one by one.

2.2. SERVICE EXTENSION CABLES.

This model is required the following extension cables for all connections.

As a convenient way, please prepare the Rear case U(K4ZZ15000013) as extra to repair easily. (K4ZZ15000013 can be purchased through service route.)

Ref.	Parts No.	Pin	Part name	Connection	Q'ty	Remarks
(a)	VFK1582A2120	21	Flat Cable	FP701-Lens Unit	1	
(b)	VFK1582D1225	12	Flat Cable	PP301-Lens Unit	1	
(c)	VFK1582E0720	7	Flat Cable	FP2002-Cylinder	1	
(d)	VFK1582A1325	13	Flat Cable	FP6002-CAM. OP.	1	
(e)	VFK1582A1625	16	Flat Cable	FP6004-S/S ZOOM VTR OP.	1	
(f)	VFK1582A0920	9	Flat Cable	FP4001-A/C Head	1	
(g)	VFK1582A1025	10	Flat Cable	FP1001-EVF	1	
(h)	VFK1582A1925	19	Flat Cable	FP2001-Capstan	1	
(i)	VFK1582A2125	21	Flat Cable	FP6001-Mecha. FPC.	1	
(j)	VFK1582A1620	16	Flat Cable	FP4002-Front	1	

NOTE:

New Parts numbers consist 4 blocks. And they has meaning as follows.

For example: VFK1582 A 21 20
 1 2 3 4

1. It shows type of flexible cable, Zigzag, Straight or wire.

VFK1581	Straight Flexible cable without Connector
VFK1582	Straight Flexible cable with Connector
VFK1574	Zigzag Flexible cable without Connector
VFK1575	Zigzag Flexible cable with Connector
VFK1576	Wire cable

2. It shows pitch (mm) of connector.

A	0.5 mm
B	0.4 mm
C	0.3mm
D	0.8mm
E	1.0mm

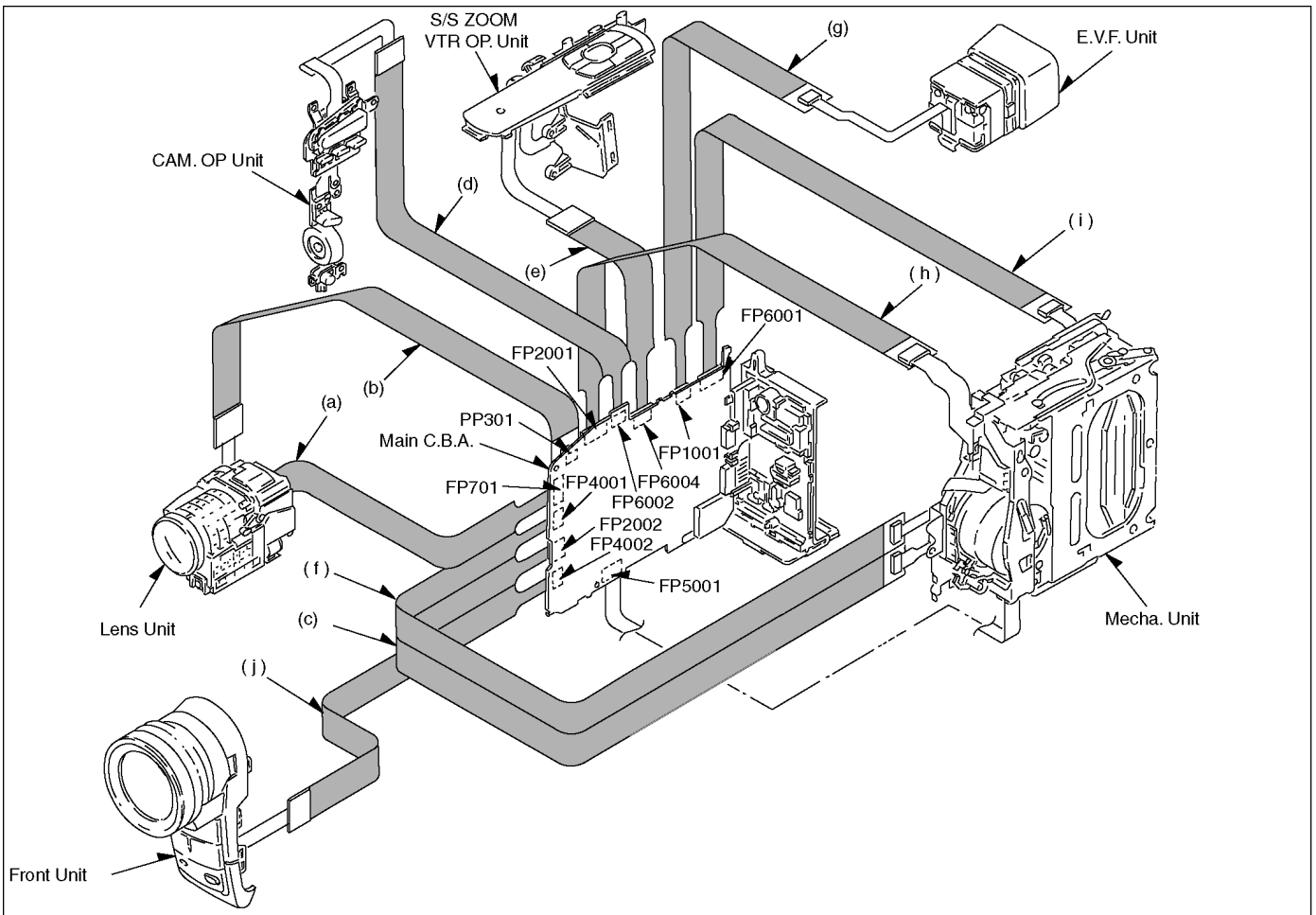
3. It shows number of pins of connector.

4. It shows length of cable with [cm].

Above parts number shows;

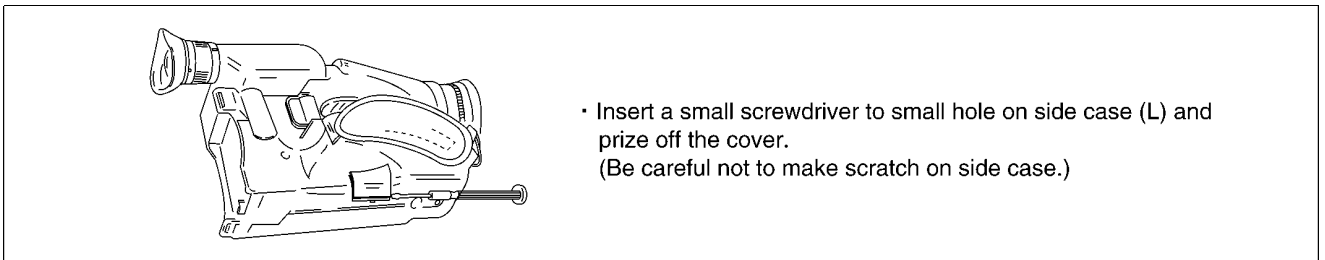
Straight Flexible cable with connector, connector pitch is 0.5 and length of cable is 20cm.

How to use extension cables.

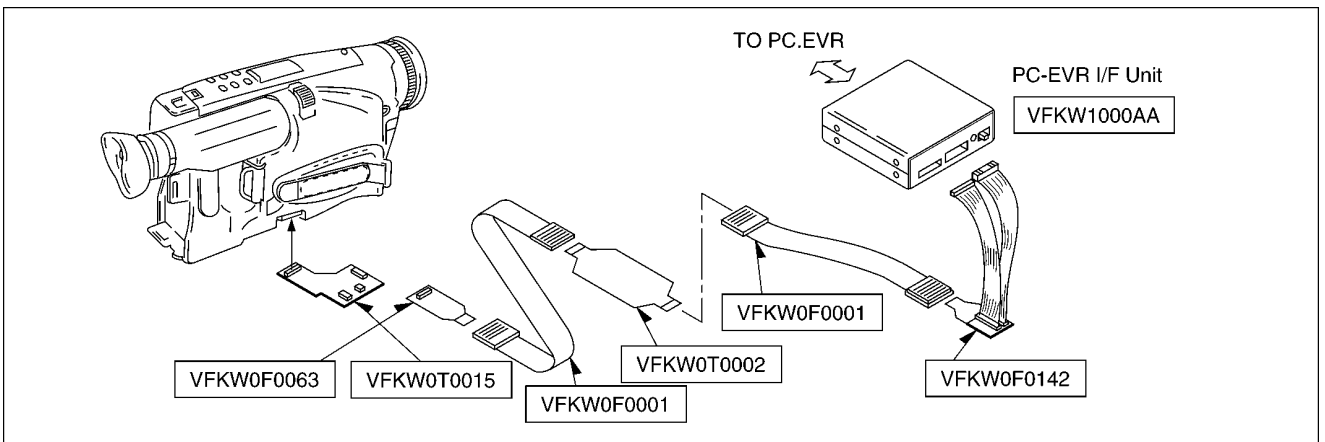


2.3. SET-UP FOR ADJUSTMENT OF TATSUJIN.

For adjustment of "TATSUJIN", please open the small cover which is located at bottom of side case(L) using small screwdriver as follows.



And then connect the JIG board and TATSUJIN cable as follows.



3 SERVICE INFORMATION

3.1. SERVICE INFORMATION DISPLAY (GENERAL DESCRIPTION)

- This Movie Camera has SERVICE INFORMATION DISPLAY function which enables quick trouble-shooting.
- The Service Information Display is available with the following procedures.
- The Service Information is displayed on the EVF and LCD monitor. (There are 4 kinds of SERVICE MODES as follow.)
In the OSD Line Output Mode, the service Information can be displayed even on TV.

MODE NAME	FUNCTION	How to use.		
OSD Line Output Mode	Checking the EVF information on the TV monitor	Push the following keys simultaneously more than 2 sec.		
		FOCUS/SET (SIDE CASE(R))	STOP (TOP PANEL)	DATE/TITLE (SIDE CASE (L) TOP)
SERVICE MODE 1	Remaining Battery A/D value. Safety Device Capstan/Cylinder injections.	Push the following keys simultaneously more than 2 sec.		
		COLOR (SIDE CASE(R))	STOP (TOP PANEL)	DATE/TITLE (SIDE CASE (L) TOP)
SERVICE MODE 2	Remaining Voltage A/D value. Mechanism position Serial key code	After chosing SERVICE MODE 1, push [DATE/TITLE] key.		
SERVICE MODE 3	ERROR CODE Display	After chosing SERVICE MODE 2, push [DATE/TITLE] key.		
SERVICE MODE 4	PG SHIFTER ADJUSTMENT	After chosing SERVICE MODE 3, push [DATE/TITLE] key.		

NOTE1:

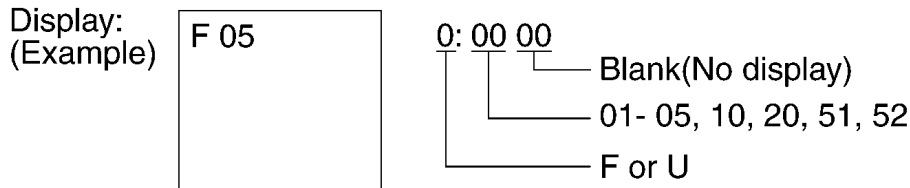
The content of all service modes (service Mode 1 to 4) are the same as previous models.
Please refer to the following Technical Information.
Order number for Technical Information :**VMD9512M138**

NOTE2:

When an undesirable condition occurs, the power will be turned off except zoom& focus motor lock condition. (Since this model, "ERROR CODE" is not automatically displayed on the EVF and LCD monitor, even the CAMERA LED is not flashed.)
By turning on Service Mode 3, it is possible to check what kind of undesirable condition has occurred, even after the ERROR CODE has disappeared. Because of The ERROR CODE is memorized to EEPROM-IC.

3.2. SERVICE MODE 3 (ERROR CODE DISPLAY)

- ERROR CODE appears on counter display position as follows. (See Fig.1).



Display	Condition	The Power off timing
F01	T-REEL LOCK	After 1 minute (flashing the LED)
F02	S-REEL LOCK	
F03	UNLOADING LOCK	
F04	LOADING LOCK	
F05	CYLINDER LOCK	
F51	FOCUS MOTOR LOCK	
F52	ZOOM MOTOR LOCK	
U10	DEW DETECTION	After 18 minutes (flashing the LED)
U20	HEAD CLOGGING	Not turning off

Fig.1

3.3. INSERTING THE BUTTON-TYPE BATTERY

Before setting the data and time, insert the button-type battery (supplied).

- 1 Open the [BACKUP BATTERY] Cover.**
- 2 Insert the button-type battery so that its (+) side is visible.**
- 3 Close the [BACKUP BATTERY] COVER.**

- **Keep the button-type battery out of the reach of children.**
- Make sure you insert the battery with its poles correctly aligned.
- The internal clock works even when the Movie Camera is turned off, and it consumes power from the button-type battery.

- Before inserting or removing the button-type battery, be sure to set the [CAMERA/OFF/VCR] Switch to [OFF].
- When the button-type battery is exhausted, the [🔋] Indication flashes. In this case, replace it with a new CR2025 battery.
(The life of the battery is about 1 year.)
- To mark it easier to remove of the button-type battery, use a pointed object.
- When you remove the button-type battery, be careful not to drop it.

Note:

The lithium battery is a critical component (Type No.: CR2025 Manufactured by Panasonic.)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the equipment manufacturer.

Discard used batteries according to manufacturer's instructions.

VARNING

Explosionsfara vid felaktigt batteritype.

Använd samma batterityp eller en ekvivalent

typ som rekommenderas av apparattillverkaren.

Kassera använt batteri enligt fabrikantens
instruktion.

ADVARSEL!

Lithiumbatteri - Explosionsfare ved fejlagtig håndtering.

Udskiftning må kun ske med batteri

af samme fabrikat og type.

Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suositteluun

tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden

mukaisesti.

4 ADJUSTMENT PROCEDURES

4.1. DISASSEMBLY PROCEDURES

Flow-Chart for Disassembly Procedure

No.	Item/Part	Fig.	Removal (Screw)
1	Side Case (L) Unit	Fig.1	4-Screws (F)
		Fig.2	1-Screw (A) 1-Screw (B) 1-Screw (C) 3-Screws (D) 1-Screw (E)
		Fig.3	Locking Tab (a) Slightly open the Side Case (L) Unit. Disconnect FP6004.
2	Front Case Unit	Fig.4	4-Locking Tabs (b) Disconnect FP4002.
3	Main C.B.A.	Fig.5	2-Screws (G) Remove the Shield Case. Disconnect the following connectors. FP6002, FP2001, PP301, FP701, FP4001, FP2002, FP5001, FP6001, FP1001, PS3510, PS1003
4	Cassette Cover Unit	Fig.6	1-Screw (H)
5	Rear Case Unit	Fig.7	1-Screw (K) 2-Locking Tabs (c)
6	EVF Unit	Fig.8	2-Screws (L)
7	Mechanism Unit	Fig.9	3-Screws (M) 1-Screw (M')
8	Lens Unit	Fig.10	1-Screw (N)
9	Main Frame Unit	Fig.6	1-Screw (I) 2-Screws (J)
		Fig.11	1-Screw (O) 7-Locking Tabs (d)

