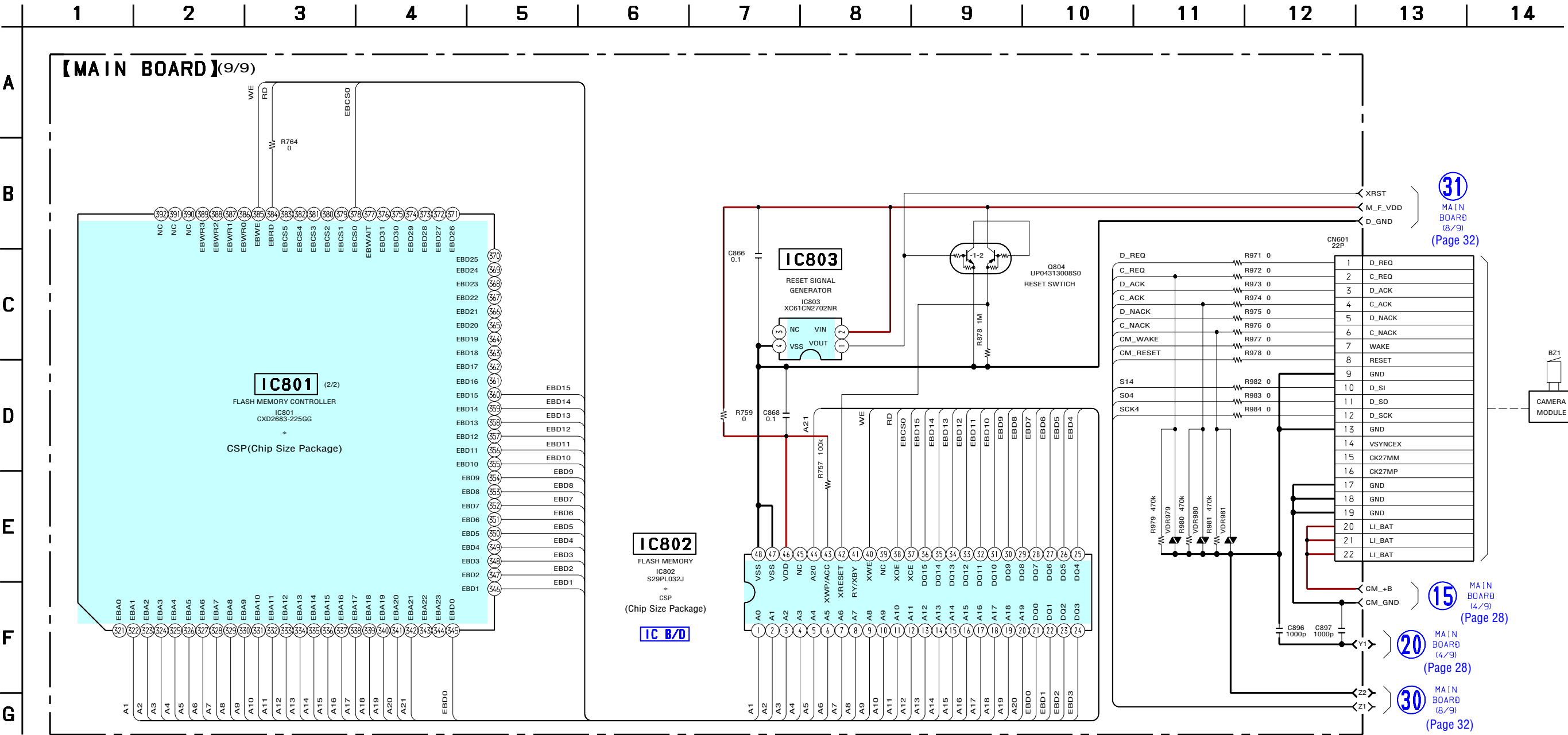


6-12. SCHEMATIC DIAGRAM – MAIN Board (9/9) – • See page 38 for IC Block Diagrams. • See page 44 for IC Pin Function Description.



