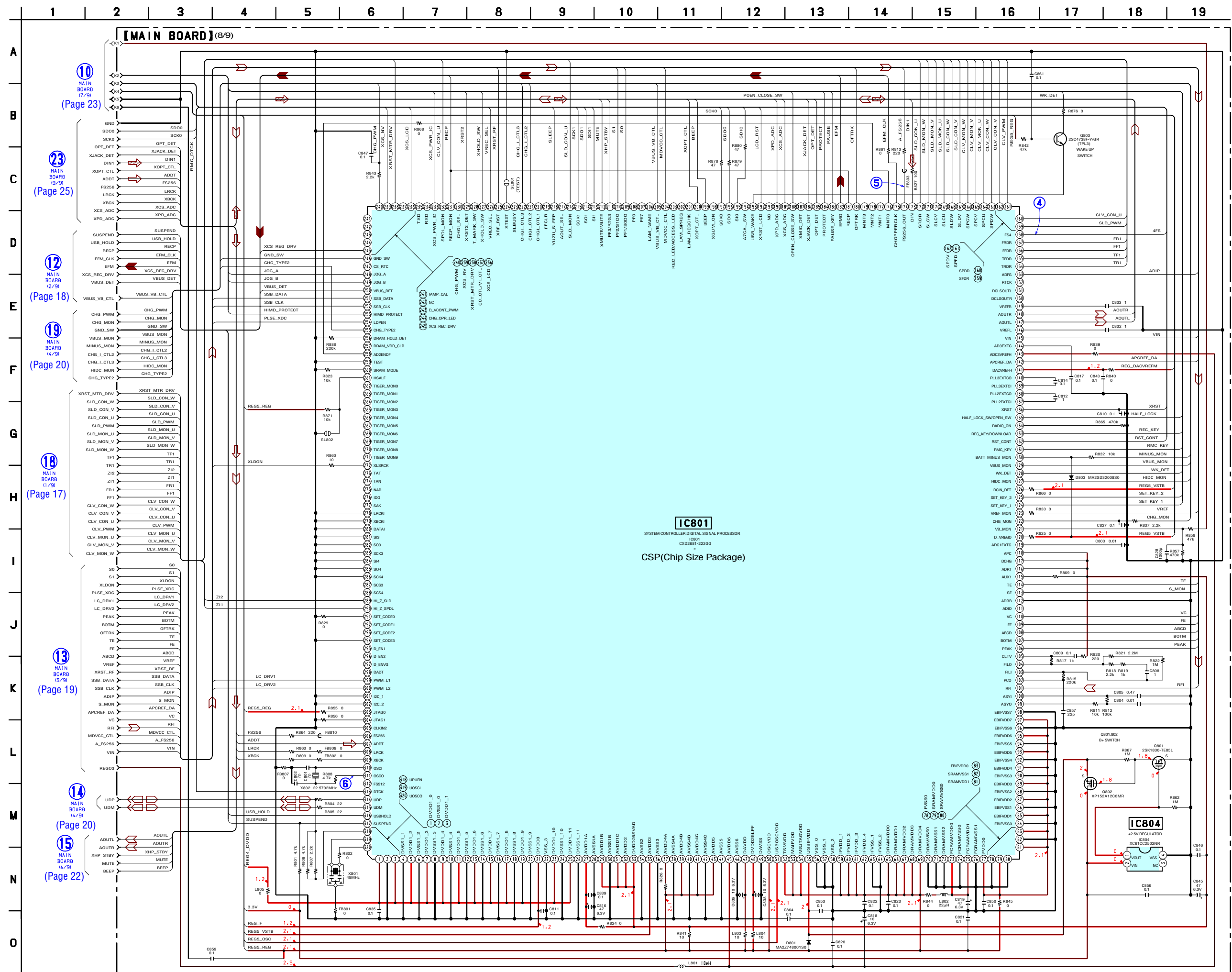


4-11. SCHEMATIC DIAGRAM – MAIN Section (8/9) – • See page 16 for Waveforms. • See page 33 for IC Pin Function Description.