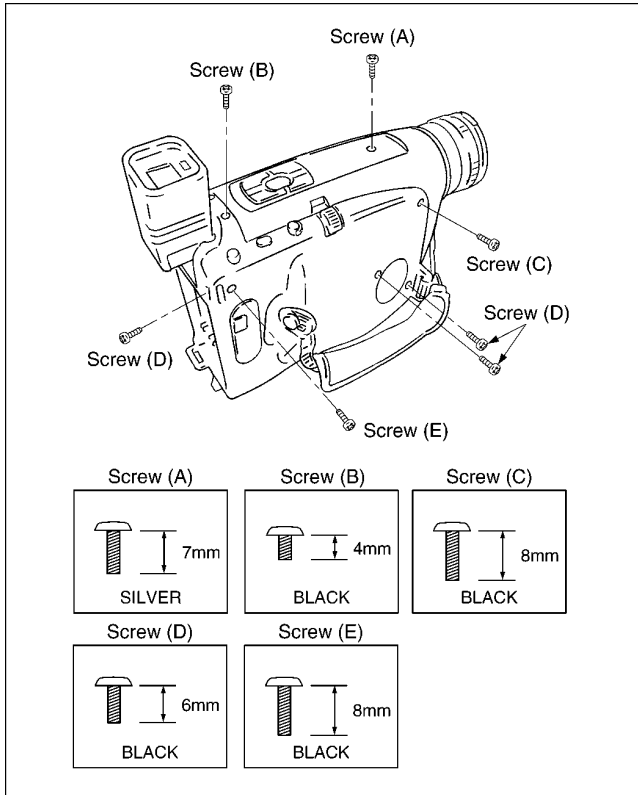


Fig.2

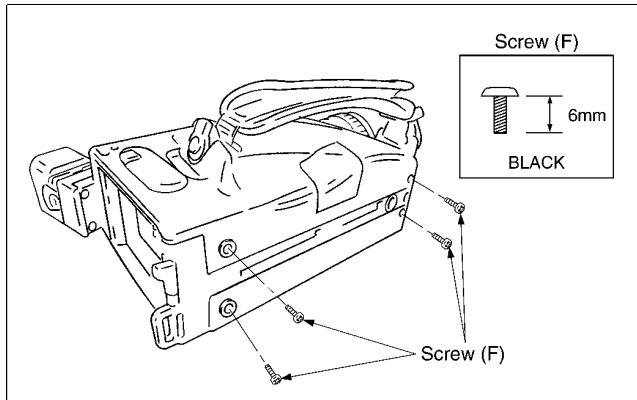


Fig.1

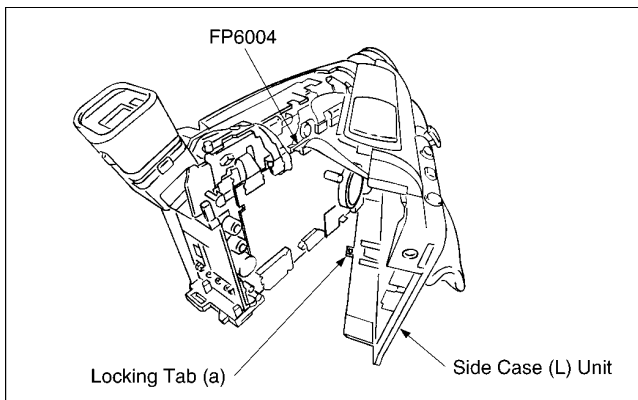


Fig.3

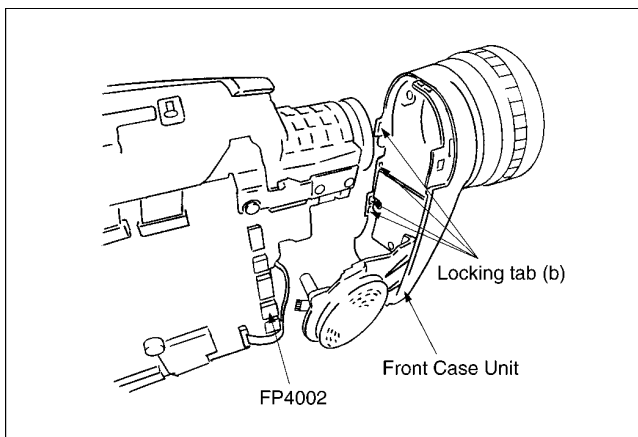


Fig.4

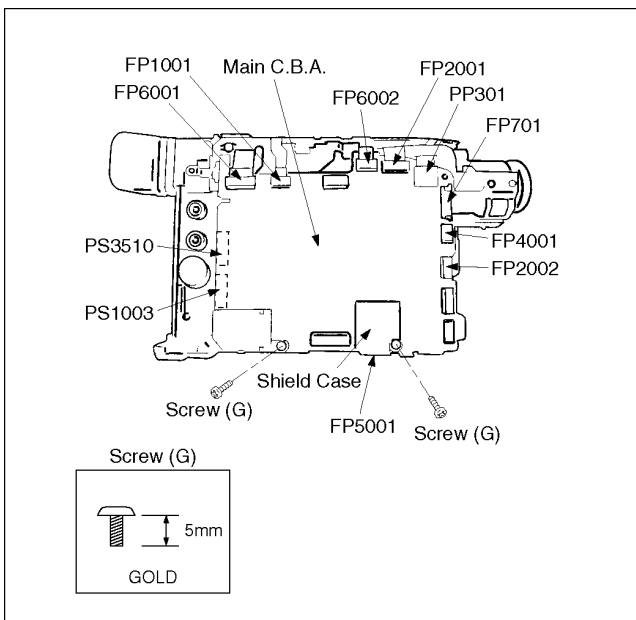


Fig.5

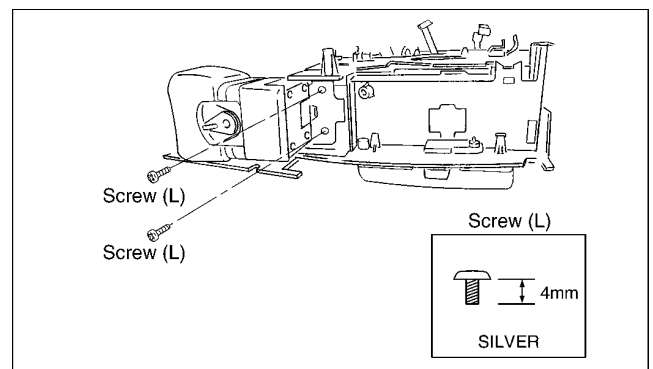


Fig.8

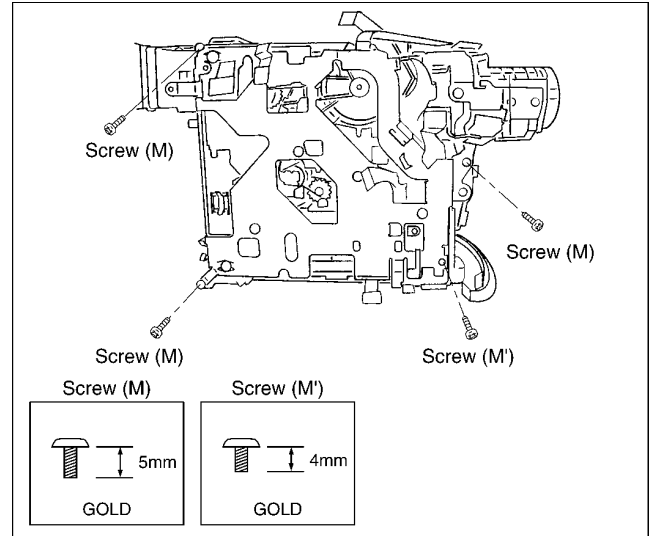


Fig.9

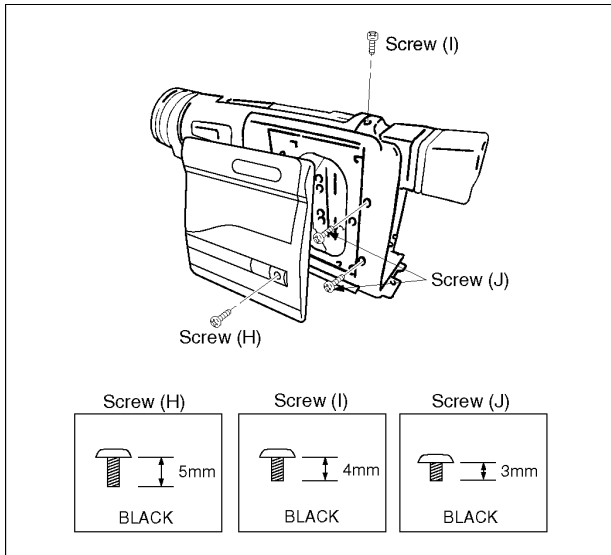


Fig.6

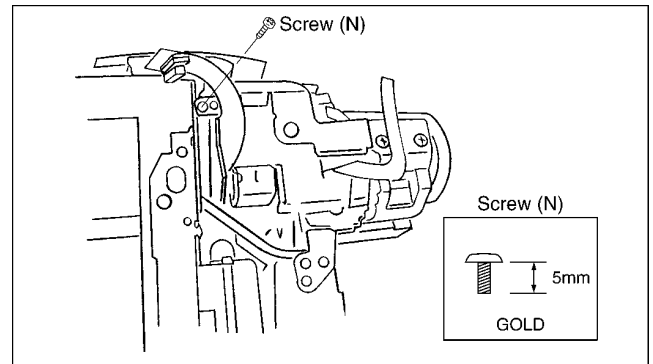


Fig.10

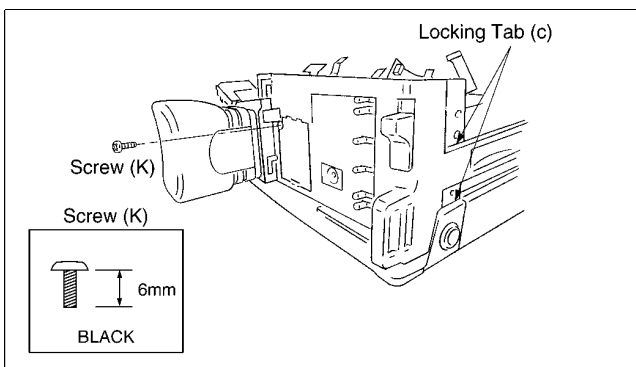


Fig.7

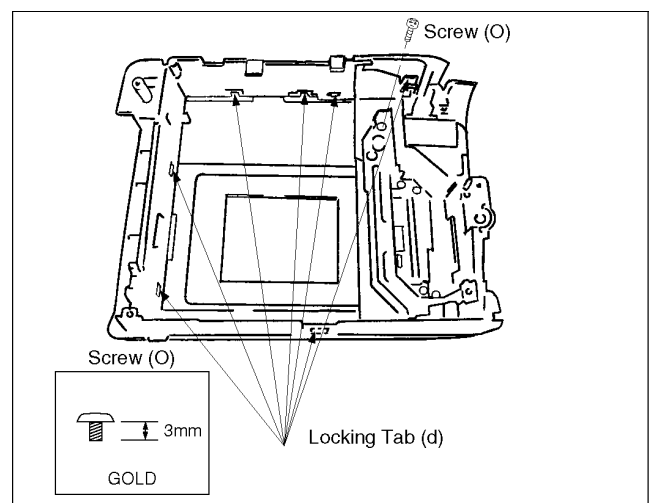


Fig.11

4.2. DISASSEMBLY PROCEDURES OF LENS UNIT

- The following flowchart describes order or steps for removing the lens units and certain printed circuit boards in order to make access to the item needing service.
- To reassemble the unit follow the steps in reverse order.

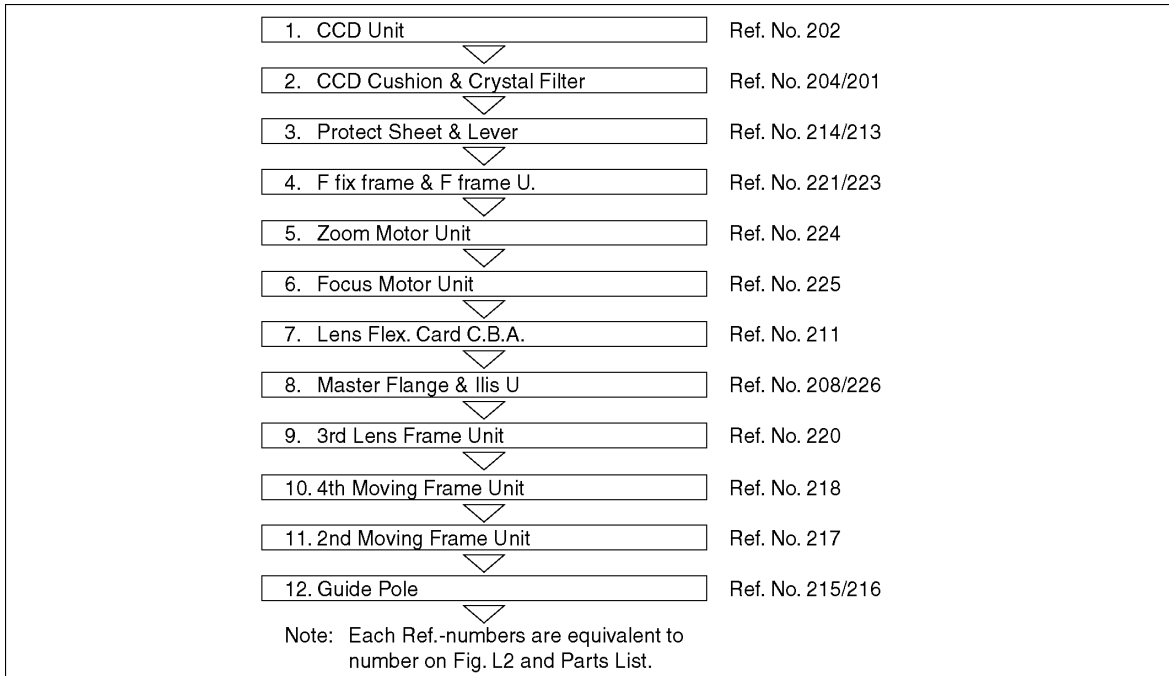


Fig. L1

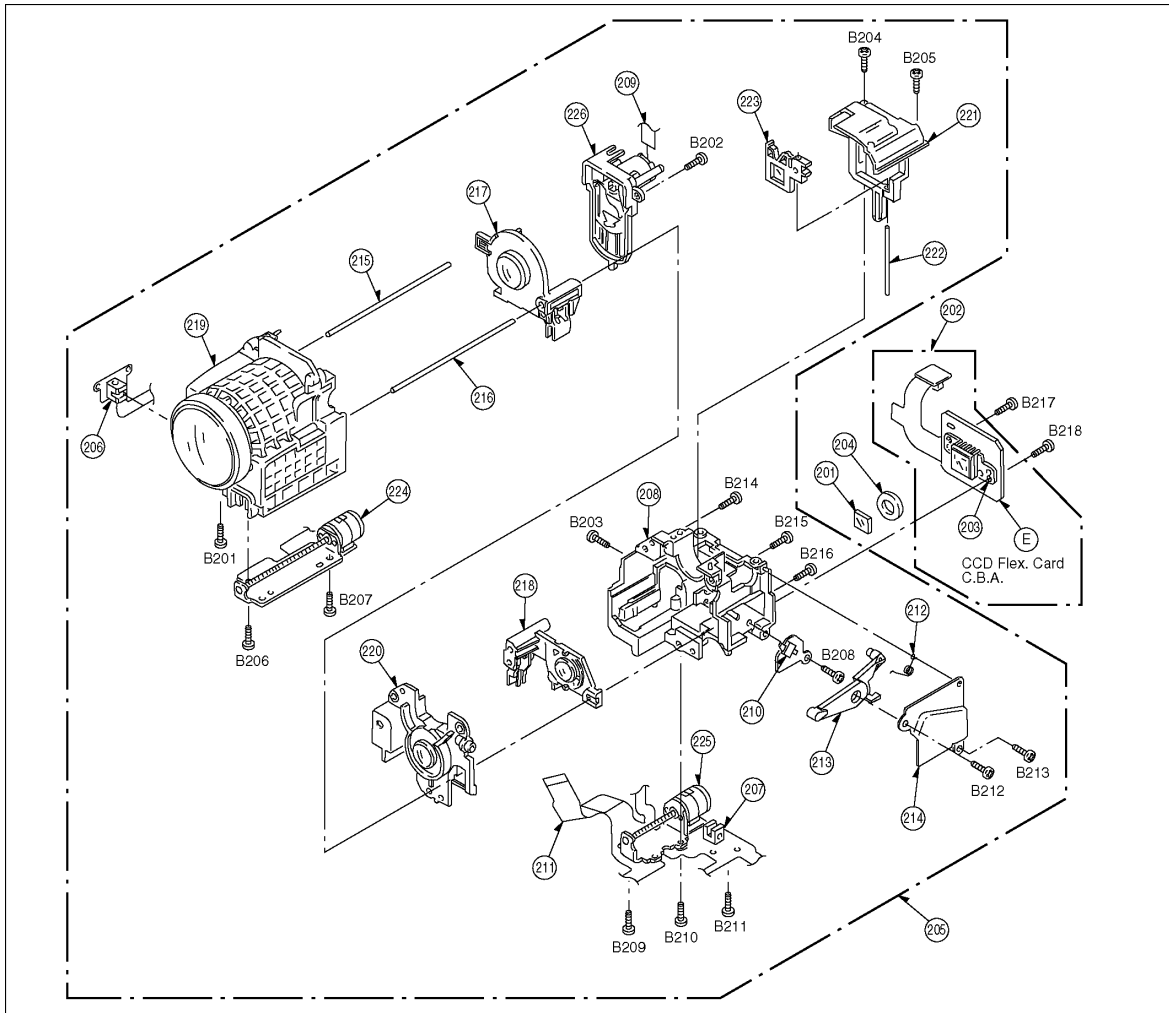





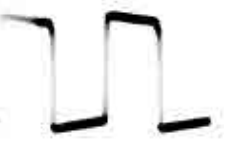
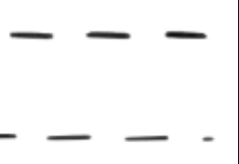
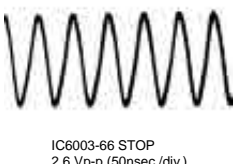
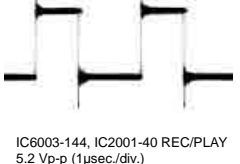

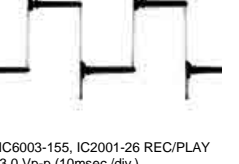

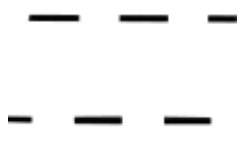

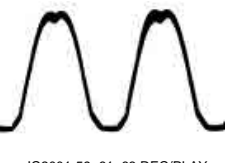




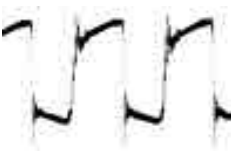

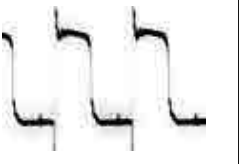
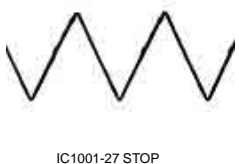
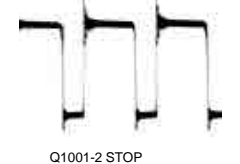
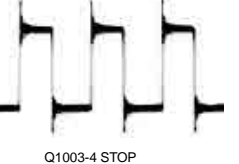
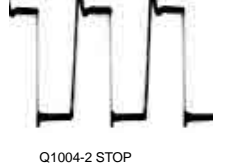
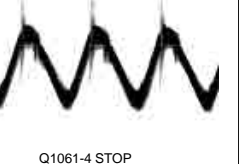


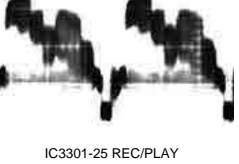
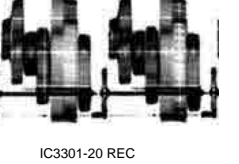
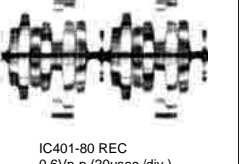
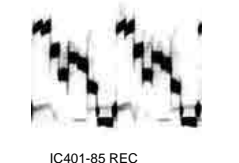
Fig. L2

5 ABBREVIATIONS

	INITIAL/LOGO	ABBREVIATIONS		INITIAL/LOGO	ABBREVIATIONS
A	A.TR	Auto Tracking	D	DISCS	Dis Chip Select
	ABSF	Focus Encoder Input		DISP	Display
	ACI	Analog Channel Cording IC		DL	Delay Line
	ADCLK	Analogue Digital Clock		DL	Delay Line
	ADCNT	Analogue Digital Control		DOBLK	Bit Clock (to D/A Converter)
	ADCS	Analogue Digital Chip Select		DOCTL	Data Output Control
	AE	Auto Expose		DODAT	Serial Data (to D/A Converter)
	AECNT	Auto Expose Control		DRK	Dark
	AEIRQ	Auto Expose Interrupt Request		DS	Double Sampling Pulse
	AF	Auto Focus		DS1, 2	Double Sampling Pulse
	AFADE	Audio Fade		DSP	Digital Signal Processor
	AFCS	Auto Focus Chip Select		DSP	Digital Signal Processor
	AGC	Automatic Gain Control		DVDD	Digital VDD
	AGCCNT	Automatic Gain Control Control		DVSS	Digital Ground
	ALCCNT	Auto Level Control Control		DZ	Digital Zoom
	ALCMAIN	Auto Level Control Drive			
	AMUT	Audio Mute			
AORP	Audio Overlap Pulse				
APCNT	Aperture Control				
ARTV	Artificial Vertical Sync				
ATF	Automatic Track Finding				
ATR	Auto Tracking				
AUX	Auxiliary				
AVDD	Analogue VDD				
AVSS	Analogue Ground				
AWTB	Auto White Balance B-Y				
AWTR	Auto White Balance R-Y				
B	B-Y KB	B-Y Carrier Balance	E	E Snap	Electric Snap Shot
	BACK	Back-up		E2P	EEPROM
	BATT	Battery		EC	Error Control
	BCBM(B-Y)	B-Y Carrier Balance		EC	Torque Control
	BCBM(R-Y)	R-Y Carrier Balance		ECM	Electric Condenser Mic
	BF	Burst Flag		EE CS	EEPROM Chip Select
	BFND	Burst Flag Pulse		EEPROM	Electric Erasable Programmable Read Only Memory
	BFA	Burst Flug for Encoder		EIS	Electric Image Stabilizer
	BFO/BFI	Burst Flug Input/Output		ENV	Envelope
	BL	Back Light		EQ	Equalizer
	BLC 0, 1	Back Light Y Control Out, In		EVF	Electric View Finder
	BLDI/O	Back Light Drive Input / Output		EXT DC	External DC (AC Adaptor)
	BLK	Blanking Pulse		EZOOM	Electric Zoom
	BLKA	Blanking for Encoder			
	BLKI/O	Blanking Pulse In/Out			
	BM	Balance Modulator			
	BUF	Buffer			
C	C CNT	Colour Control	F	F	Far (Focus)
	C/N	Carrier/Noise		FB	Feed Back
	CAM	Camera		FCK	Clock
	CAM T	Camera Test		FENC	Focus Encoder
	CAM TL	Capstan Trque Limit		FM	Field Memory
	CAMCLK	Camera Clock		FM0-7	Field Memory 0 - 7
	CAP R/F/S	Capstan Revers(H)/Stop(M)/Forward(L)		FMDIR	Focus Motor Direction
	CAPSTP H	Capstan Stop Flag (Stop High)		FMOEM	Field Memory Enable
	CAPVM	Capstan Motor Current		FMOEO	Field Memory Enable
	CASDWN	Cassette Down		FMT	Focus Motor
	CBLK	Composite Blanking Pulse		FMT1-4	Focus Motor Terminal 1-4
	CCD	Charge Coupled Devise		FNO	F Value
	CCW	Counter-Clockwise		FR	Capstan Reverse High
	CDS	Correlate Double Sampling Signal			
	CDS OUT	CDS Output Signal			
	CH	Charge			
	CH1	Channel 1 (Odd Field)			
	CHR	Character			
	CHR MIX	Character Mix			
	CI, CO	Buffer In/Out			
	CK	Clock			
	CL / CLK	Clock			
	CMODE	Camera Mode			
	CNR	Chrominance Noise Reduction			
	CO	Control Out			
	CO0-7	Chrominance Output 0 to 7 (Digital)			
	COM	Common			
	CP	Clamp Pulse			
	CPOB	Clamp Pulse for Optical Blanking			
	CPS	Composite Signal			
	CRST	Camera Reset			
	CS	Chip Select			
	CS 0-7	Chrominance Signal Out 0-7			
CSEL	Clock Phase Select				
CSI 0-7	Chrominance Signal In 0-7				
CTSW	Crosstalk Switch				
CW	Clockwise				
CYLVM	Cylinder Motor Current or Power				
D	D MODE	Digital Mode Switch Signal	G	GCNT	Gain Control
	DAC	Digital Analog Convertor		GSW	Ground for Switching Power
	DAC	Digital Analogue Converter			
	DB0-7	Data 0-7			
	DCLR	Digital Clear			
	DCP	Digital Clamp Pulse			
	DICLK	Digital Clock			
	DIS	Digital Image Stabilizer			
H			H	H1.2	H. CCD Drive Pulse
				HASW	HEAD AMP SW
				HBRST	High Bright Set
				HCLR	High Clear
				HCP	Shift Clock for Horizontal Drive
				HD	Horizontal Drive Pulse
				HDTV	High Definition TV
				HEX	Hexadecimal
				HLT	High Bright Signal
				HSS	Horizontal Sinc Signal
				HSS	High Speed Shutter
	I				I
			INV	Inverter	
			IOU	R-Y Analogue Signal Output	
			IOU	Analogue R Signal Output Terminal	
			IOV	B-Y Analogue Signal Output	
			IOV	Analogue B Signal Output Terminal	
			IOY	Analogue Y Signal Output Terminal	
			IRDET	Infrared Rays Detection	
			IRIS/SH	Iris / Shutter Control	
			IRQ	Interrupt Request	
K				K	
			KB		Carrier Balance
			KND		Digital Gain Up
			KNEE		Knee Correction (γ Control)
L			L	LCD	Liquid Crystal Display
				LD	Load Pulse
				LDD	Liquid Direct Drive
				LEDCNT	LED Control
				LI-BATT	Lithium Battery
				LOAD	Loading
M			M	LSB	Least Significant Bit
				LVL	LPF Switch for Auto Focus
				MD	Modulation
				MENB	Focus Motor Enable
				MFF	Manual Focus Far
				MFN	Manual Focus Near
		MIX N.R.D.	Non Rec Data Mix		
		MRST	Focus Motor Reset		
		MSB	Most Signal Bit		
		MVSYNC	Monitor Vertical Sync Signal		