• IC Pin Function Description

MAIN BOARD IC801 CXD2683-225GG (SYSTEM CONTROLLER, DSP, FLASH MEMORY CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	DVDD1_0	-	Power supply terminal (DSP logic system)
2	DVSS1_0	-	Ground terminal (DSP logic system)
3	DVDD1_1	-	Power supply terminal (DSP logic system)
4	DVSS1_1	-	Ground terminal (DSP logic system)
5	DVDD1_2	-	Power supply terminal (DSP logic system)
6	DVSS1_2	-	Ground terminal (DSP logic system)
7	DVDD1_3	-	Power supply terminal (DSP logic system)
8	DVSS1_3	-	Ground terminal (DSP logic system)
9	DVDD1_4	-	Power supply terminal (DSP logic system)
10	DVSS1_4	-	Ground terminal (DSP logic system)
11	DVDD1_5	-	Power supply terminal (DSP logic system)
12	DVSS1_5	-	Ground terminal (DSP logic system)
13	DVDD1_6	-	Power supply terminal (DSP logic system)
14	DVSS1_6	-	Ground terminal (DSP logic system)
15	DVDD1_7	-	Power supply terminal (DSP logic system)
16	DVSS1_7	-	Ground terminal (DSP logic system)
17	DVDD1_8	-	Power supply terminal (DSP logic system)
18	DVSS1_8	-	Ground terminal (DSP logic system)
19	DVDD1_9	-	Power supply terminal (DSP logic system)
20	DVSS1_9	-	Ground terminal (DSP logic system)
21	DVDD3	-	Power supply terminal (DSP logic system)
22	VSS_3	-	Ground terminal (DSP logic system)
23	DVDD1_10	-	Power supply terminal (DSP logic system)
24	DVSS1_10	-	Ground terminal (DSP logic system)
25	DVDD1_11	-	Power supply terminal (DSP logic system)
26	DVSS1_11	-	Ground terminal (DSP logic system)
27	AVDD1A	-	Power supply terminal (for PLL)
28	AVSS1A	-	Ground terminal (for PLL)
29	AVDD1B	-	Power supply terminal (for RFA of asymmetry correction cell)
30	AVSS1B	-	Ground terminal (for RFA of asymmetry correction cell)
31	AVDD1C	-	Power supply terminal (for ASYO of asymmetry correction cell)
32	AVDD2	-	Power supply terminal (for A/D converter)
33	DVDD25SVADC	-	Power supply terminal (for A/D converter)
34	AVSS2	-	Ground terminal (for A/D converter)
35	AVDD3	-	Power supply terminal (for A/D converter)
36	AVSS3	-	Ground terminal (for A/D converter)
37	AVDD4A	-	Power supply terminal (for PLL)
38	AVSS4A	-	Ground terminal (for PLL)
39	AVDD4B	-	Power supply terminal (for PLL)
40	AVSS4B	-	Ground terminal (for PLL)
41	AVDD4C	-	Power supply terminal (for D/A converter)
42	AVSS4C	-	Ground terminal (for D/A converter)
43	AVDD5	-	Power supply terminal (for PLL)
44	AVSS5	-	Ground terminal (for PLL)
45	AVDD6	-	Power supply terminal (for A/D converter)
46	AVSS6	-	Ground terminal (for A/D converter)

Pin No.	Pin Name	I/O	Description
47	DAVDD	-	Power supply terminal (for D/A converter)
48	DVDD25LPF	-	Power supply terminal (for D/A converter)
49	DAVSS	-	Ground terminal (for D/A converter)
50	OSCVDD	-	Power supply terminal (for 22.5792 MHz OSC)
51	USBOSCVDD	-	Power supply terminal (for the USB 48 MHz OSC)
52	TSMVDD	-	Power supply terminal (for the TSB master communication)
53	MAIFVDD	-	Power supply terminal (for MA interface)
54	MSJTAGVDD	-	Power supply terminal (for MS interface and JTAG)
55	USBIFVDD	-	Power supply terminal (for USB interface)
56 to 58	VSS_0 to VSS_2	-	Power supply terminal (for 22.5792 MHz OSC, USB 48 MHz OSC, TSB master communication, MS interface, MA interface, JTAG and USB interface)
59 to 62	IFVDD_1 to IFVDD_4	-	Power supply terminal (for interface)
63, 64	IFVSS_1, IFVSS_2	-	Ground terminal (for interface)
65 to 69	DRAMVDD0 to DRAMVDD4	-	Power supply terminal (for D-RAM/DSP interface)
70 to 72	DRAMVSS0 to DRAMVSS2	-	Ground terminal (for D-RAM/DSP interface)
73	FCRAMVDD0	-	Power supply terminal (for D-RAM)
74	FCRAMVSS0	-	Ground terminal (for D-RAM)
75	FCRAMVDD1	-	Power supply terminal (for D-RAM)
76	FCRAMVSS1	-	Ground terminal (for D-RAM)
77	FVDD0	-	Power supply terminal (for flash memory)
78	FVSS0	-	Ground terminal (for flash memory)
79	SRAMVDD0	-	Power supply terminal (for S-RAM)
80	SRAMVSS0	-	Ground terminal (for S-RAM)
81	SRAMVDD1	-	Power supply terminal (for S-RAM)
82	SRAMVSS1	-	Ground terminal (for S-RAM)