• IC Pin Function Description

IC801 CXD2681-222GG (SYSTEM CONTROLLER, DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Description
1	DVDD1_0	—	Power supply terminal
2	DVSS1_0	—	Ground terminal
3	DVDD1_1	—	Power supply terminal
4	DVSS1_1	—	Ground terminal
5	DVDD1_2	—	Power supply terminal
6	DVSS1_2	—	Ground terminal
7	DVDD1_3	—	Power supply terminal
8	DVSS1_3	—	Ground terminal
9	DVDD1_4	—	Power supply terminal
10	DVSS1_4	—	Ground terminal
11	DVDD1_5	—	Power supply terminal
12	DVSS1_5	—	Ground terminal
13	DVDD1_6	—	Power supply terminal
14	DVSS1_6	—	Ground terminal
15	DVDD1_7	—	Power supply terminal
16	DVSS1_7	—	Ground terminal
17	DVDD1_8	—	Power supply terminal
18	DVSS1_8	—	Ground terminal
19	DVDD1_9	—	Power supply terminal
20	DVSS1_9	—	Ground terminal
21	DVDD3	—	Power supply terminal
22	VSS_3	—	Ground terminal
23	DVDD1_10	—	Power supply terminal
24	DVSS1_10	—	Ground terminal
25	DVDD1_11	—	Power supply terminal
26	DVSS1_11	—	Ground terminal
27	AVDD1A	—	Power supply terminal (for PLL)
28	AVSS1A	—	Ground terminal (for PLL)
29	AVDD1B	—	Power supply terminal
30	AVSS1B	—	Ground terminal
31	AVDD1C	—	Power supply terminal
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 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 AUX)
55	USBIFVDD	—	Power supply terminal (for USB interface)
56 to 58	VSS_0 to VSS_2	—	Ground terminal
59 to 62	IFVDD_1 to IFVDD_4	—	Power supply terminal (for interface)
63	IFVSS_1	—	Ground terminal (for interface)
64	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 AUX)
78	FVSS0	—	Ground terminal (for AUX)
79	SRAMVDD0	—	Power supply terminal (for AUX)
80	SRAMVSS0	—	Ground terminal (for AUX)
81	SRAMVDD1	—	Power supply terminal (for AUX)
82	SRAMVSS1	—	Ground terminal (for AUX)
83	EBIFVDD0	—	Power supply terminal (for interface circuit)
84	EBIFVSS0	—	Ground terminal (for interface circuit)
85	EBIFVDD1	—	Power supply terminal (for interface circuit)
86	EBIFVSS1	—	Ground terminal (for interface circuit)
87	EBIFVDD2	—	Power supply terminal (for interface circuit)
88	EBIFVSS2	—	Ground terminal (for interface circuit)
89	EBIFVDD3	—	Power supply terminal (for interface circuit)
90	EBIFVSS3	—	Ground terminal (for interface circuit)
91	EBIFVDD4	—	Power supply terminal (for interface circuit)
92	EBIFVSS4	—	Ground terminal (for interface circuit)
93	EBIFVDD5	—	Power supply terminal (for interface circuit)
94	EBIFVSS5	—	Ground terminal (for interface circuit)
95	EBIFVDD6	—	Power supply terminal (for interface circuit)
96	EBIFVSS6	—	Ground terminal (for interface circuit)
97	EBIFVDD7	—	Power supply terminal (for interface circuit)
98	EBIFVSS7	—	Ground terminal (for interface circuit)
99	ASYO	O	Playback EFM duplex signal output
100	ASYI	I	Playback EFM comparator slice level input
101	RFI	I	Playback EFM RF signal input from the RF amplifier

Pin No.	Pin Name	I/O	Description
102	PCO	O	Phase comparison output terminal for the playback EFM system master PLL
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	I	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 Not used
117	DCHG	—	Connecting terminal with the analog power supply of low impedance
118	APC	I	Error signal input for the laser automatic power control
119	ADC1EXTC	—	Connection terminal for an external capacitor
120	D_VREGO	I	Voltage sensibility of regulator for class-D amplifier Not used
121	VB_MON	I	Unregulated power supply voltage monitoring terminal
122	CHG_MON	I	Charge or discharge current monitoring terminal Not used
123	VREF_MON	O	Reference voltage output terminal
124	SET_KEY_1	I	Front panel key input terminal
125	SET_KEY_2	I	Front panel key input terminal
126	DCIN_DET	I	DC input voltage for battery charge monitoring terminal Not used
127	HIDC_MON	I	High DC voltage monitoring terminal
128	WK_DET	I	Panel key input for wake-up
129	VBUS_MON	I	USB power supply voltage monitoring terminal
130	BATT_MINUS_MON	I	Voltage monitoring terminal for the minus terminal of rechargeable battery
131	RMC_KEY	I	Remote commander key input terminal
132	RST_CONT	O	System reset signal output to the power control IC
133	REC_KEY /DOWNLOAD	I	DOWNLOAD key input terminal
134	RADIO_ON	I	Radio on detection input from the remote commander jack Not used
135	HALF_LOCK_SW /OPEN_SW	I	Front panel open switch detection terminal
136	XRST	I	System reset signal input from the power control IC
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 terminal
143	ADC3VREFH	I	Reference voltage input terminal
144	ADC3EXTC	—	Connection terminal for an external capacitor
145	VIN	I	RF signal input from the RF amplifier