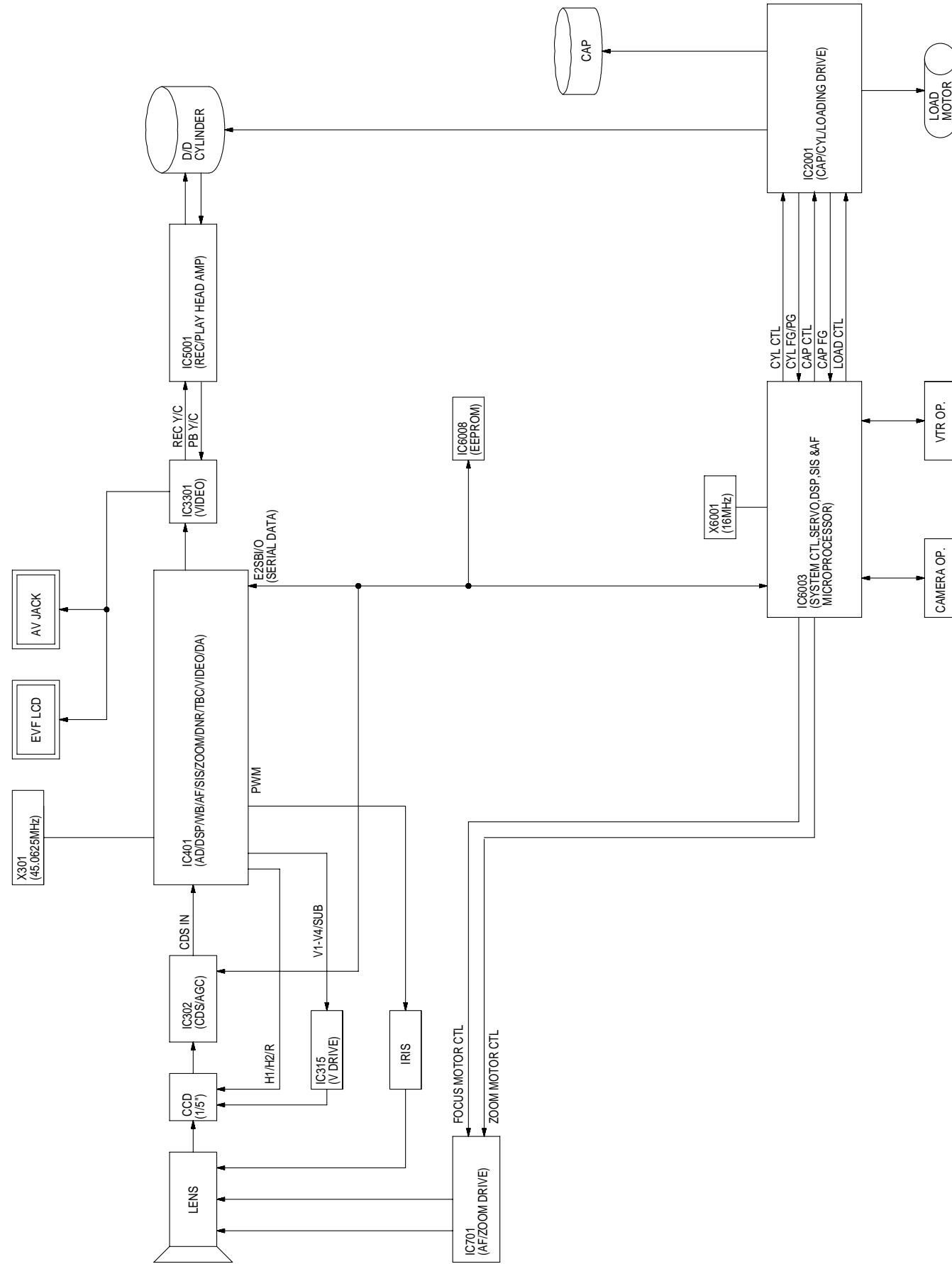
	INITIAL/LOGO	ABBREVIATIONS		INITIAL/LOGO	ABBREVIATIONS	
N	N N/F N/P NC NDE NLE NR NRD NRD BLK NRD CLK NRDBLK NRE NWE	Near (Focus) Near/Far Focus NTSC/PAL No Connection Non Liner De-Emphasis Non Liner Emphasis Noise Reduction Non Rec Data No Rec Data Blanking No Rec Data Clock Non Rec Data Blanking Read Enable Input (Low Active) Write Enable (Low Active)	S	SPA SPEN SPST SRT SSA STAB STB STB	ATF Sampling Pulse 8 Bit Data Enable 8 Bit Data Strobe Start Start Sync block Area Safety Tab Switch Stand by Signal Strobe	
					T	T T PHOT TBC TFT TH TI TL TM TMD TRE TREEL TRFIX TRIWAVE TRP TRP TSR TST
O	OB OBCNT OE OFS OP OSD OVL OZ	Optical Black Optical Black Control Output Enable Offset Operation AMP Output ON Screen Display Overlap Pulse Optical Zoom	U	U/V SEL UNLOAD UNRE UNWE UV UV SEL	R-Y/B-Y Select Signal Un-Loading Microprocessor Read Enable Microprocessor Write Enable R-Y/B-Y R-Y/B-Y Select Signal	
					V	V1-V4 VB VCE VCO VCP VCTRL VD VDDX VDDXY VDDY VDREC Vgg Vgl VID VIN VITC VL VLC VLOCKP VLP VM VMD VMD1-3 VMODE VMVH VORP VRB VRBS VREF1R3V VREF3R3V VREFH VREFL VRI VRO VRT VRTS VSS
P	PAJ PB1-3 PBCTL PBCTL PBH PBLK PC1-3 PCBM PCH PCI PCO PCS PCV PE PED PEDECNT PFP PGC POR POSCOM PREAMP PREBLK PT PWM PWMB	Picture Control PNP Base 1-3 Play Back Control Pre-Blanking Control Head Amp Switch Pre-Blanking (Pulse) PNP Corrector 1-3 Carrier Balance Phase Compensator (Hole AMP) Phase Compensator (Current) Phase Compensator Out Switching Power Control PCV Compensator (Voltage) PNP Emitter Pedestal Pedestal Control Pilot Frame Position Pulse Generator Comparator Power On Reset Position Common Pre-AMP Pre-Blanking Protect for V Voltage Pulse Width Modulation Pulse Width Modulation Pulse	Q	Q2H	Source Output Select	
R	R/B R/L RA RA1 RAC AC RAD RAE RB RB RCB RE REC CC REC CCNT RECCTRL RECI RENCF RENCR REFRASE RGBIV1-2 RST RSTB RSTPWD RSTR RSTW RVCO RW RWAE	Read/Busy Direction Select for Data Transmission Recording AMP Rec AMP 1 Rec Audio Current Read Address Data Read Address Enable Read Busy Read Busy R Carrier Balance Read Enable Rec Current Control Rec Current Control Recording Control Pulse Rec Amp Switch Lens Control (Forward) Lens Control (Reverse) Rotary Erase Head 1V Inverted Signal 1-2 Reset R Strobe Reset Power Down Input Reset Read Reset Write Resister for Oscillation Read Write Read Write Enable	W	W WAD/WAE WB WE WEM WHD	Wide (Zoom) Write Address Enable White Balance Write Enable Memory Write Enable Wide Horizontal Drive Pulse	
					X	XP
S	S PHOT S/S SBD SBI SBO SCAN0-5 SCK SCR "SCR, S.C.R" SEG. SH/IRIS SIOC SNS LED SO	Supply Photo Transistor Start/Stop Serial Data Serial Data Input Serial Data Output Key Scan 0-5 Serial Clock Search Still Cue Review Segment Shutter/Iris Control Serial In/Out Control Sensor LED Serial Data Output	Y	Z	YCE YNCST YNR	Cylinder Error Code Noise Canceller Noise Reduction
					Z	Z.ENC Z.MIC Z.ENC Z.MT(+)/(-) Z.MTER Z.MW

6 WAVEFORM TABLE

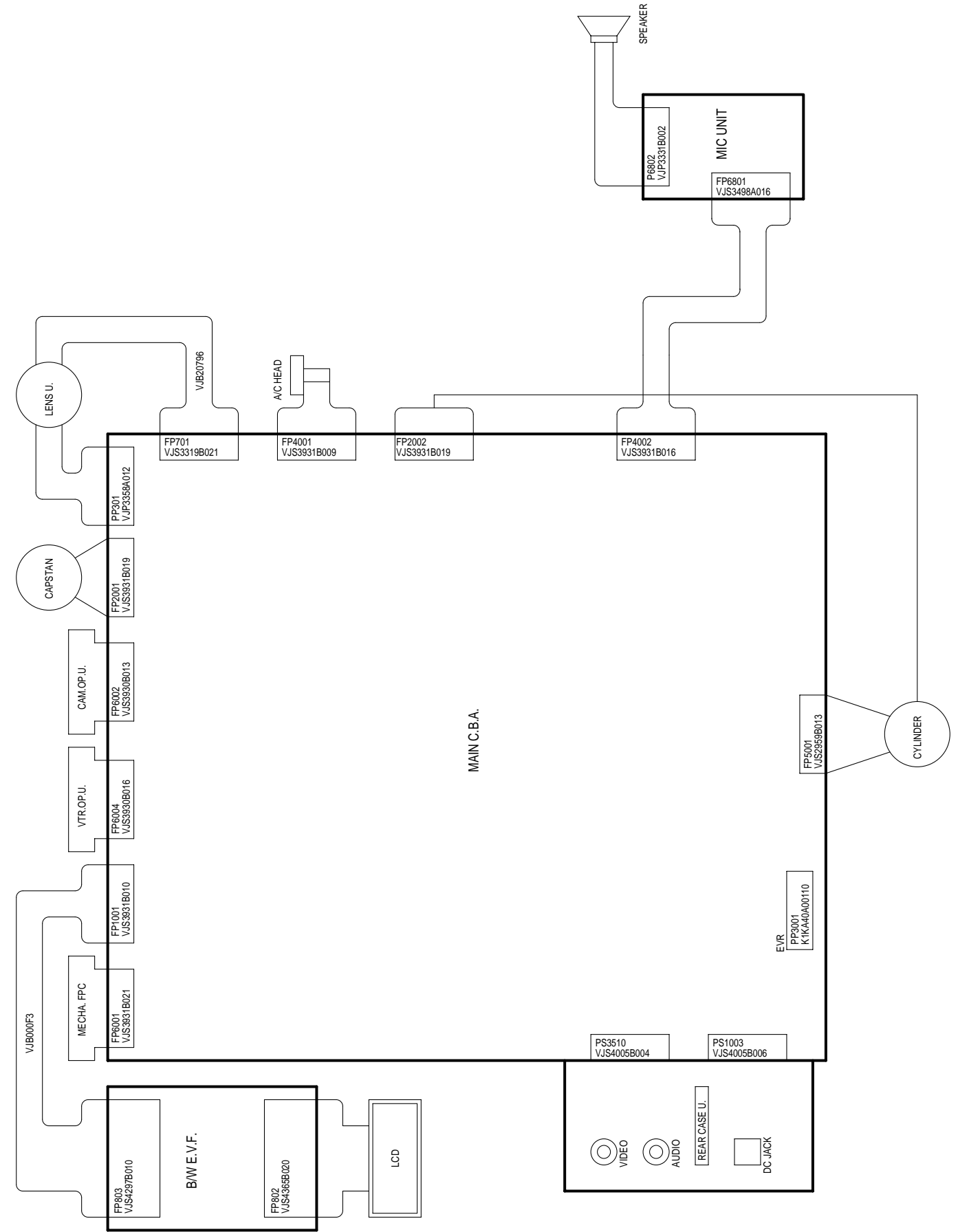
 <p>IC701-12, 14 POWER ON 6.0 Vp-p (5msec./div.) ZOOM MOTOR DRIVING</p>	 <p>IC5001-47 PLAY 0.2 Vp-p (2msec./div.) COLOR BAR</p>	 <p>IC5001-8 3.0 Vp-p (20msec./div.) COLOR BAR</p>	 <p>IC6003-14 FF/REW 2.2 Vp-p (50msec./div.)</p>	 <p>IC6003-16 FF/REW 3.0 Vp-p (20msec./div.)</p>
 <p>IC6003-66 STOP 2.6 Vp-p (50nsec./div.)</p>	 <p>IC6003-144, IC2001-40 REC/PLAY 5.2 Vp-p (1µsec./div.)</p>	 <p>IC6003-145 REC/PLAY 5.4 Vp-p (1µsec./div.)</p>	 <p>IC6003-155, IC2001-26 REC/PLAY 3.0 Vp-p (10msec./div.)</p>	 <p>IC6003-157, IC2001-25 REC/PLAY 3.0 Vp-p (0.2msec./div.)</p>
 <p>IC6003-159, IC2001-27 REC/PLAY 3.0 Vp-p (1msec./div.)</p>	 <p>IC6003-174 STOP 5.4 Vp-p (0.5µsec./div.)</p>	 <p>IC2001-59, 61, 63 REC/PLAY 2.8 Vp-p (1msec./div.)</p>	 <p>IC2001-52, 53, 54 REC/PLAY 2.8 Vp-p (20msec./div.)</p>	 <p>IC2001-21 REC/PLAY 0.6 Vp-p (0.5µsec./div.)</p>
 <p>IC302-10 STOP 1.2 Vp-p (20µsec./div.) GRAY SCALE</p>	 <p>IC302-26 STOP 0.6 Vp-p (20µsec./div.) GRAY SCALE</p>	 <p>IC1001-9 STOP 1.0 Vp-p (1µsec./div.)</p>	 <p>IC1001-11 STOP 1.4 Vp-p (1µsec./div.)</p>	 <p>IC1001-15 STOP 1.3 Vp-p (1µsec./div.)</p>
 <p>IC1001-27 STOP 0.6 Vp-p (1µsec./div.)</p>	 <p>Q1001-2 STOP 11.8 Vp-p (1µsec./div.)</p>	 <p>Q1003-4 STOP 12.0 Vp-p (1µsec./div.)</p>	 <p>Q1004-2 STOP 18.0 Vp-p (1µsec./div.)</p>	 <p>Q1061-4 STOP 0.2 Vp-p (1µsec./div.)</p>
 <p>Q1062-4 STOP 0.2 Vp-p (1µsec./div.)</p>	 <p>IC801-5 STOP (B/W EVF) 1.0 Vp-p (20µsec./div.) COLOR BAR</p>	 <p>IC3301-25 REC/PLAY 3.5Vp-p (20µsec./div.) COLOR BAR</p>	 <p>IC3301-20 REC 1.8Vp-p (20µsec./div.) COLOR BAR</p>	 <p>IC401-80 REC 0.6Vp-p (20µsec./div.) COLOR BAR</p>
 <p>IC401-85 REC 1.0Vp-p (20µsec./div.) COLOR BAR</p>				