83	EBIFVDD0	-	Power supply terminal (for external flash memory bus interface)
84	EBIFVSS0	-	Ground terminal (for external flash memory bus interface)
85	EBIFVDD1	-	Power supply terminal (for external flash memory bus interface)
86	EBIFVSS1	-	Ground terminal (for external flash memory bus interface)
87	EBIFVDD2	-	Power supply terminal (for external flash memory bus interface)
88	EBIFVSS2	-	Ground terminal (for external flash memory bus interface)
89	EBIFVDD3	-	Power supply terminal (for external flash memory bus interface)
90	EBIFVSS3	-	Ground terminal (for external flash memory bus interface)
91	EBIFVDD4	-	Power supply terminal (for external flash memory bus interface)
92	EBIFVSS4	-	Ground terminal (for external flash memory bus interface)
93	EBIFVDD5	-	Power supply terminal (for external flash memory bus interface)
94	EBIFVSS5	-	Ground terminal (for external flash memory bus interface)
95	EBIFVDD6	-	Power supply terminal (for external flash memory bus interface)
96	EBIFVSS6	-	Ground terminal (for external flash memory bus interface)
97	EBIFVDD7	-	Power supply terminal (for external flash memory bus interface)
98	EBIFVSS7	-	Ground terminal (for external flash memory bus interface)
99	ASYO	O	Playback EFM duplex signal output terminal
100	ASYI	I	Playback EFM comparator slice level input terminal
101	RFI	I	Playback EFM RF signal input from the RF amplifier
102	PCO	O	Phase comparison output terminal for the playback EFM system master PLL

Pin No.	Pin Name	I/O	Description
103	FILI	I	Filter input terminal for the playback EFM system master PLL
104	FILO	O	Filter output terminal for the playback EFM system master PLL
105	CLTV	I	Internal VCO control voltage input terminal for the playback EFM system master PLL
106	PEAK	I	Peak hold signal input of the light amount signal (RF/ABCD) the RF amplifier
107	BOTM	I	Bottom hold signal input of the light amount signal (RF/ABCD) the RF amplifier
108	ABCD	I	Light amount signal (ABCD) input from the RF amplifier
109	FE	I	Focus error signal input from the RF amplifier
110	VC	I	Middle point voltage input from the RF amplifier
111	ADIO	O	Monitor output terminal of A/D converter input signal Not used
112	ADRB	I	A/D converter the lower limit voltage input terminal
113	SE	I	Sled error signal input from the RF amplifier
114	TE	I	Tracking error signal input from the RF amplifier
115	AUX1	I	Auxiliary A/D input terminal
116	ADRT	I	The upper limit voltage of A/D converter input terminal
117	DCHG	-	Connecting terminal with the analog power supply of low impedance
118	APC	I	Error signal input terminal for the laser automatic power control
119	ADC1EXTC	-	Connection terminal for an external capacitor
120	TEMP_MON	I	Thermistor connection terminal for temperature detection
121	VB_MON	I	Detection terminal of rechargeable battery power supply voltage (UNREG)
122	CHG_MON	I	Charge or discharge current monitor input from power control IC
123	VREF_MON	I	Reference voltage monitor input from the RF amplifier
124, 125	SET_KEY_1, SET_KEY_2	I	Set key input terminal (A/D input)
126	STAND_DET	I	Monitor input terminal of DC input voltage for battery charge Not used
127	HIDC_MON	I	Monitor input terminal of High DC voltage
128	XSTILL	I	Detection terminal of panel key input for camera wake up
129	VBUS_MON	I	Monitor input terminal of USB power supply voltage (VBUS)
130	BATT_MINUS _MON	I	Monitor input terminal of rechargeable battery minus terminal voltage
131	RMC_KEY	I	Remote commander key input terminal (A/D input)
132	XSTILL_PLAY	I	Lens cover detection switch input terminal
133	REC_KEY/ DOWNLOAD	I	DOWNLOAD key input terminal
134	RADIO_ON	I	Radio on detection input terminal Not used
135	HALF_LOCK_SW	I	Top panel open switch detection terminal
136	XRST	I	System reset signal input terminal
137	PLL2EXTCI	I	Connection terminal for an external capacitor
138	PLL2EXTCO	O	Connection terminal for an external capacitor
139	PLL3EXTCI	I	Connection terminal for an external capacitor
140	PLL3EXTCO	O	Connection terminal for an external capacitor