Pin No.	Pin Name	I/O	Description
146	VREFL	I	Reference voltage terminal connected to the capacitor (for the built-in D/A converter L-CH)
147	AOUTL	O	Built-in D/A converter L-CH signal output
148	AOUTR	O	Built-in D/A converter R-CH signal output
149	VREFR	I	Reference voltage terminal connected to the capacitor (for the built-in D/A converter R-CH)
150	DCLSOUTR	O	PWM modulator signal output for the class-D headphone amplifier Not used
151	DCLSOUTL	O	PWM modulator signal output for the class-D headphone amplifier Not used
152	RTCK	—	Not used
153	ADFG	I	ADIP duplex FM signal (22.05±1kHz) 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
159	SFDR	O	Sled servo drive PWM signal output to the motor driver
160	SPRD	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	SRDR	O	Sled motor drive control signal output (U) to the motor driver
173	DIN	I	Digital audio signal input terminal
174	FS256_OUT	O	11.2896 MHz clock output
175	CHOPPERCLK	O	Clock signal output for chopper
176 to 179	MNT0 to MNT3	O	Monitor output for DSP
180	OFTRK	I/O	Tracking signal input/output for MD3
181	RECP	O	Laser power changeover signal output
182	EFMO	O	EFM encode data output for the record
183	PAUSE_KEY	I	Pause key input terminal
184	PROTECT	I	Recording protector detection input for normal disc
185	OPT_DET	I	Optical digital input plug detection input terminal “H”: optical in
186	XJACK_DET	I	Line input plug detection input terminal “L”: plug in
187	XMIC_DET	I	Microphone input plug detection input terminal “L”: plug in Not used
188	OPEN_CLOSE_SW	I	Open switch input terminal
189	XCS_ADC	O	Chip select signal output for A/D converter
190	XPD_ADC	O	Power control signal output for A/D converter
191	NC	—	Not used
192	XRST_LCD	O	Reset signal output for the LCD module
193	USB_WAKE	I	System wake up signal input by USB connect
194	A7CAL_SW	I/O	Current sense amplifier input, and short switch control output terminal Not used

Pin No.	Pin Name	I/O	Description
195	SI0	I	Serial data input from the EEPROM
196	SO0	O	Serial data output to the EEPROM
197	SCK0	O	Serial clock output to the EEPROM
198	XGUM_ON	I	Rechargeable battery detection signal terminal Not used
199	BEEP	O	Beep sound control signal output to the headphone amplifier
200	XOPT_CTL	O	Power supply on/off control signal output for the optical input jack
201	LAM_REQCHK	I	LAM power check terminal Not used
202	LAM_SPREQ	O	LAM force stop request signal output Not used
203	REC_LED /ACCESS_LED	O	REC or Access LED drive signal output terminal Not used
204	MDVCC_CTL	O	Power supply control signal output for the OP modulation
205	VBUS_VB_CTL	O	USB power supply control signal output terminal
206	LAM_NAME	O	LAM name data request signal output terminal Not used
207	PE7	—	Not used
208	PF0	—	Not used
209	PF1/S0DO	O	Connect to the optical pick-up block
210	PF2/S1DO	O	Connect to the optical pick-up block
211	PF3/RTG3	O	Connect to the headphone amplifier
212	XMUTE /MUTE	O	Muting on/off control signal output terminal
213	SI1	I	Serial data input from the LCD module
214	SO1	O	Serial data output to the LCD module
215	SCK1	I/O	Serial data transfer clock signal input/output terminal with the LCD module
216	SLD_MON	I	Sled servo monitoring terminal
217	AOUT_SEL	O	Headphone/line output switching terminal Not used
218	YUZU_SLEEP	O	Chip enable output to the power control IC
219	FFCLR	O	Input latch output for the start switching to the power control Not used
220	CHGI_CTL1	O	Charge current limiter control signal output at the time of DC adaptor use “L”: charge Not used
221	CHGI_CTL2	O	Charge current control signal output terminal “L”: low current charge
222	CHGI_CTL3	O	Charge current control signal output terminal “L”: low current charge
223	SLBUSY	I	Receive signal monitoring terminal for sled command
224	XTEST	I	Terminal for the test mode setting (normally open) “L”: test mode
225	XRF_RST	O	Reset signal output to the RF amplifier
226	VREC_SEL	O	VREC start-up timing control signal output terminal
227	XHOLD_SW	I	HOLD switch detection input terminal
228	T_MARK_SW	I	Track mark switch input terminal Not used
229	XRST2_DET	I	Reset signal input from the power control IC
230	CHGI_SEL	O	Charge/discharge control signal output for current sense amplifier Not used
231	RECP_MON	I	Laser power changeover signal monitoring terminal
232	SPDL_MON	I	Spindle servo monitoring terminal
233	XCS_PWR_IC	O	Chip select signal output to the power control IC
234	RXD	I	Not used
235	TXD	O	Not used
236	XCS_LCD	O	Chip select signal output to the LCD module
237	CC_CTL /VI_CTL	O	Constant current circuit control signal output terminal