7 BLOCK DIAGRAMS

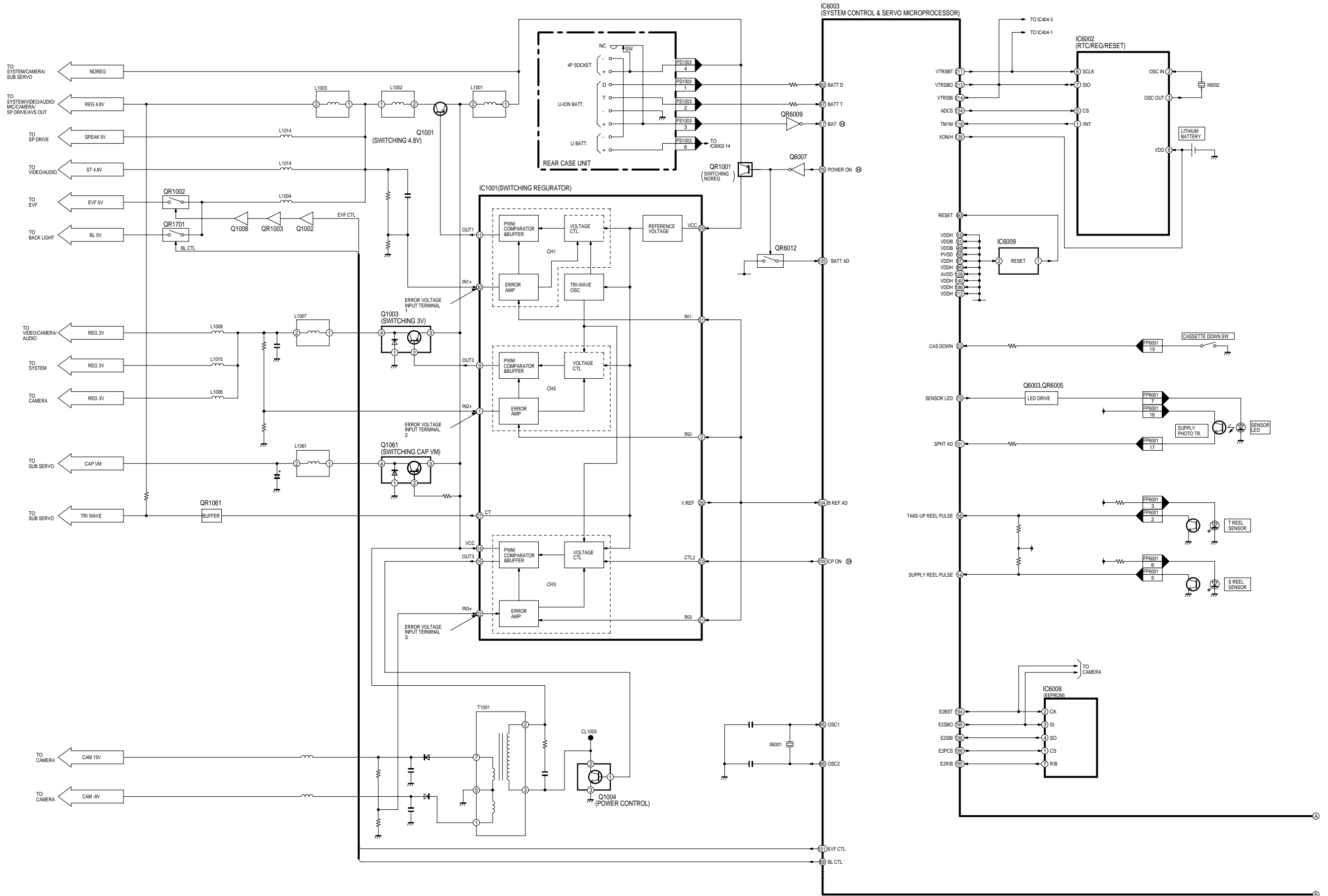
7.1. OVERALL BLOCK DIAGRAM

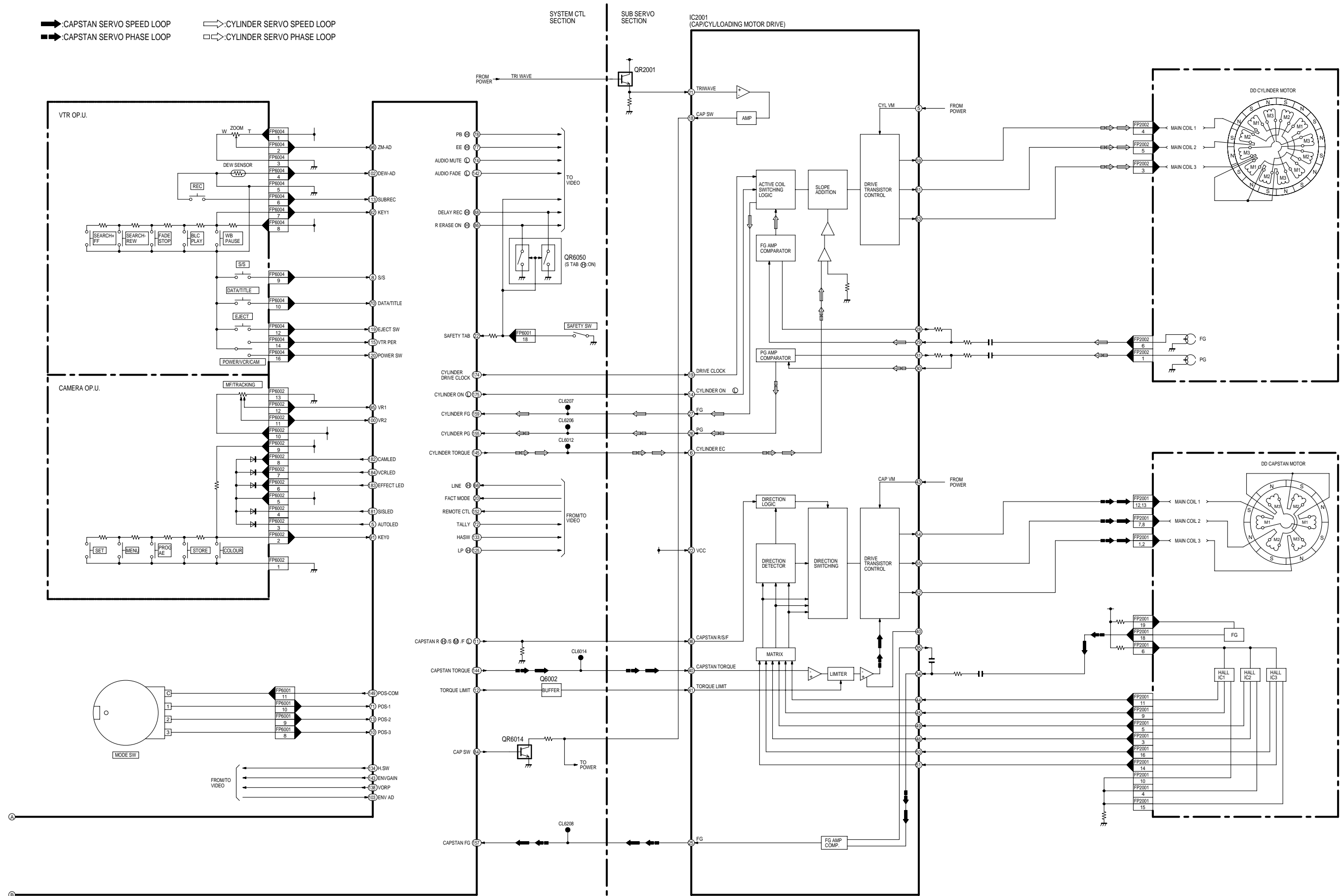


7.2. BLOCK DIAGRAM OF CONNECTION

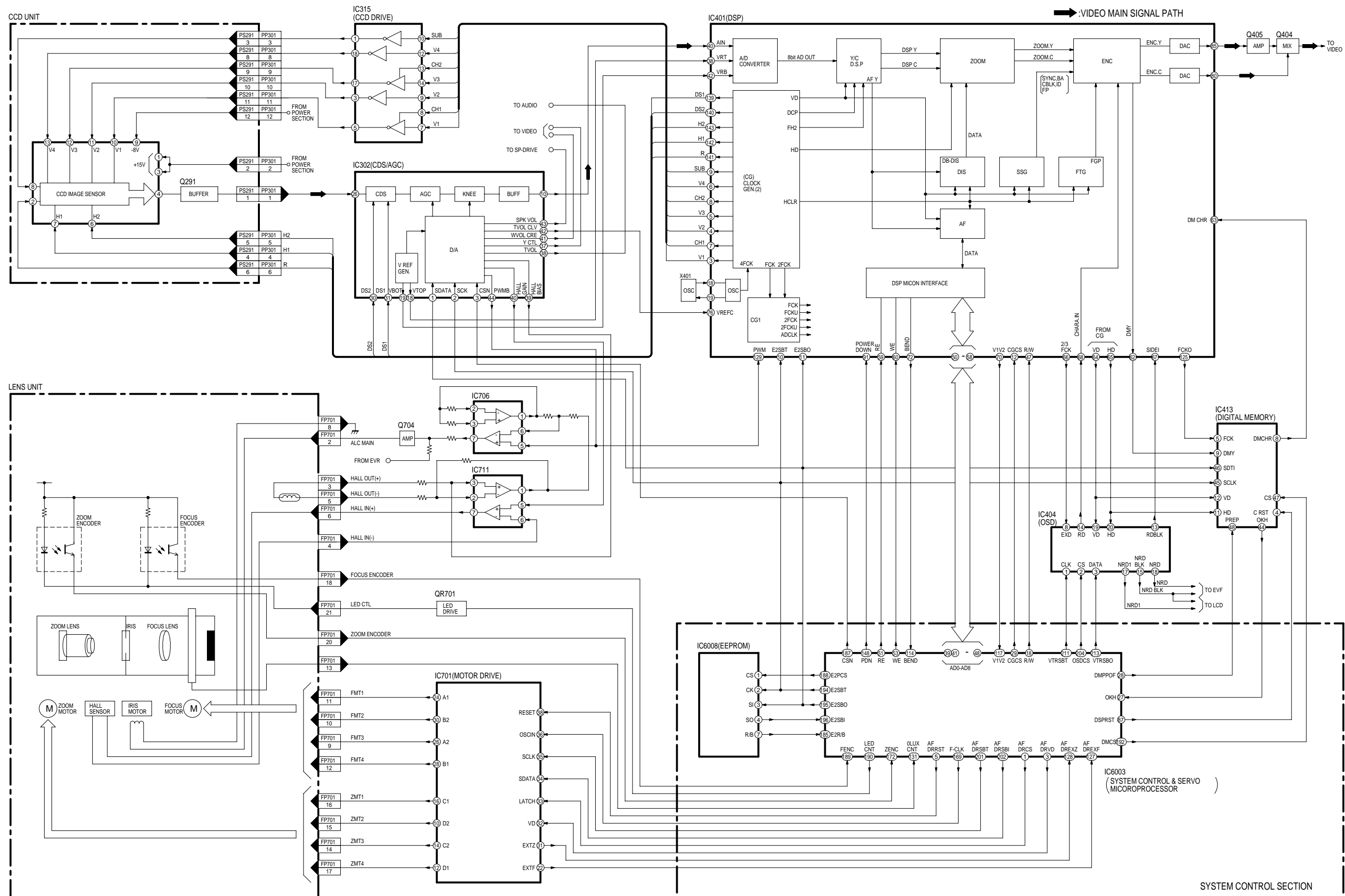


7.3. SYSTEM CONTROL & SERVO/ POWER BLOCK DIAGRAM

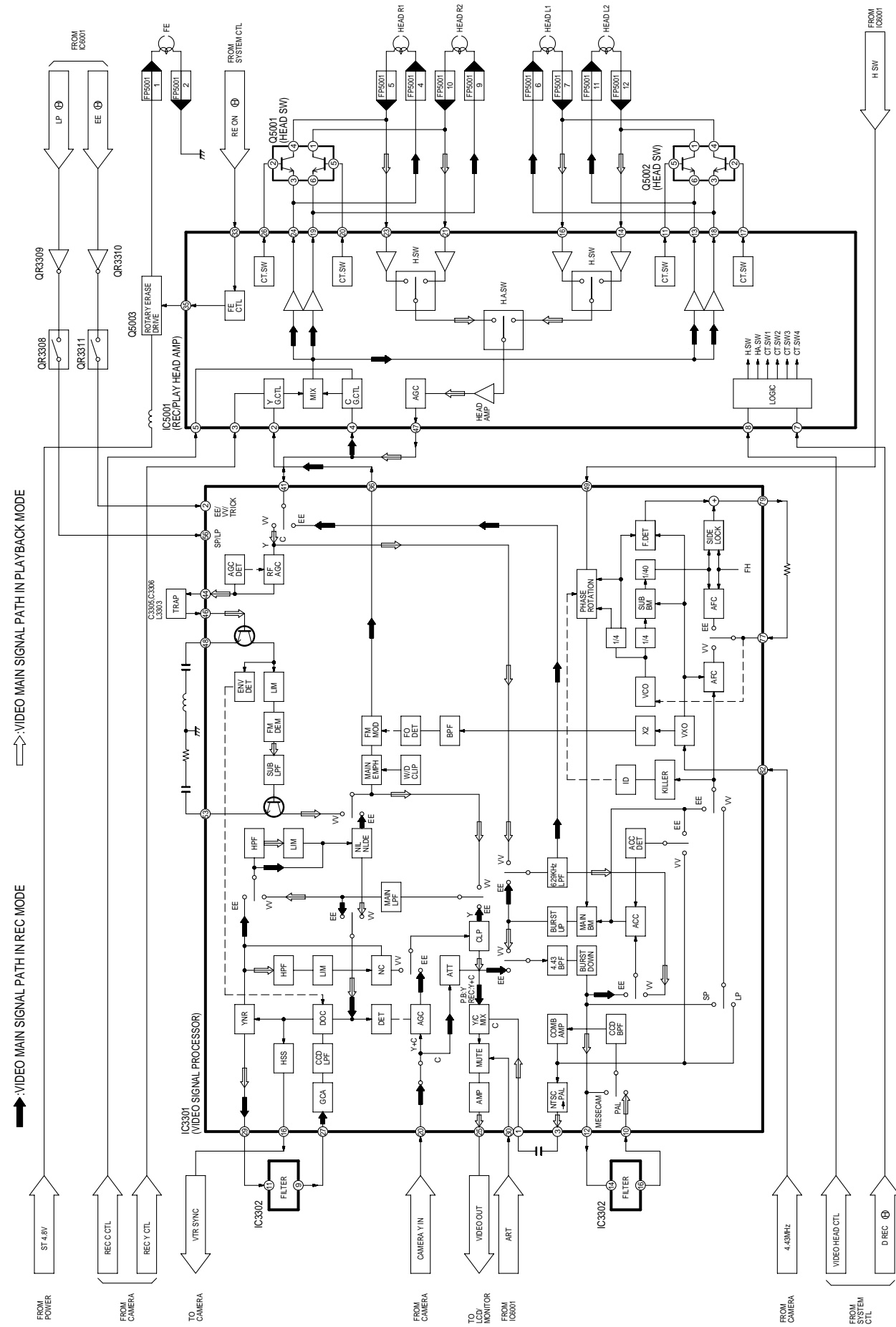




7.4. CAMERA BLOCK DIAGRAM

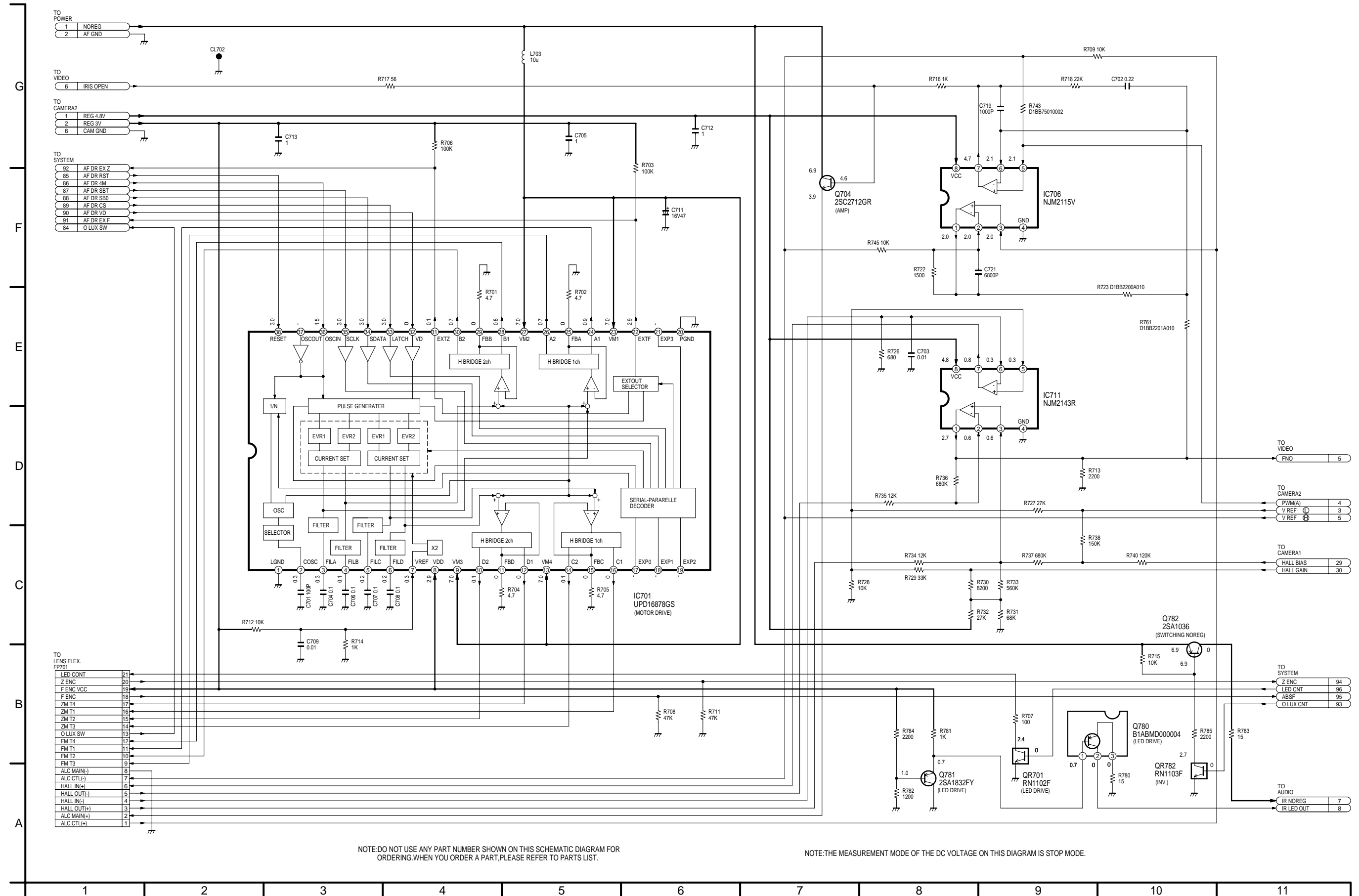


7.5. VIDEO BLOCK DIAGRAM

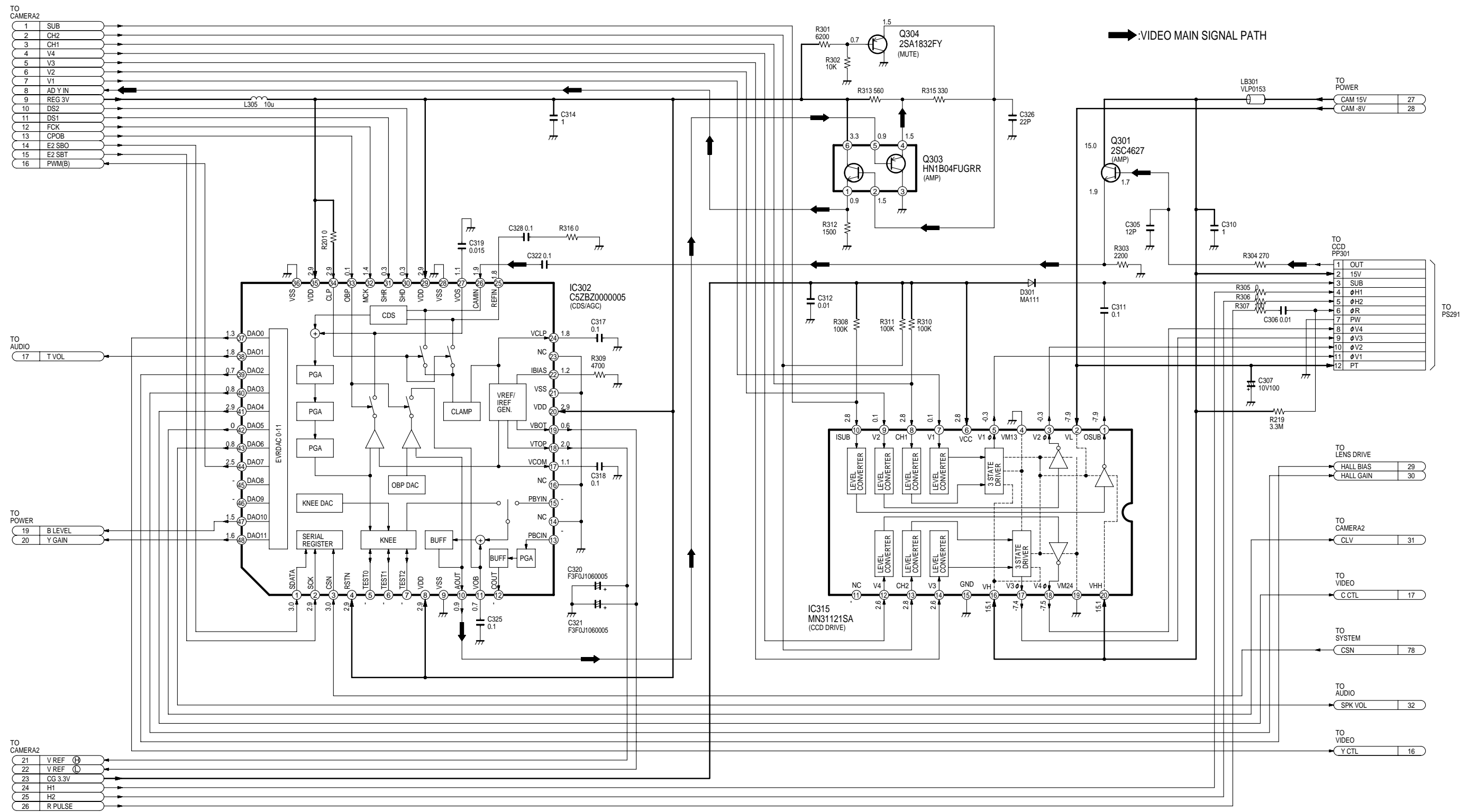


8 SCHEMATIC DIAGRAMS

8.1. LENS DRIVE SCHEMATIC DIAGRAM