141	DACVREFH	I	Reference voltage input terminal
142	APCREF_DA	O	Reference voltage output to the RF amplifier
143	ADC3VREFH	I	Reference voltage input terminal
144	ADC3EXTC	-	Connection terminal for an external capacitor (for A/D converter)
145	VIN	I	RF signal input from the RF amplifier
146	VREFL	I	Reference voltage input terminal (for internal D/A converter L-CH) Not used
147	AOUTL	O	Internal D/A converter (L-CH) output terminal Not used
148	AOUTR	O	Internal D/A converter (R-CH) output terminal Not used

Pin No.	Pin Name	I/O	Description
149	VREFR	I	Reference voltage input terminal (for internal D/A converter R-CH) Not used
150	DCLSOUTR	O	PWM modulator signal output to the headphone amplifier (R-CH)
151	DCLSOUTL	O	PWM modulator signal output to the headphone amplifier (L-CH)
152	RTCK	O	Not used
153	ADFG	I	ADIP duplex FM signal (21.05kHz to 23.05 kHz) input from the RF amplifier
154	TRDR	O	Tracking servo drive PWM signal output (-) to the coil driver
155	TFDR	O	Tracking servo drive PWM signal output (+) to the coil driver
156	FFDR	O	Focus servo drive PWM signal output (+) to the coil driver
157	FRDR	O	Focus servo drive PWM signal output (-) to the coil driver
158	FS4	O	176.4 kHz clock signal output to the over write head driver and power control IC
159	SFDR	O	Sled servo drive PWM signal output to the motor driver
160	SPDU	O	Spindle motor drive control signal output (U) to the motor driver
161	SPFD	O	Spindle servo drive PWM signal output to the motor driver
162	SPDV	O	Spindle motor drive control signal output (V) to the motor driver
163	SPDW	O	Spindle motor drive control signal output (W) to the motor driver
164	SPCU	I	Spindle motor drive comparison signal input (U) from the motor driver
165	SPCV	I	Spindle motor drive comparison signal input (V) from the motor driver
166	SPCW	I	Spindle motor drive comparison signal input (W) from the motor driver
167	SLDV	O	Sled motor drive control signal output (V) to the motor driver
168	SLDW	O	Sled motor drive control signal output (W) to the motor driver
169	SLCU	I	Sled motor drive comparison signal input (U) from the motor driver
170	SLCV	I	Sled motor drive comparison signal input (V) from the motor driver
171	SLCW	I	Sled motor drive comparison signal input (W) from the motor driver
172	SLDU	O	Sled motor drive control signal output (U) to the motor driver
173	DIN	I	Digital audio signal input terminal Not used
174	FS256_OUT	O	11.2896 MHz clock output to the RF amplifier
175	CHOPPERCLK	O	Clock signal output for chopper to the over write head driver
176 to 179	MNT0 to MNT3	O	Monitor output terminal for DSP Not used
180	OFTRK	I/O	Tracking signal input/output for MD3 with the RF amplifier
181	RECP	O	Laser power selection signal output to the power control IC
182	EFMO	O	EFM encode data output for the recording to the over write head driver
183	HI_Z_SPDL	O	Standby signal output for the spindle motor to the motor driver
184	PROTECT	I	Recording protector for normal disc detection switch input terminal
185	OPT_DET	I	Optical digital input plug detection signal input terminal "H": optical in Not used
186	XJACK_DET	I	Line input plug detection signal input terminal "L": plug in Not used
187	XMIC_DET	I	Microphone input plug detection signal input terminal "L": plug in Not used
188	OPEN_CLOSE_SW	I	Top panel open/close detection switch input terminal
189	XCS_ADC	O	Chip select signal output to the A/D converter Not used
190	XPD_ADC	O	Power control signal output to the A/D converter Not used
191	NC	-	Not used
192	XRST_LCD	O	LCD reset signal output terminal Not used
193	USB_WAKE	O	System wake up signal output terminal by USB connection
194	A7CAL_SW	O	A7 offset voltage CAL on/off control signal output to the charge control IC
195	SI0	I	Serial data input from the real time clock and EEPROM
196	SO0	O	Serial data output to the real time clock, EEPROM and power control IC
197	SCK0	O	Serial data transfer clock signal output to the real time clock, EEPROM and power control IC