Pin No.	Pin Name	I/O	Description
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 terminal
241	IAMP_CAL	O	Offset signal output of current sense amplifier Not used
242	NC	—	Not used
243	D_VCONT_PWM	I	Power supply voltage setting terminal for only class-D amplifier Not used
244	CHG_OPR_LED	O	Charge indication LED drive signal output terminal Not used
245	XCS_REC_DRV	O	Chip select signal output to the over write head driver
246	GND_SW	O	Ground line switching signal output terminal
247	CS_RTC	O	Chip select signal output for real time clock Not used
248	JOG_A	I	Jog dial pulse input terminal
249	JOG_B	I	Jog dial pulse input terminal
250	VBUS_DET	I	USB power supply voltage detection terminal
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	HIMD_PROTECT	I	Recording protector detection input for Hi-MD disc
254	LDPEN	O	Pulse/DC light-emit switching signal output terminal
255	CHG_TYPE2	O	Battery charge control signal output terminal “H”: charging
256	DRAM_HOLD_DET	I	Detection terminal for D-RAM power supply information keeping Not used
257	DRAM_VDD_CLR	O	D-RAM power latch clear signal output for quick mode sleep Not used
258	AD2ENDF	I	Monitoring terminal for flag of servo signal A/D measuring finish
259	TEST	—	Not used
260	SRAM_MODE	I	Not used
261	HSALF	I	Not used
262 to 271	TIGER_MON0 to TIGER_MON9	O	Trigger monitoring terminal output clock=18.5 MHz
272	XLSRCK	O	Pulse output for laser strobe recording
273	TAT	—	Not used
274	TAN	—	Not used
275	NAR	—	Not used
276	IDO	—	Not used
277	SAK	—	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 clock signal 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	Data input from ATRAC3 plus encoder communication Not used
285	SO4	O	Data output for ATRAC3 plus encoder communication Not used
286	SCK4	O	Clock signal output for ATRAC3 plus encoder communication Not used
287	SCS3	O	Chip select signal output for LAM microcomputer communication Not used

Pin No.	Pin Name	I/O	Description
288	SCS4	O	Chip select signal output for ATRAC3 plus encoder communication Not used
289	HI_Z_SLD	O	Standby signal output terminal for the sled motor
290	HI_Z_SPDL	O	Standby signal output terminal for the spindle motor
291 to 294	SET_CODE0 to SET_CODE3	I	Setting terminal for the destination
295	D_EN1	O	Control signal output for class-D amplifier Not used
296	D_EN2	O	Control signal output for class-D amplifier Not used
297	D_ENVG	O	Enable/disable switching control terminal for class-D amplifier booster circuit Not used
298	DADT	O	Audio data output terminal Not used
299	PWM_L1	O	LC drive PWM output terminal
300	PWM_L2	O	LC drive PWM output terminal
301	I2C 1	—	Open drain for IIC
302	I2C 2	—	Open drain for IIC
303, 304	TEST	—	Not used
305	CLKIN2	I	Clock signal input terminal (13.5 MHz or 27 MHz) Not used
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 external A/D converter
309	XBCK	O	Bit clock (2.8224 MHz) output to the external A/D converter
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 output for class-D amplifier Not used
313	DTCK	I/O	TSB master data clock input/output or SSB data input/output
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 terminal
317	SUSPEND	O	USB suspend signal output
318	UPUEN	O	USB pull-up resistor connection control output terminal
319	UOSCI	I	Resonator (48MHz) connection terminal for the USB oscillation circuit
320	UOSCO	O	Resonator (48MHz) connection terminal for the USB oscillation circuit
321 to 325	NC	—	Not used