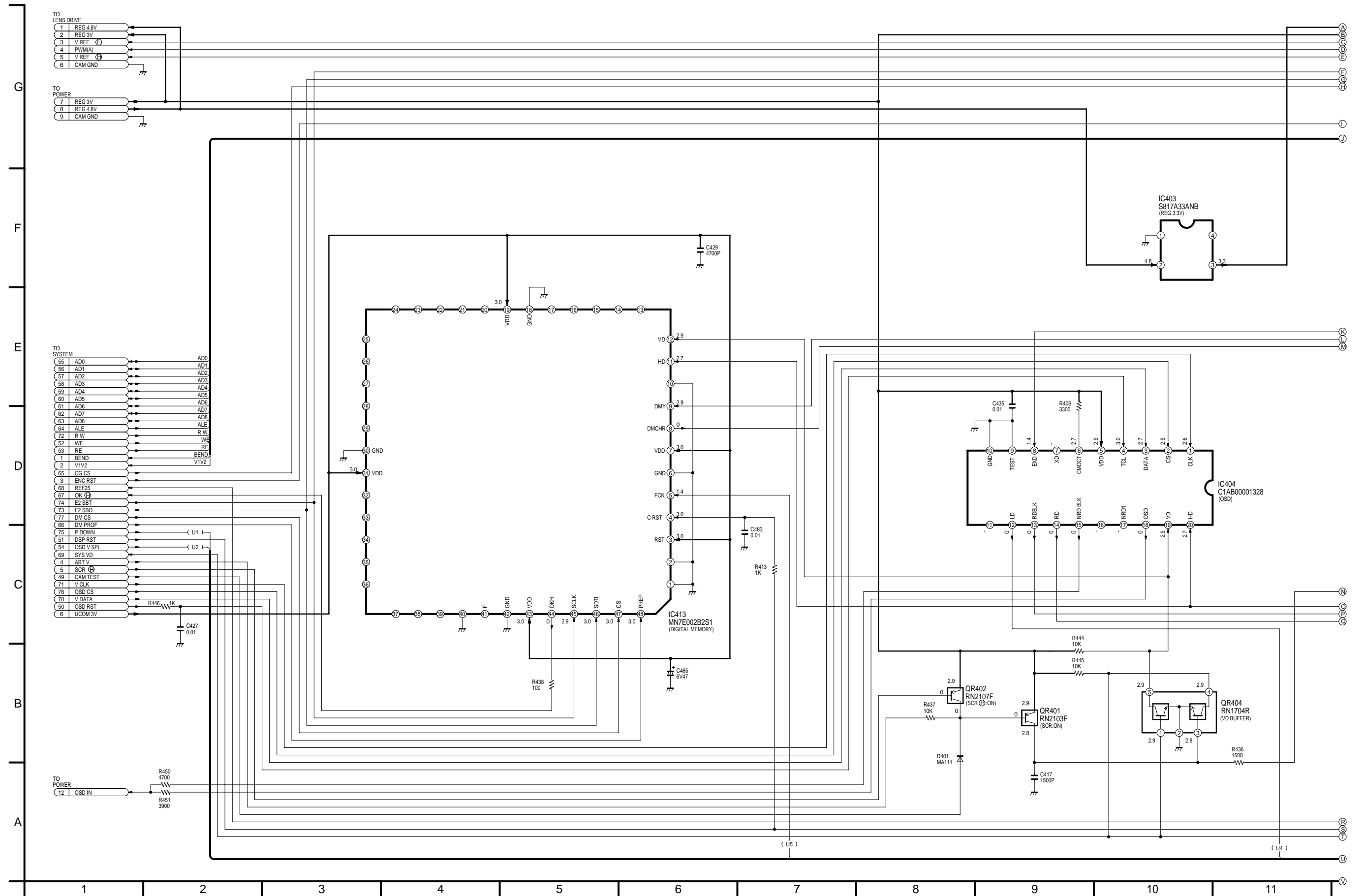


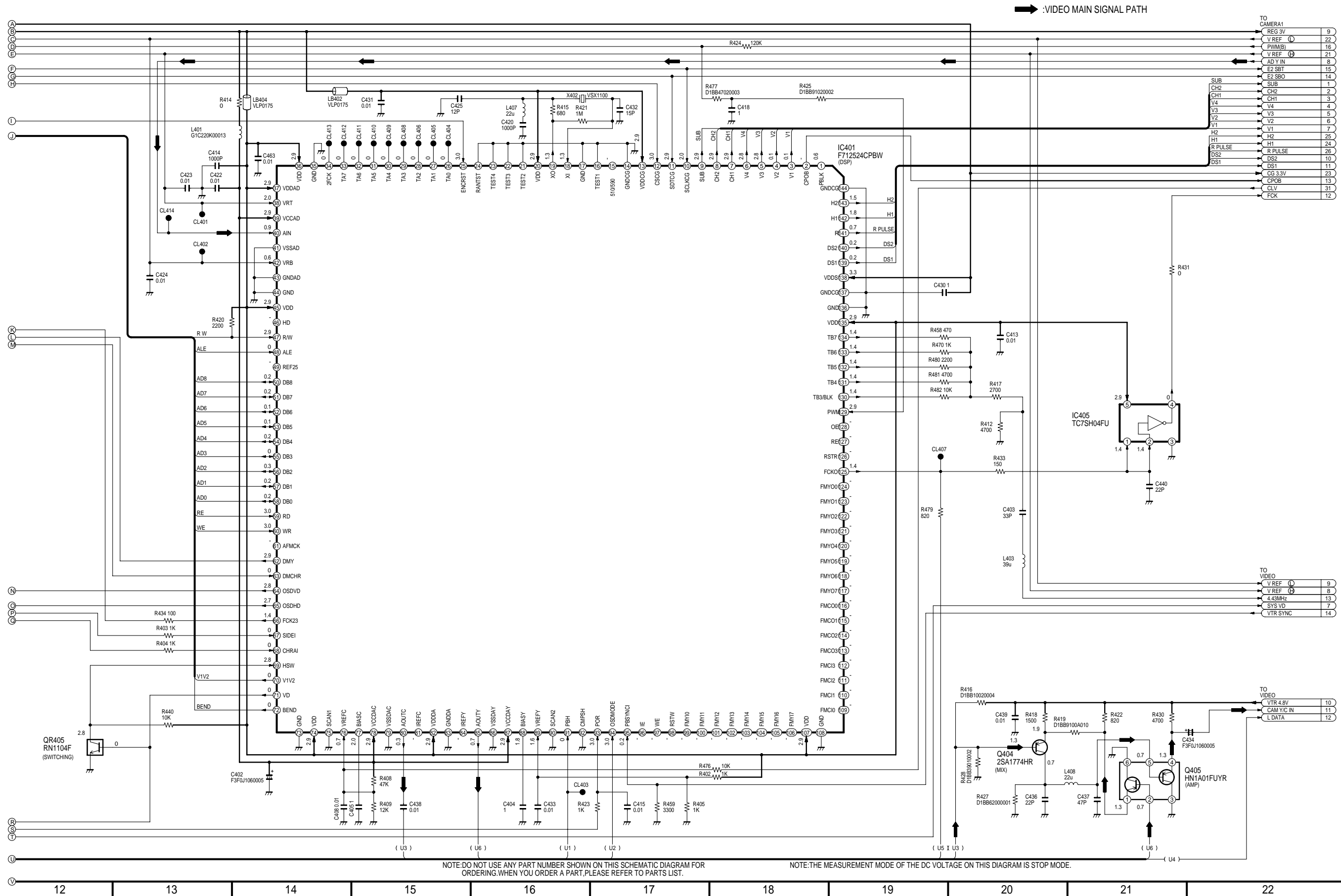
8.2. CAMERA 1 SCHEMATIC DIAGRAM



NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

8.3. CAMERA 2 SCHEMATIC DIAGRAM





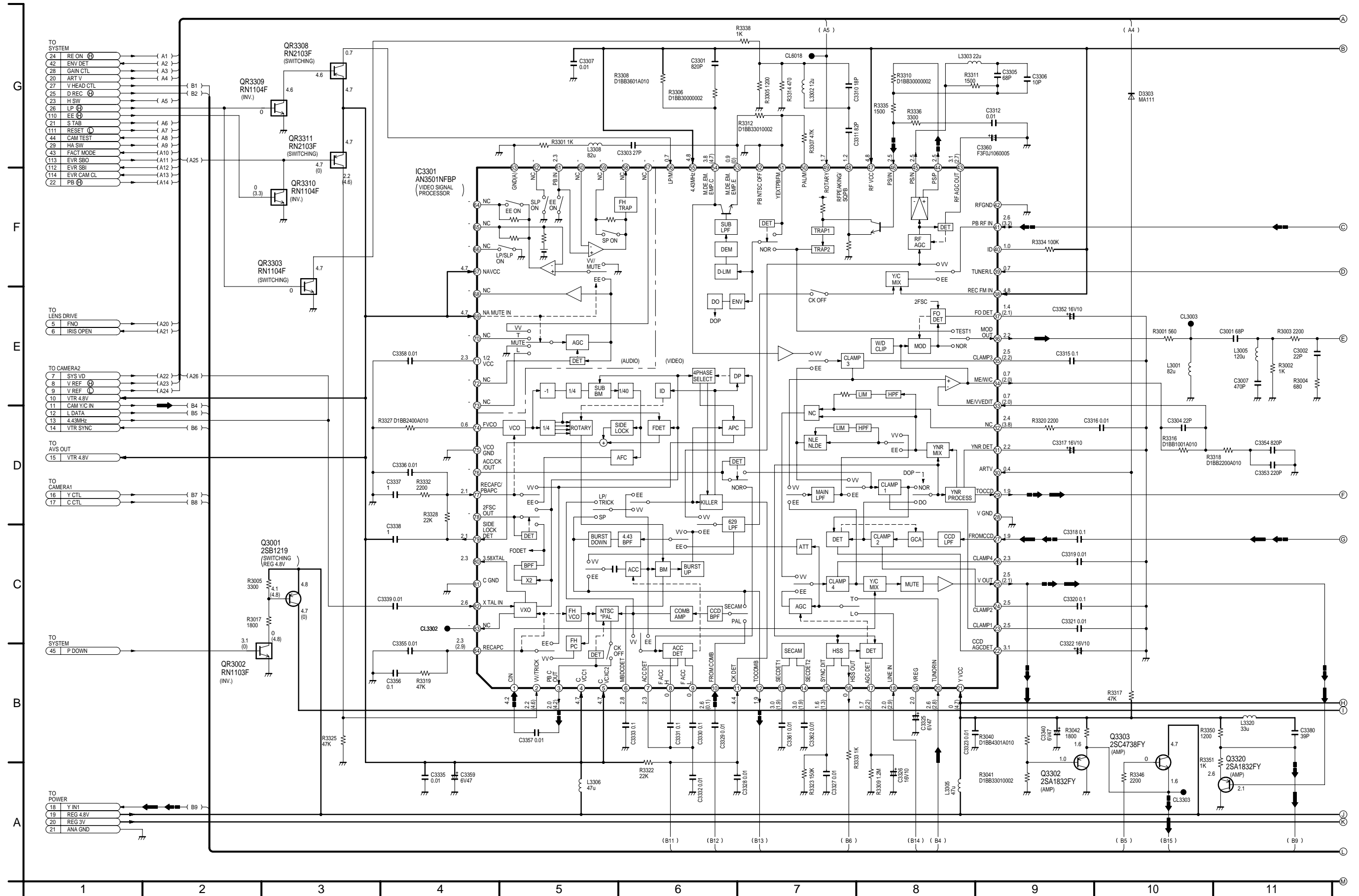
➔ :VIDEO MAIN SIGNAL PATH

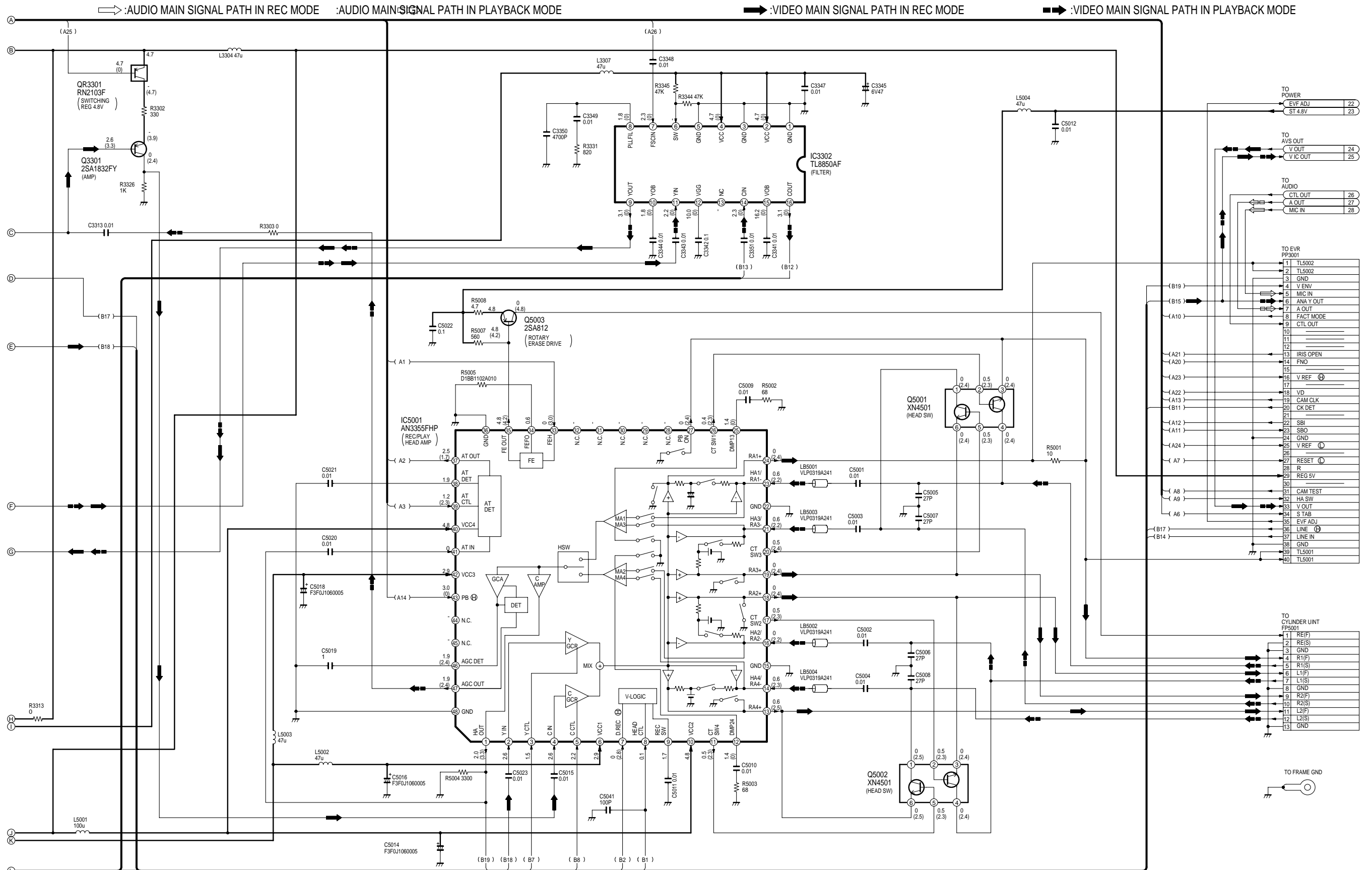
TO CAMERA1	
REG 3V	9
V REF (L)	22
PWM(B)	16
V REF (H)	21
AD Y IN	8
E2 SBT	15
E2 SBO	14
SUB	1
CH2	2
CH1	3
V4	4
V3	5
V2	6
V1	7
H2	25
H1	24
R PULSE	26
DS2	10
DS1	11
CG 3.3V	23
CPOB	13
CLV	31
FCK	12