198	XGUM_ON	I	Rechargeable battery insert detection switch input terminal

Pin No.	Pin Name	I/O	Description
199	BEEP	O	Beep sound control signal output to the headphone amplifier
200	XOPT_CTL	O	Power supply on/off control signal output terminal for the optical input jack Not used
201	EX_BUS_CONT	I	External bus control signal input terminal Not used
202	XRST2	I	Reset signal input from the power control IC
203	REC_LED	O	Recording indication LED drive signal output terminal
204	MDVCC_CTL	O	Power supply control signal output terminal for the optical pick-up block
205	VBUS_VB_CTL	O	USB power supply control signal output terminal Not used
206	D_ENVG	O	Power on/off control signal output terminal for headphone amplifier
207	DRAM_ALONE	O	Power on/off control signal output terminal for internal D-RAM
208	XRST_CHG_IC	O	Reset signal output to the charge control IC
209, 210	PD_S0, PD_S1	O	PD IC mode selection signal output to the optical pick-up block
211	D_ENREG	O	Internal power supply on/off control signal output to the headphone amplifier
212	XMUTE/MUTE	O	Muting on/off control signal output terminal
213	SI1	I	Serial data input terminal Not used
214	XNV_WP_CTL	O	Write protect signal output to the EEPROM Not used
215	SCK1	O	Serial data transfer clock signal output terminal Not used
216	SLD_MON	I	Monitor signal input terminal of sled servo
217	AOUT_SEL	O	Headphone/line output selection signal output terminal Not used
218	SLEEP	O	Chip enable signal output to the power control IC
219	FFCLR	O	Power supply on/off control signal output terminal for FCRAM (internal RAM)
220	CHGI_CTL1	O	Charge current limiter control signal output terminal at the time of AC adapter use "L": charging
221, 222	CHGI_CTL2, CHGI_CTL3	O	Charge current control signal output terminal "H": low current charge
223	HI_Z_SLD	O	Standby signal output for the sled motor to the motor driver
224	XTEST	I	Input terminal for the test mode setting "L": test mode
225	XRF_RST	O	Reset signal output to the RF amplifier
226	XEXT_PWR	O	Not used
227	XHOLD_SW	I	HOLD switch input terminal
228, 229	D_EN1, D_EN2	O	Headphone/LINE/beep selection signal output to the headphone amplifier
230	CHGI_SEL	O	Charge/discharge control signal output for current detection amplifier to the charge control IC
231	RECP_MON	I	Monitor input terminal for laser power selection signal output
232	SPDL_MON	I	Monitor signal input terminal of spindle servo
233	XCS_PWR_IC	O	Chip select signal output to the power control IC
234	RXD	I	Reception data input terminal Not used
235	TXD	O	Transmission data output terminal Not used
236	XCS_LCD	O	LCD drive chip select signal output terminal Not used
237	NI_VI_CTL	O	Constant current circuit control signal output to the charge control IC
238	XRST_MTR_DRV	O	Reset signal output to the motor driver
239	XCS_NV	O	Chip select signal output to the EEPROM
240	CHG_PWM	O	Charge current or voltage control signal output to the charge control IC
241	CHG_IAMP_CAL	O	Offset signal output for current detection amplifier charge control IC
242	RST_CONT	O	Reset signal output to the power control IC
243	D_VCONT_PWM	O	For voltage control signal output to the headphone amplifier
244	CHG_OPR_LED	O	Charging indication LED drive signal output terminal
245	XCS_REC_DRV	O	Chip select signal output to the over write head driver
246	GND_SW	O	Ground line selection signal output terminal Not used
247	CS_RTC	O	Chip select signal output to the real time clock

Pin No.	Pin Name	I/O	Description
248	JOG_A	I	Jog dial pulse input terminal (A phase)
249	JOG_B	I	Jog dial pulse input terminal (B phase)
250	VBUS_DET	I	Detection terminal of USB power supply
251	SSB_DATA	I/O	SSB data input/output with the RF amplifier
252	SSB_CLK	O	SSB clock output to the RF amplifier
253	UMD_PROTECT	I	Recording protector for Hi-MD disc detection switch input terminal
254	LDPEN	O	Pulse/DC light-emit selection signal output to the optical pick-up block
255	CHG_TYPE2	O	Charge control signal output terminal "H": charging Not used