TO VIDEO	
V REF (L)	9
V REF (H)	8
4.43MHz	13
SYS VD	7
VTR SYNC	14

TO VIDEO	
VTR 4.8V	10
CAM Y/C IN	11
L DATA	12

8.4. VIDEO SCHEMATIC DIAGRAM



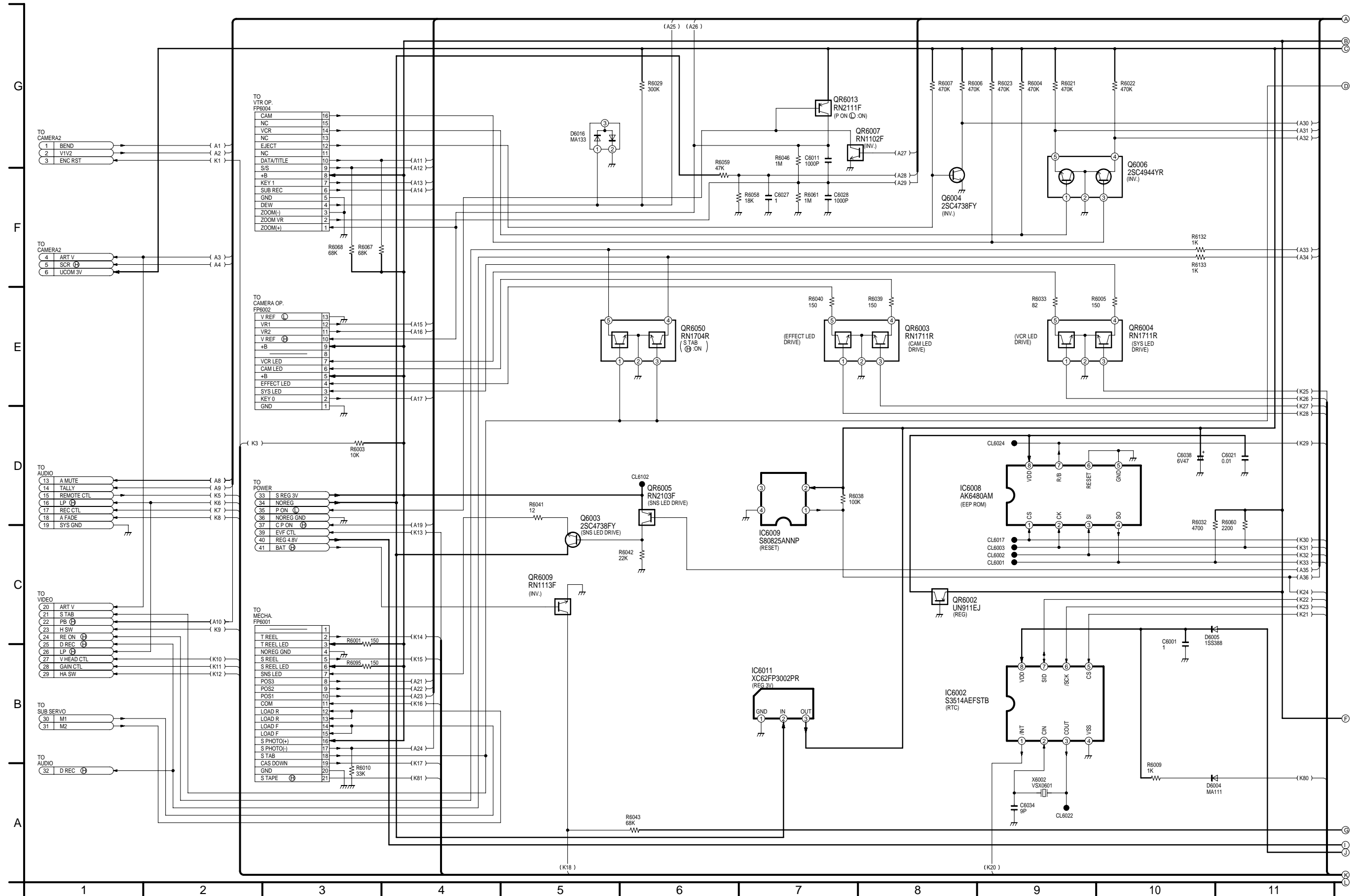


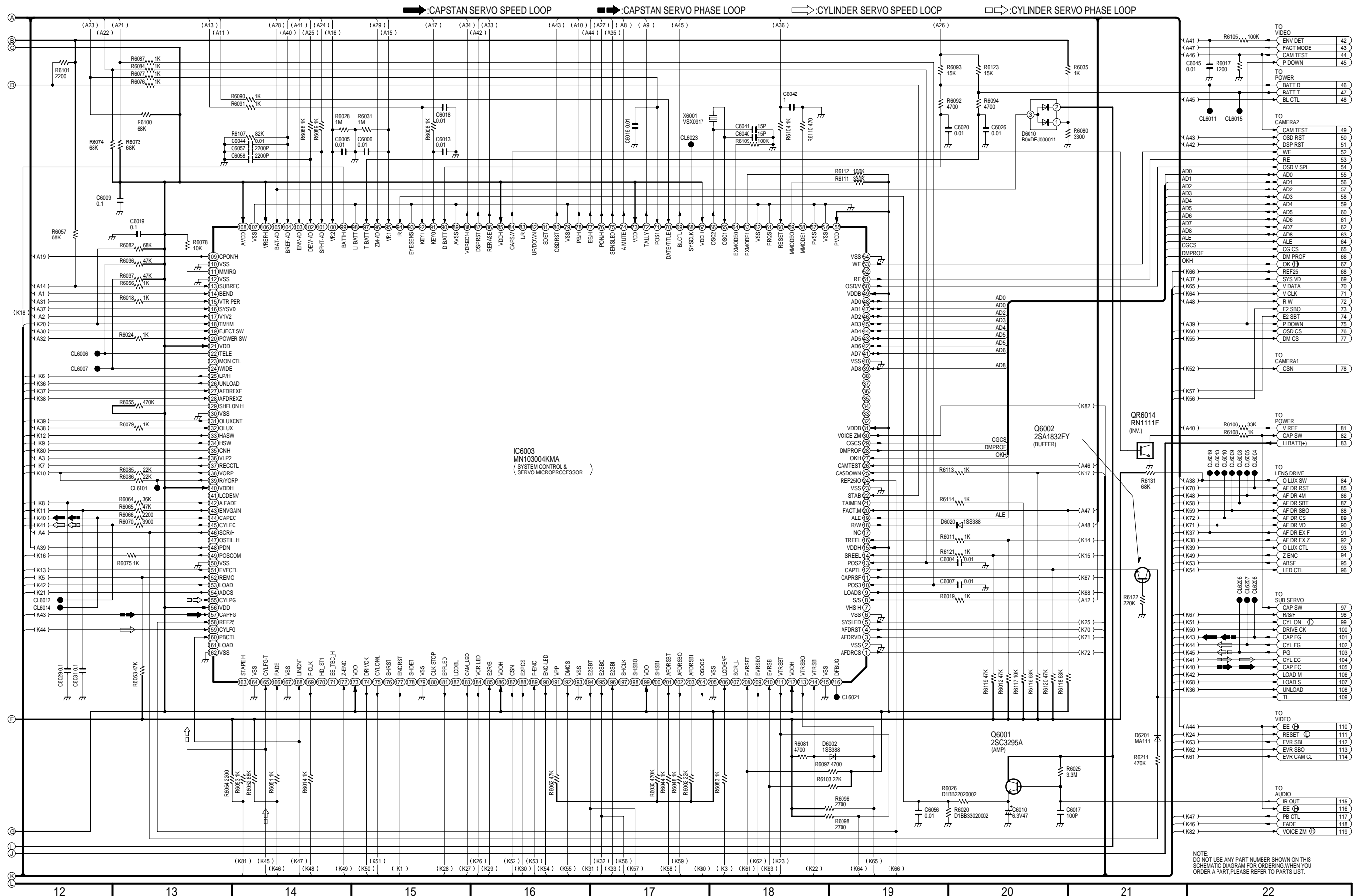
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKET () ON THIS DIAGRAM IS RECORD MODE.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKET () ON THIS DIAGRAM IS PLAYBACK MODE.

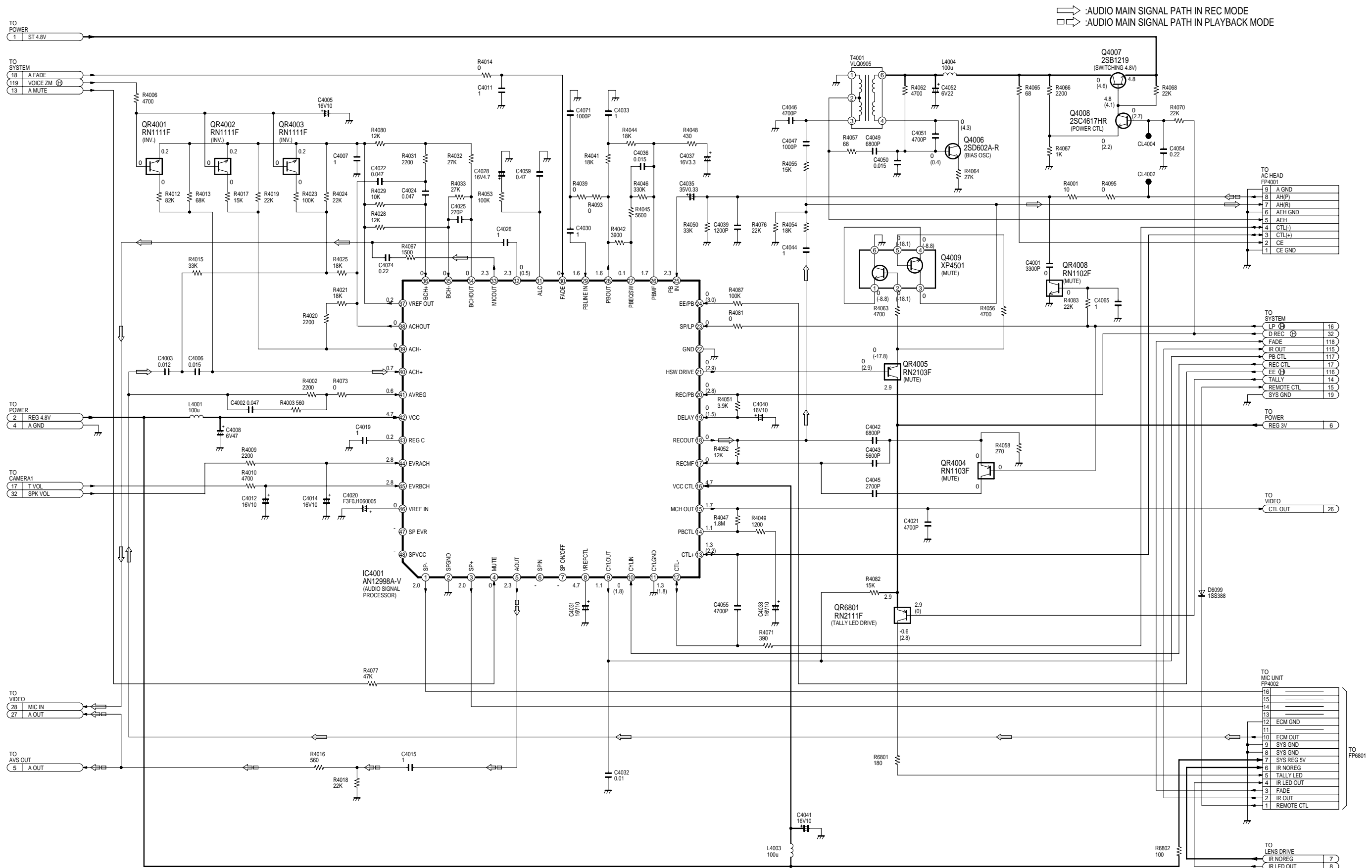
8.5. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM





NOTE:
DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

8.6. AUDIO SCHEMATIC DIAGRAM



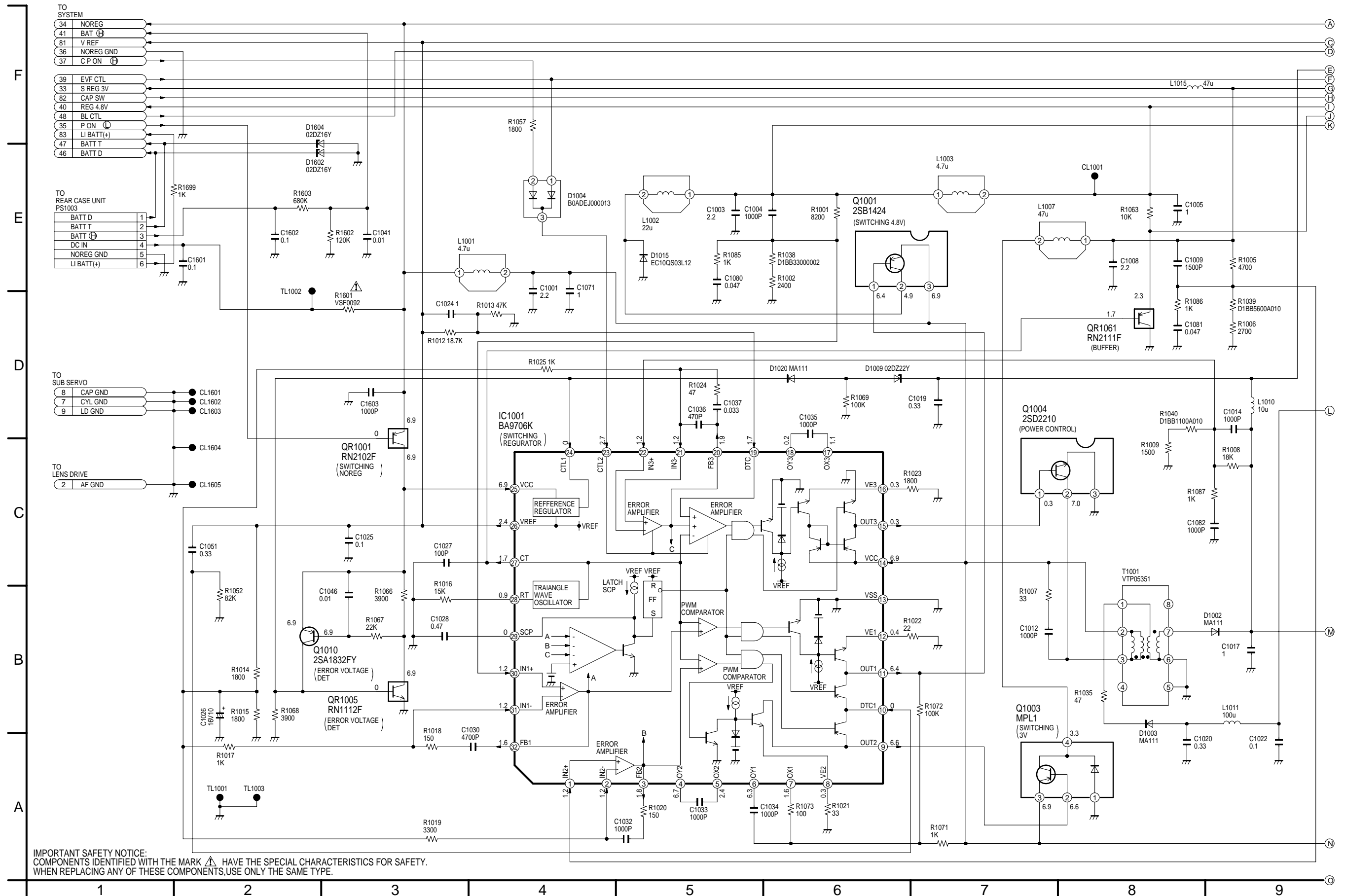
⇒ :AUDIO MAIN SIGNAL PATH IN REC MODE
 □⇒ :AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

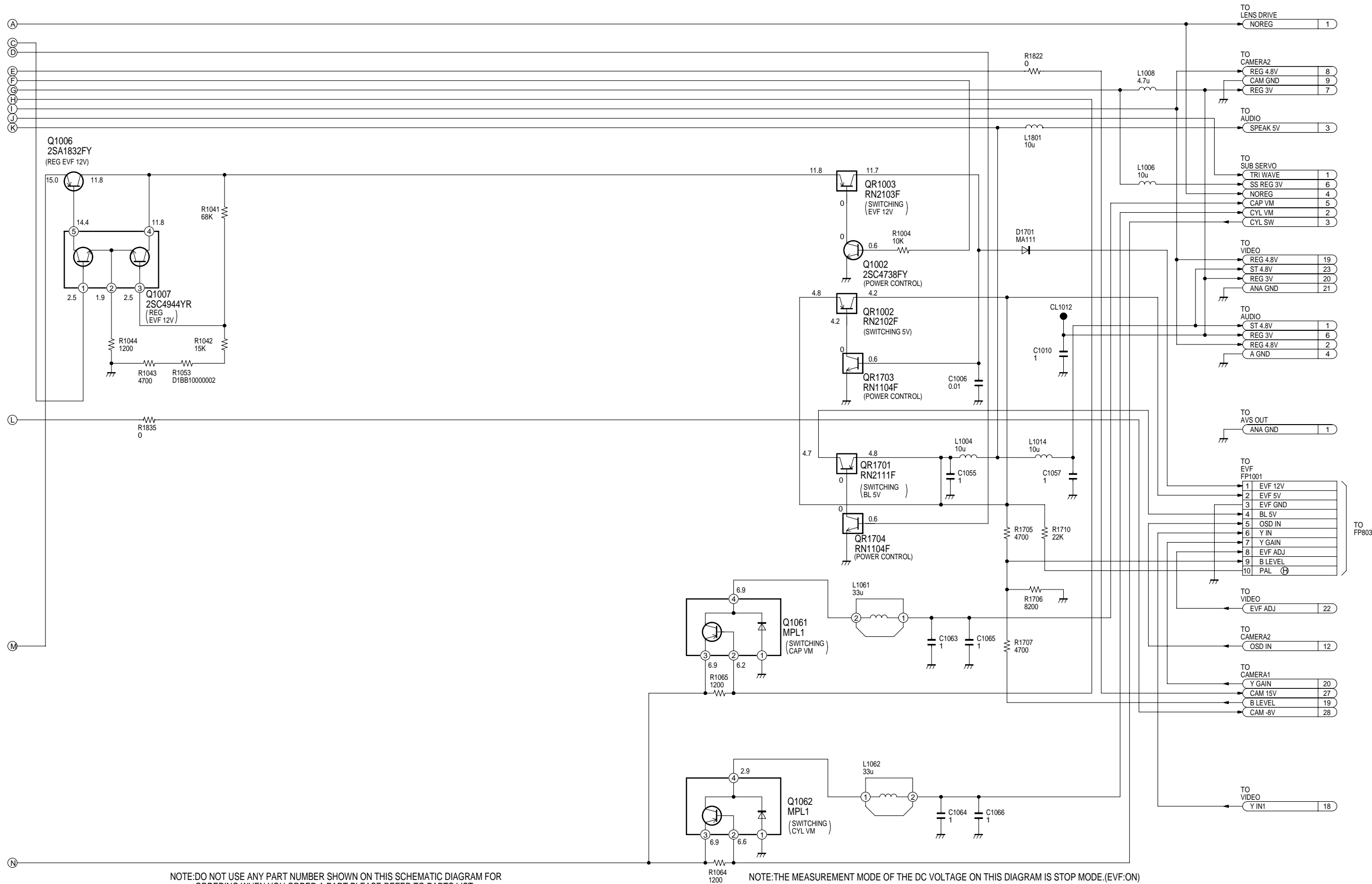
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS () ON THIS DIAGRAM IS RECORD MODE.(SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.

8.7. POWER SCHEMATIC DIAGRAM

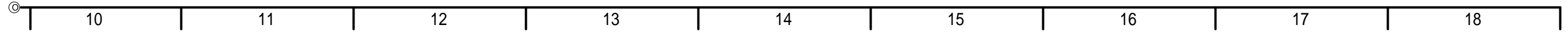


IMPORTANT SAFETY NOTICE:
 COMPONENTS IDENTIFIED WITH THE MARK  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
 WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

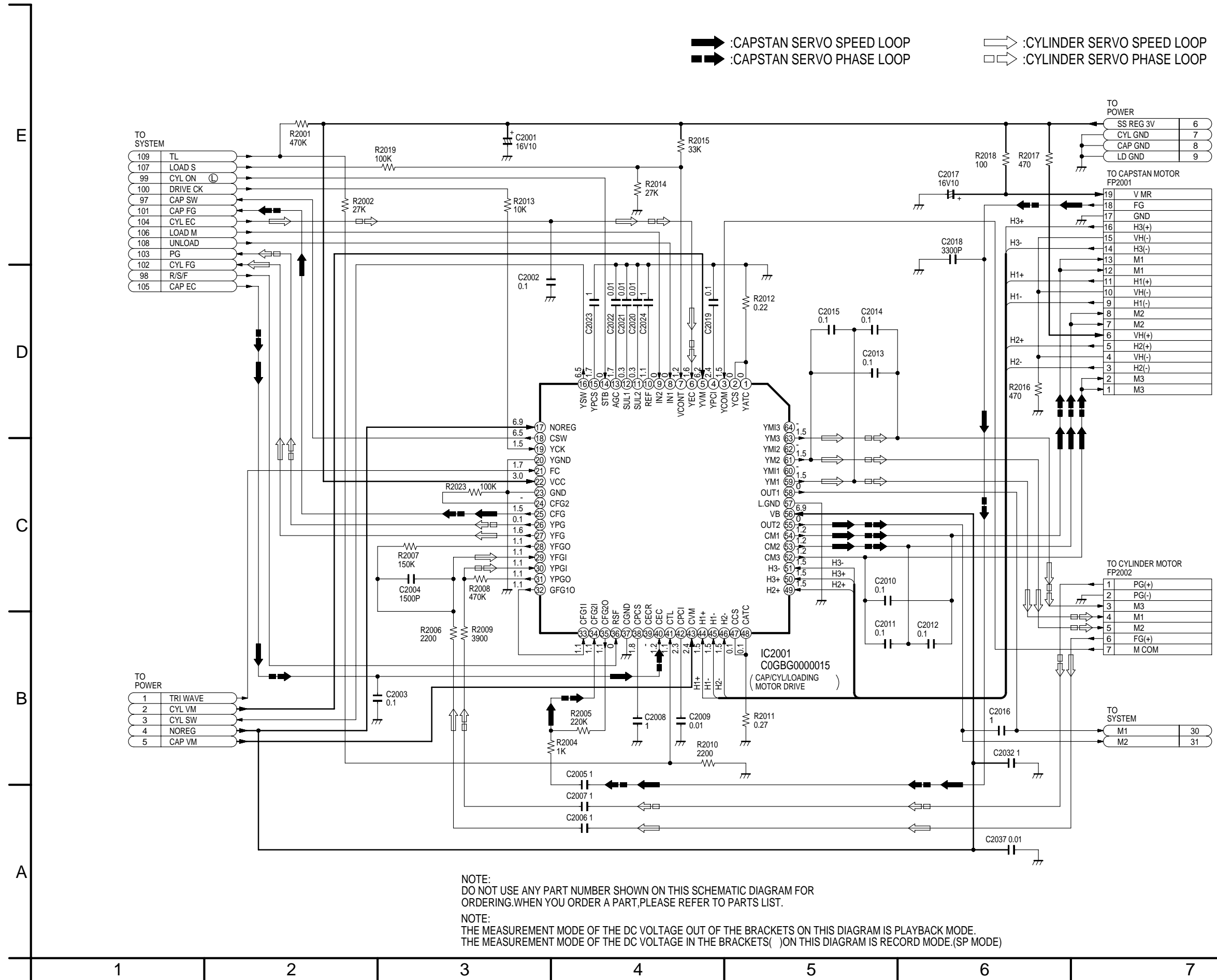


NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

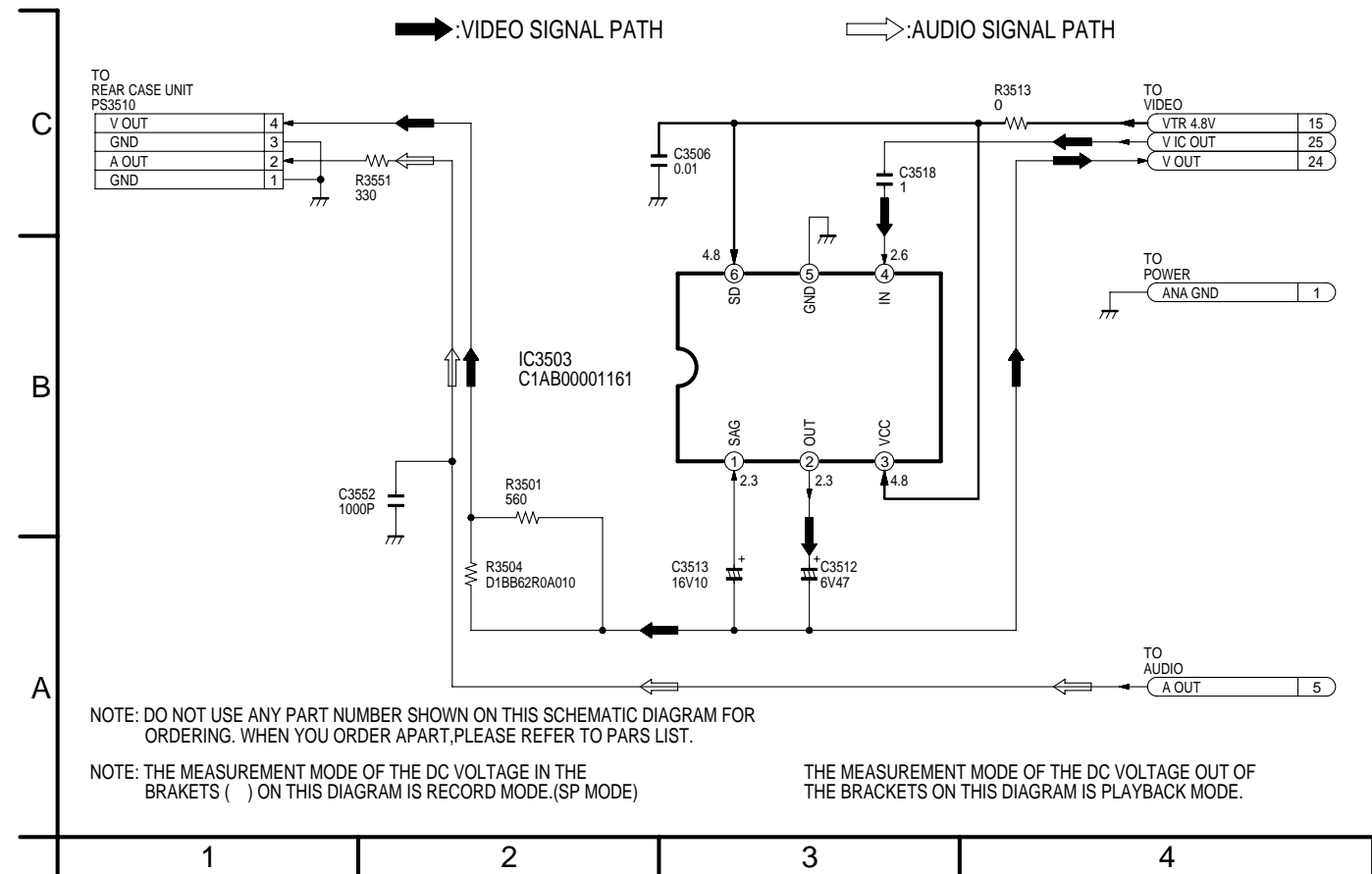
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE (EVF: ON)