256	DRAM_HOLD_DET	I	Detection terminal for internal D-RAM power supply information keeping
257	DRAM_VDD_CLR	O	Internal D-RAM power supply latch clear signal output for quick mode sleep
258	AD2ENDF	I	Monitor input terminal for flag of servo signal A/D measuring finish
259	TEST	-	Input terminal for the test Not used
260	SRAM_MODE	I	Terminal for setting
261	HSALF	I	Terminal for setting
262 to 271	MON0 to MON9	O	Trigger monitor terminal Output clock=18.5 MHz
272	XLSRCK	O	Pulse output for laser strobe recording to the optical pick-up
273	TAT	I	Not used
274	TAN	I	Not used
275	NAR	I	Not used
276	IDO	I	Not used
277	SAK	O	Not used
278	LRCKI	I	L/R sampling clock signal input terminal for PCM data interface Not used
279	XBCKI	I	Bit clock signal input terminal for the PCM data interface Not used
280	DATAI	I	Serial data input terminal for the PCM data interface Not used
281	SI3	I	Serial data input for LAM microcomputer communication Not used
282	SO3	O	Serial data output for LAM microcomputer communication Not used
283	SCK3	O	Serial data transfer clock signal output for LAM microcomputer communication Not used
284	SI4	I	Serial data input for communication from the camera module
285	SO4	O	Serial data output for communication to the camera module
286	SCK4	O	Serial data transfer clock signal output for communication to the camera module
287	RESET	O	Reset signal output to the camera module
288	OPE_LED_CNT	O	Operating indication LED drive signal output terminal
289	WAKE	O	Wake up signal output to the camera module
290	DRIVE_NACK	O	NACK signal output to the camera module
291	DRIVE_REQ	O	Transmission request signal output to the camera module
292	DRIVE_ACK	O	ACK signal output to the camera module
293	CAMERA_NACK	O	NACK signal input from the camera module
294	CAMERA_REQ	O	Transmission request signal input from the camera module
295	CAMERA_ACK	O	ACK signal input from the camera module
296	VSYN_IN	O	Not used
297	BUF_ONOFF	O	Not used
298	27OSC_CONT	O	Not used
299, 300	PWM_L1, PWM_L2	O	LC drive PWM output terminal Not used
301, 302	I2C_1, I2C_2	I/O	Open drain for I2C
303, 304	JTAG0, JTAG1	I/O	Terminal for setting
305	CLKIN2	I	Clock signal input terminal (13.5 MHz or 27 MHz) Not used

Pin No.	Pin Name	I/O	Description
306	FS256	O	Master clock signal (256Fs=11.2896 MHz) output to A/D converter
307	ADDT	I	Data input from A/D converter
308	LRCK	O	L/R sampling clock signal (44.1kHz) output to the A/D converter or D/A converter Not used
309	XBCK	O	Bit clock (2.8224 MHz) output to the A/D converter or D/A converter Not used
310	OSCI	I	Main system clock input terminal (22.5792 MHz)
311	OSCO	O	Main system clock output terminal (22.5792 MHz)
312	FS512	O	Clock signal (512Fs=22.5792 MHz) output to the headphone amplifier
313	DTCK	I/O	TSB master data clock input/output or SSB data input/output with the remote commander
314	UDP	I/O	USB data (+) input/output terminal
315	UDM	I/O	USB data (-) input/output terminal
316	USBHOLD	I	USB hold signal input from the power control IC
317	SUSPEND	O	USB suspend signal output to the power control IC
318	UPUEN	O	USB pull-up resistor connection control terminal
319	UOSCI	I	System clock input terminal (48 MHz) (for USB oscillation circuit)
320	UOSCO	O	System clock output terminal (48 MHz) (for USB oscillation circuit)
321	EBA0	O	Address signal output terminal Not used
322 to 342	EBA1 to EBA21	O	Address signal output to the flash memory
343, 344	EBA22, EBA23	O	Address signal output terminal Not used
345 to 360	EBD0 to EBD15	I/O	Two-way data bus with the flash memory
361 to 376	EBD16 to EBD31	I/O	Two-way data bus terminal Not used
377	EBWAIT	O	Wait signal output terminal Not used
378	EBCS0	O	Chip select signal output to the flash memory
379 to 383	EBCS1 to EBSC5	O	Chip select signal output terminal Not used
384	EBRD	O	Read signal output to the flash memory
385	EBWE	O	Write signal output to the flash memory
386 to 389	EBWR0 to EBWR3	O	Access signal output terminal Not used
390 to 392	NC	-	Not used