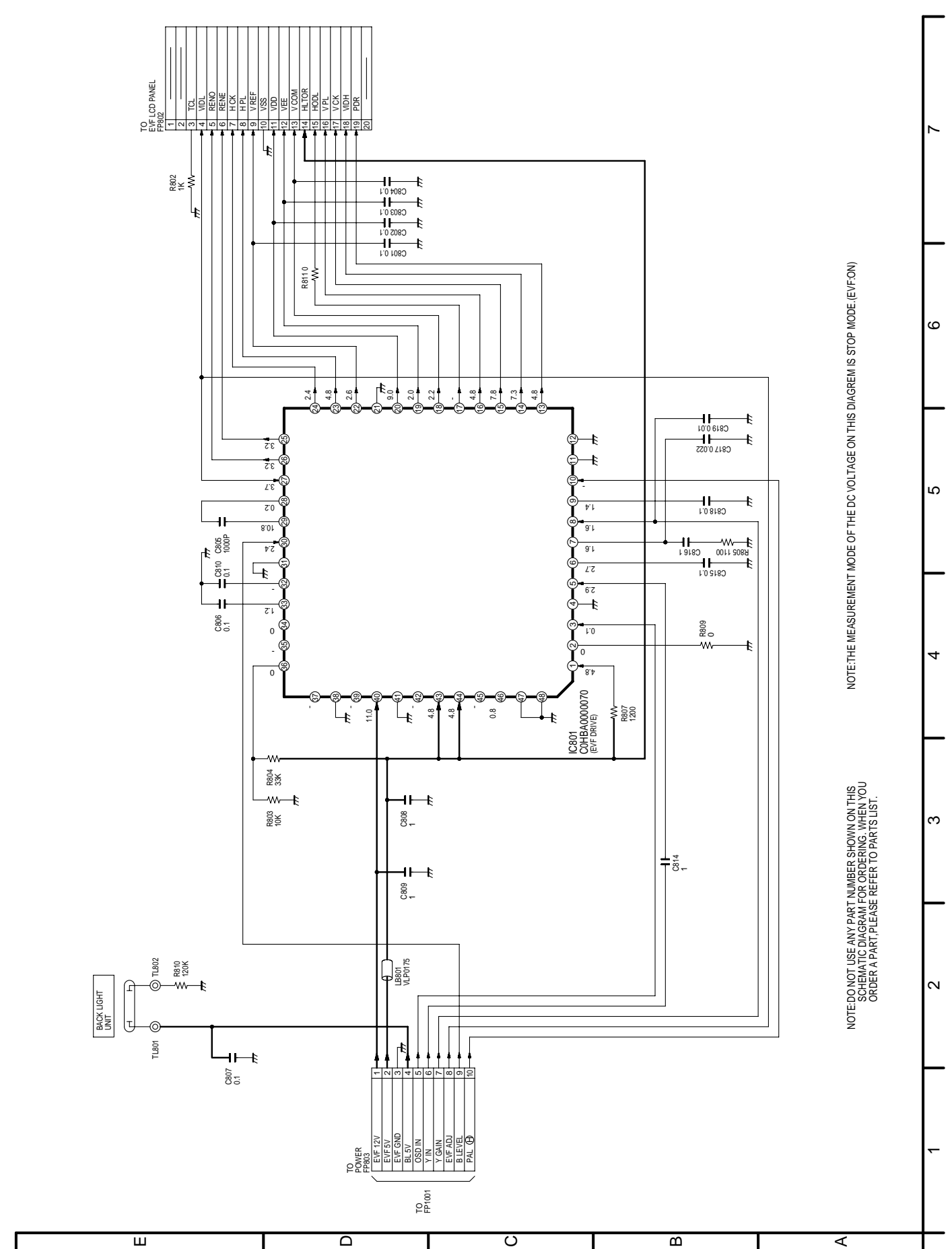
8.8. SUB SERVO SCHEMATIC DIAGRAM



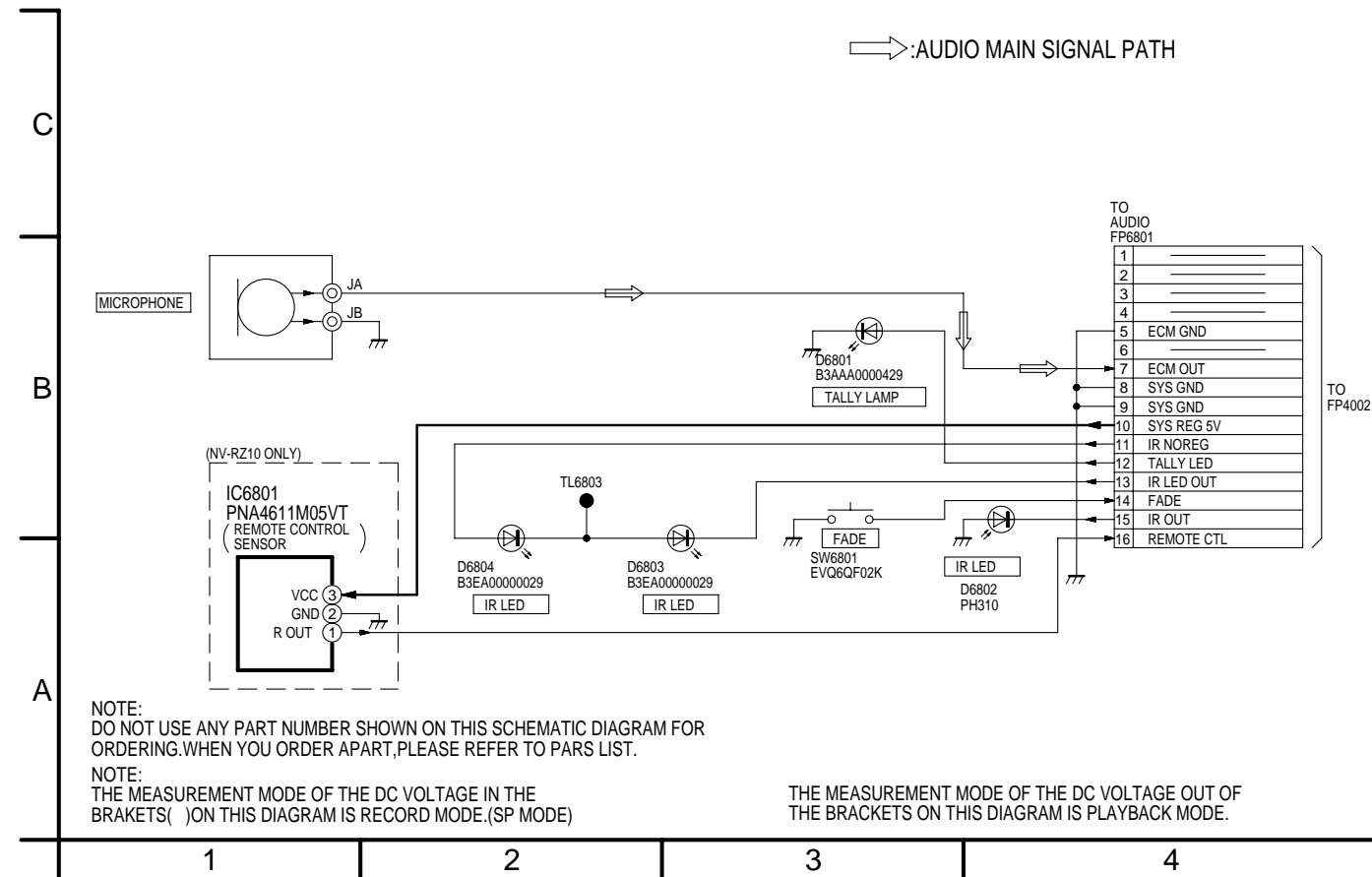
8.9. AVS OUT SCHEMATIC DIAGRAM



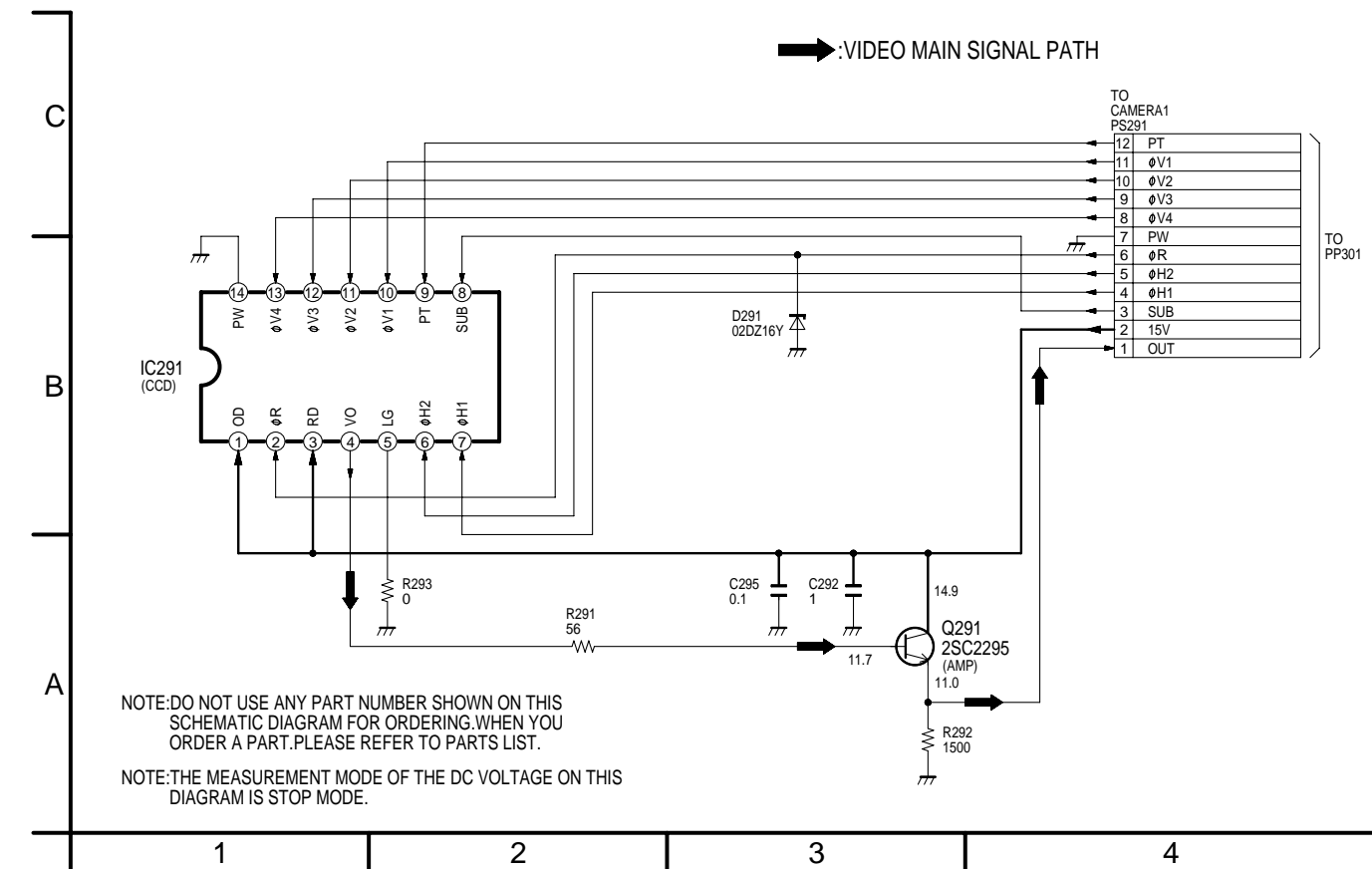
8.10. B/W-E.V.F. SCHEMATIC DIAGRAM



8.11. MIC UNIT SCHEMATIC DIAGRAM



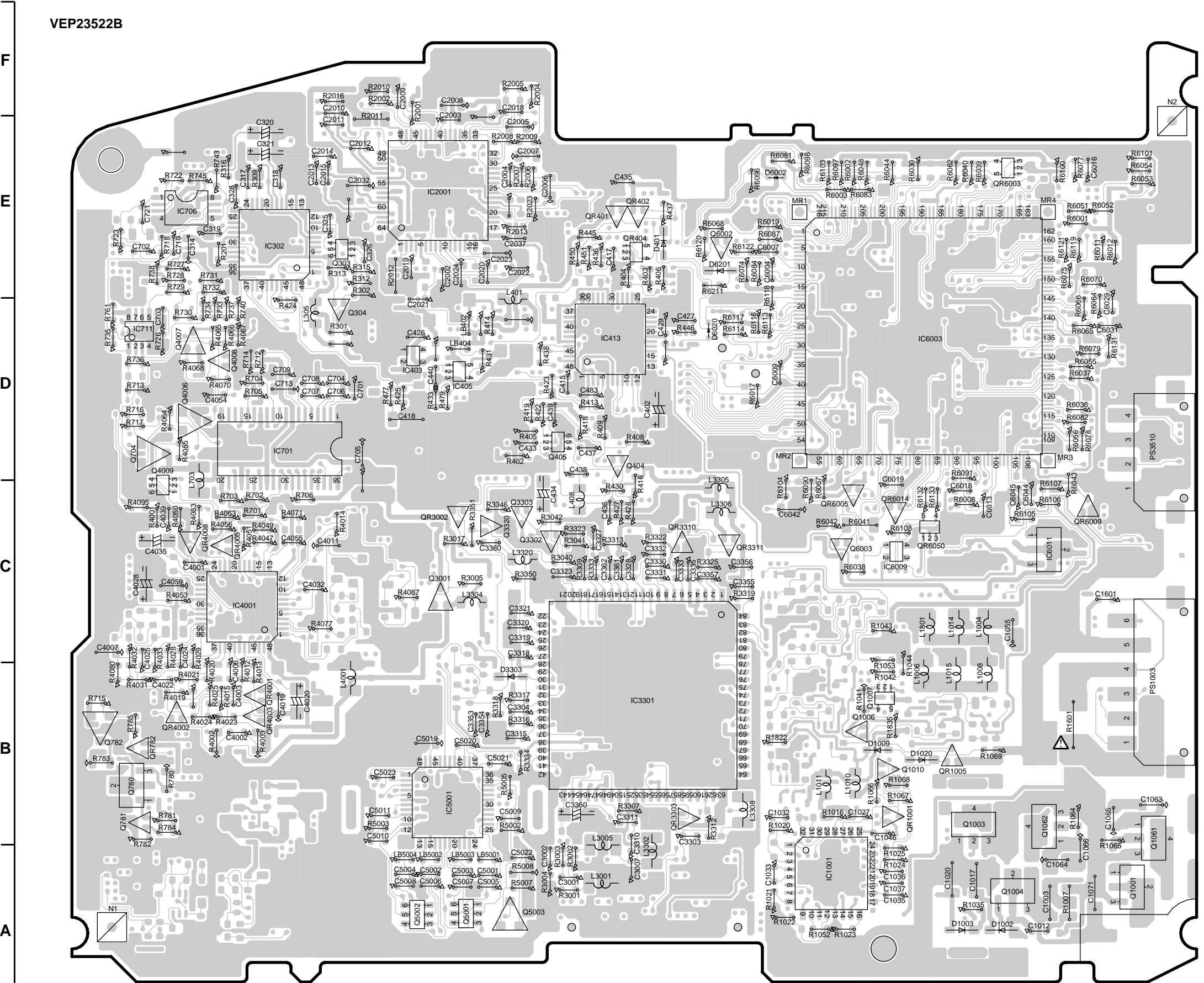
8.12. CCD FLEX. CARD SCHEMATIC DIAGRAM



9.2. MAIN C.B.A. (COMPONENT SIDE)



9.3. MAIN C.B.A. (FOIL SIDE)

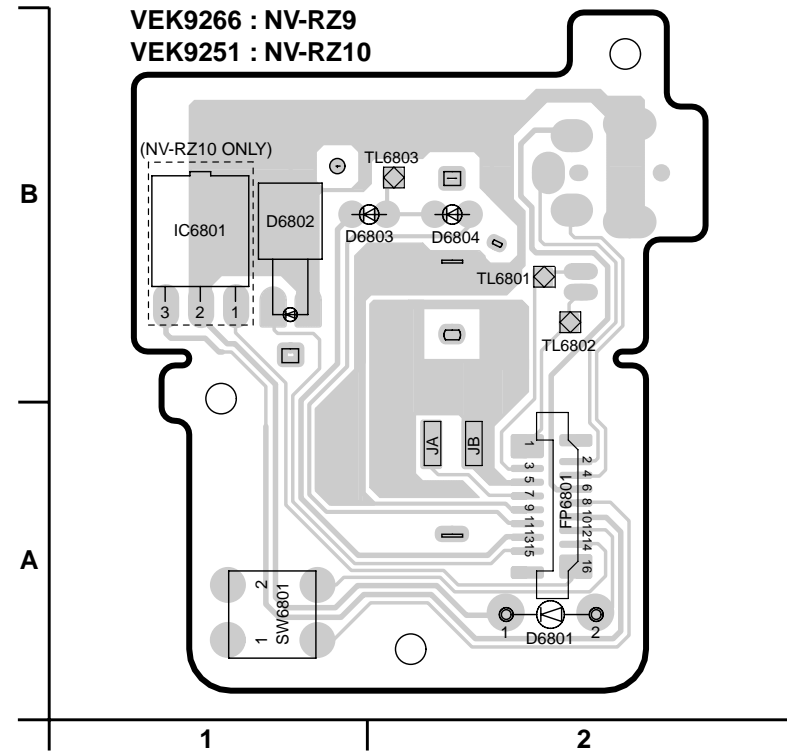


(FOIL SIDE)

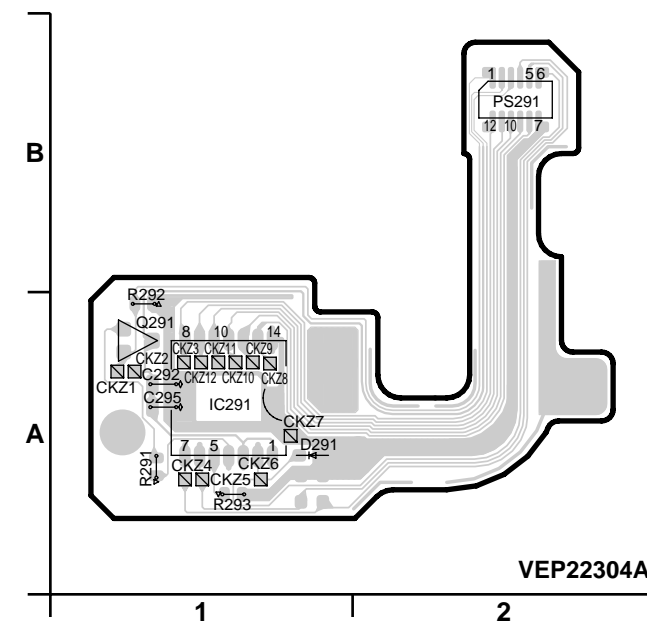
NOTE: MULTILAYER C.B.A. THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

IMPORTANT SAFETY NOTICE: COMPONENTS IDENTIFIED WITH THE MARK Δ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

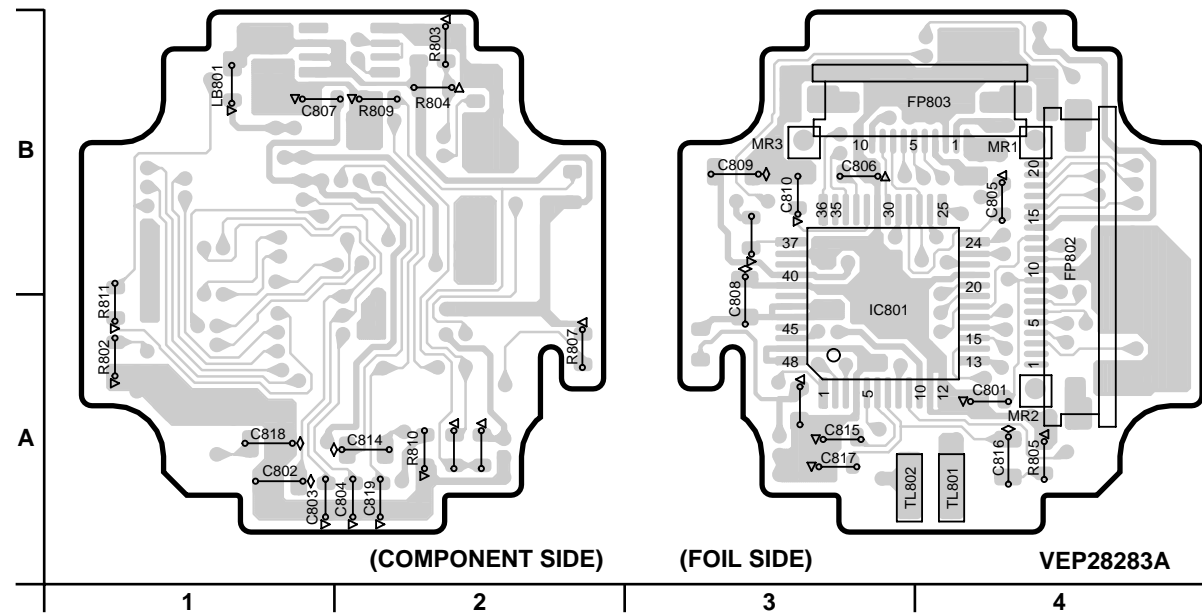
9.4. MIC UNIT



9.6. CCD FLEX. CARD C.B.A.

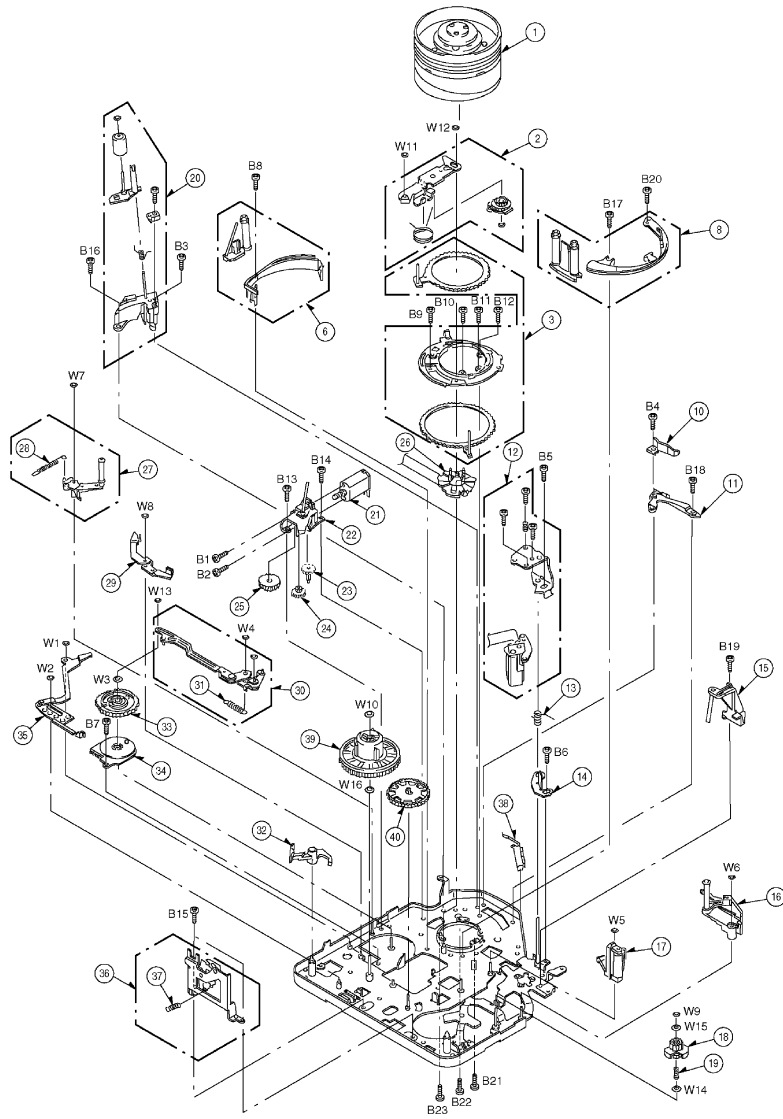


9.5. B/W-E.V.F. C.B.A.



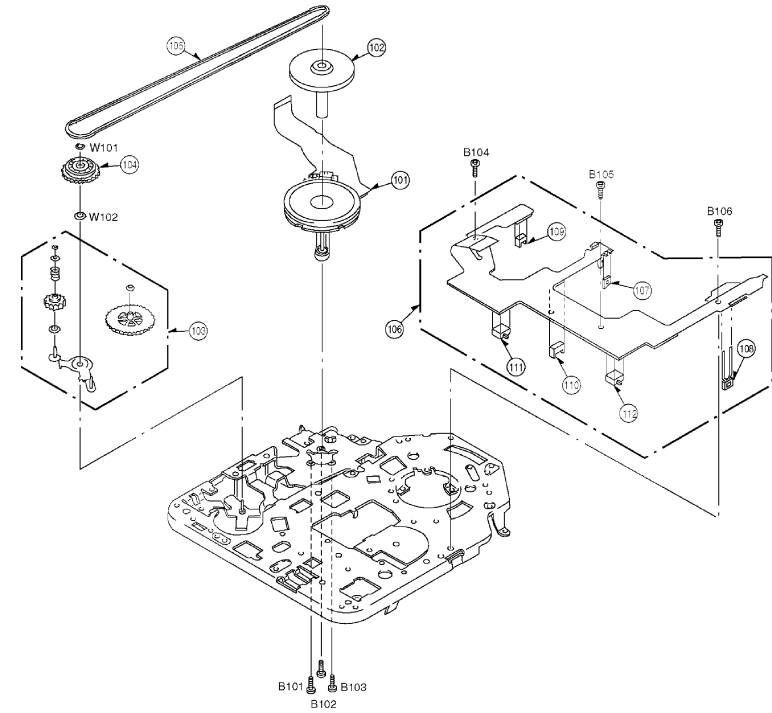
Explosionszeichnungen / Exploded Views

Laufwerk (1) / VTR Mechanism Section (1)



1

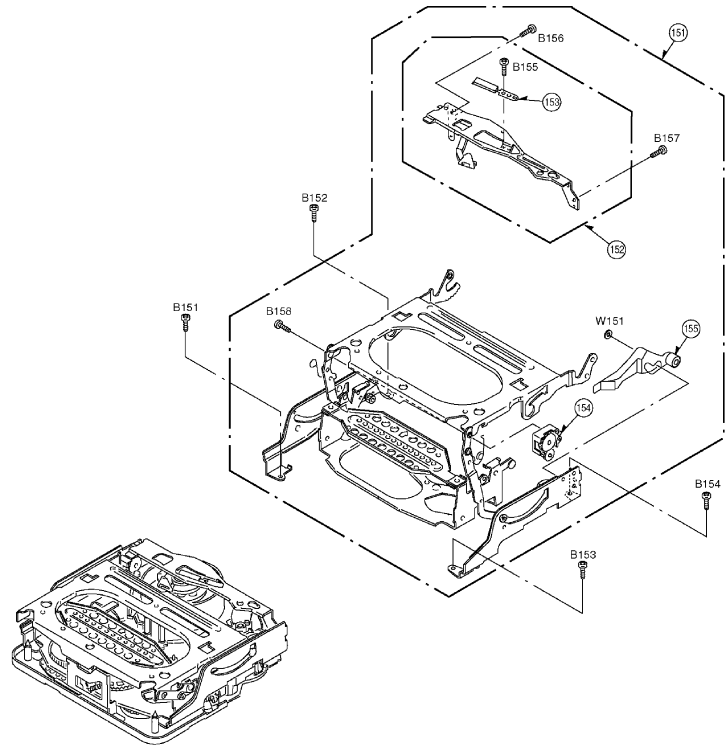
Laufwerk (2) / VTR Mechanism Section (2)



2

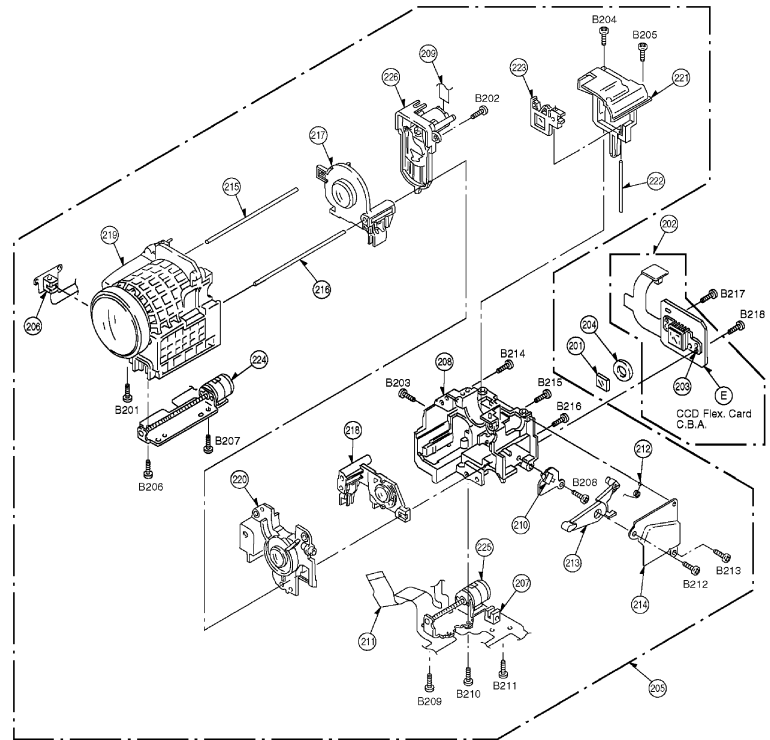
Laufwerk (3) / VTR Mechanism Section (3)

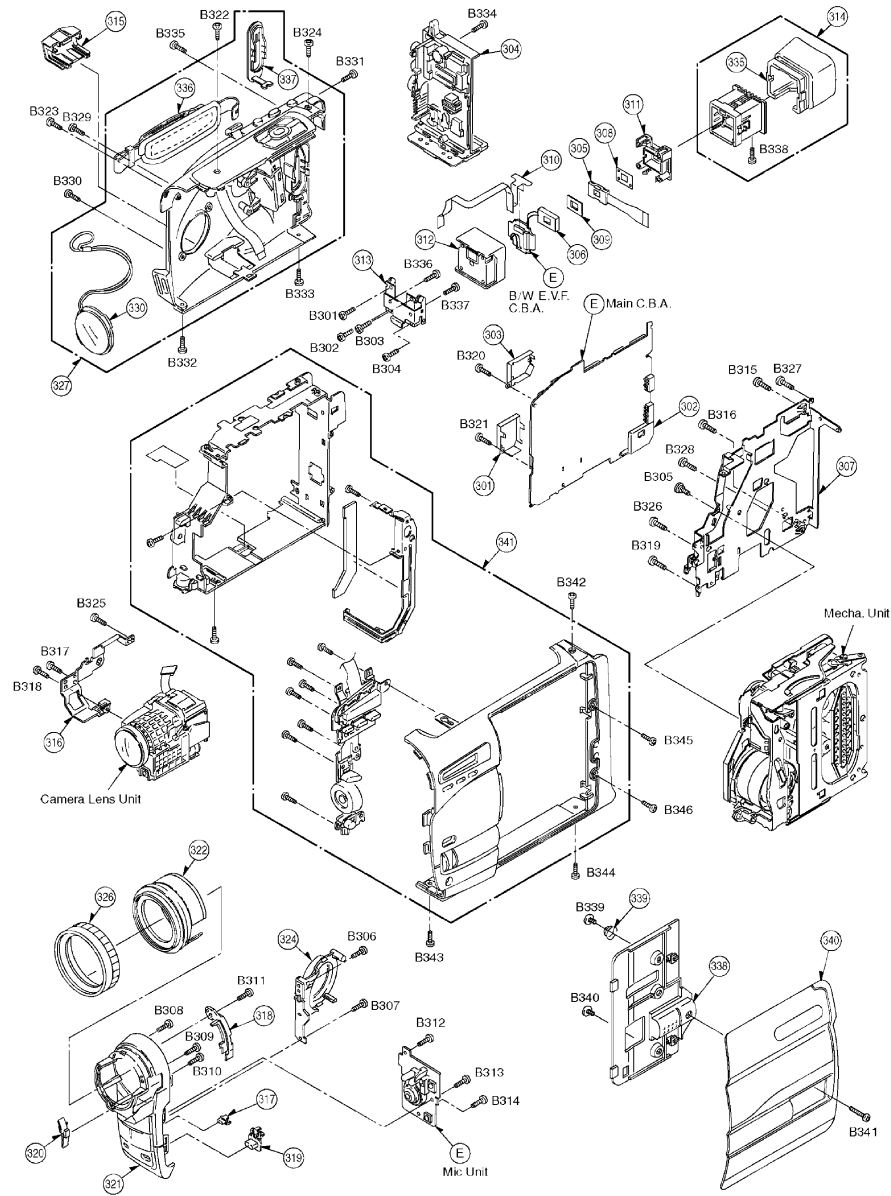
3



Optik / Camera Lens Section

4





Ersatzteilliste Spare Parts List

4 / 2001

GRUNDIG

LIVE CAM

LIVANCE LC 1100 VC

MATERIAL-NR. / PART NO.: 75869810000
BESTELL-NR. / ORDER NO.: GMI7900

POS. NR. POS. NO.	ABB. FIG.	MATERIAL-NR. PART NUMBER	ANZ. QTY.	BEZEICHNUNG (D)	DESCRIPTION (GB)
		75869810000		LIVANCE LC 1100 VC KEIN E-TEIL	LIVANCE LC 1100 VC NO SPARE PART
0001.000	1	759813761400		KOPFRAD KPL	HEAD WHEEL ASSY
0002.000	1	759813769000		DREHHEBEL	ROTARY LEVER
0003.000	1	759813769100		LADERING	LOADING RING
0006.000	1	759813769200		BANDFUEHRUNG LINKS	LEVER, TAPE TENSION
0008.000	1	759813769300		FUEHRUNGSSEGMENT RECHTS	GUIDE RAIL
0010.000	1	759813769400		STOPPER PIN RECHTS	STOPPER PIN RIGHT
0011.000	1	759813769500		T-FUEHRUNG STOPPER	T-GUIDE STOPPER
0012.000	1	759813769600		AUDIOKOPF KPL	AC HEAD UNIT
0013.000	1	759813769700		FEDER AUDIOKOPF	SPRING AC HEAD
0014.000	1	759813769800		JUSTAGEPLATTE AC	ADJ. PLATE AC
0015.000	1	759813769900		EINHEIT T4 U	UNIT T4 U
0016.000	1	759813780000		SCHWENKARM	LEVER
0017.000	1	759813780100		HEBEL ANDRUCKROLLE KPL	ARM PRESSURE ROLLER
0018.000	1	759813912300		ZAHNRAD T	DRIVE GEAR T
0019.000	1	759813780300		DREHFEDER REW	REW TORQUE SPRING
0020.000	1	759813780400		STOPPER FUEHRUNG LINKS KPL.	STOPPER GUIDE LEFT CPL.
0021.000	1	759813762100		LADEMOTOR KPL	LOADING MOTOR CPL
0022.000	1	759813780500		HALTER MOTOR	MOTOR HOLDER
0023.000	1	759813780600		ZAHNRAD A	BRAKE GEAR A
0024.000	1	759813780700		ZAHNRAD B	BRAKE GEAR B
0025.000	1	759813780800		ZAHNRAD C	BRAKE GEAR C
0026.000	1	759813400000		VERBINDER	LINK
0027.000	1	759813781000		BANDZUGHEBEL M. ZUGFEDER	BANDZUGHEBEL
0028.000	1	759813780900		ZUGFEDER	ZUGFEDER
0029.000	1	759813781100		BANDZUGHEBEL	BANDZUGHEBEL
0030.000	1	759813781200		STEUERSCHIEBER	LEVER UNIT
0031.000	1	759875873500		ZUGFEDER	ZUGFEDER
0032.000	1	759813782000		SCHALTER AUFNAHMESPERRE	SWITCH RECORD SAFETY
0033.000	1	759813781400		ZAHNRAD	CAM GEAR
0034.000	1	759813762600		FUNKTIONSWAHLSCHALTER	MODE SWITCH
0035.000	1	759813781500		AUSWURFHABEL	EJECT LEVER
0036.000	1	759813781600		VERRIEGELUNGSEINHEIT	LOCK BASE UNIT
0037.000	1	759875874300		FEDER	SPRING
0038.000	1	759813781900		FUEHRUNGSFEDER	GUIDE SPRING
0039.000	1	759813781700		WICKELTELLER S	REEL BASE S
0040.000	1	759813781800		ZAHNRAD	ZAHNRAD
B 00001	1	759813789500		SCHRAUBE XQN14+A14	SCREW XQN14+A14
B 00002	1	759813789500		SCHRAUBE XQN14+A14	SCREW XQN14+A14
B 00003	1	759813789400		SCHRAUBE VHD1319	SCREW VHD1319
B 00004	1	759813789000		SCHRAUBE VHD1320	SCREW VHD1320
B 00005	1	759813789300		SCHRAUBE VHD1337	SCREW VHD1337
B 00006	1	759813789200		SCHRAUBE VHD1338	SCREW VHD1338
B 00007	1	759813789500		SCHRAUBE XQN14+A14	SCREW XQN14+A14
B 00008	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00009	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00010	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00011	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00012	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00013	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00014	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00015	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00016	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00017	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY
B 00018	1	759813788800		SCHRAUBE XQN14+B25FY	SCREW XQN14+B25FY

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

