

TEAC

SERVICE MANUAL

MC-D95

CD/TUNER/AMPLIFIER

NOTES

- PC boards shown are viewed from parts side.
- The parts with no reference number or parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- ⚠ Parts marked with this sign are critical components. They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Parts of [] mark can be used only with the version designated.
[J] : JAPAN [US] : U.S.A. [C] : CANADA
[E] : EUROPE [UK] : U.K. [GE] : GENERAL EXPORT

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Specifications

AMP Section

Output Power : 20 W/ch (0.5%, 6 ohms, 1 kHz)
Input Sensitivity : 200 mV
Frequency Response : 20 Hz to 40,000 Hz

General

Power Consumption : 60 W
Power Requirements : 120 V, 60 Hz [US]
 230 V, 50 Hz [EUR]
Dimensions (W x H x D) : 175 x 140 x 360 mm
Weight (net) : 4.0 kg

Standard Accessories

Remote Control Unit
Operator's Manual
AM Loop Antenna
FM Lead-type Antenna

- Design and specifications are subject to change without notice.
- The illustrations may differ slightly from production models.

FM Section

Frequency Response : 87.50 MHz to 108.00 MHz
 (100 kHz steps) [US]
 (50 kHz steps) [EUR]
Signal-to-Noise Ratio : Mono: 65 dB (Mono)
 Stereo: 56 dB (Stereo)

AM Section

Frequency Response : 530 kHz to 1720 kHz [US]
 (10 kHz steps)
 522 kHz to 1620 kHz [EUR]
 (9 kHz steps)
Signal-to-Noise Ratio : 35 dB

CD PLAYER Section

Signal-to-Noise Ratio : 80 dB (with IHF "A" Filter)
T.H.D : 0.05% (1 kHz, 20 kHz LPF)
Channel Separation : 55 dB (1 kHz)
Channel Balance : 1 dB
Frequency Response : 17 Hz - 20 kHz (±1.5 dB)
Wow Flutter : Bellow Measurable

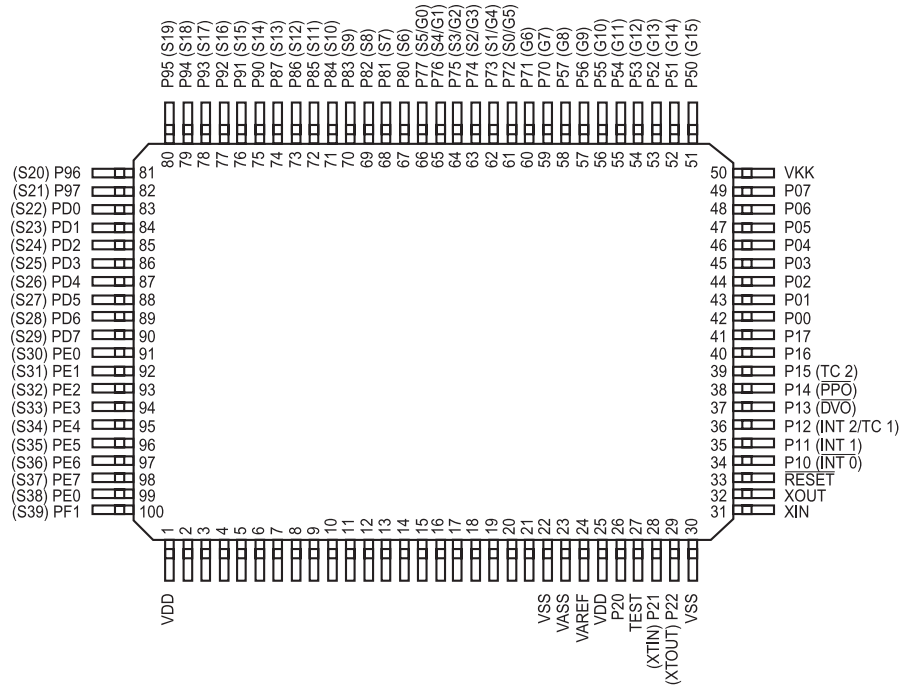
IC36 PIN FUNCTION (IC : BVITMP87PM78F)(AMP)

| PIN No. | NAME | I/O | DESCRIPTION |
|-------------|-------------|-----|-----------------------------------------------|
| 1, 25 | VDD | - | POWER SUPPLY (+5V) |
| 6 | HREQ | I/O | BUS for CD CLOCK |
| 7 | SLQCLK | I/O | BUS for CD CHIP ENABLE |
| 8 | SLQIN | I | RESET for CD |
| 9 | SLQOUT | O | MUTE for CD SINGLE |
| 12 | DATA | O | EUROPE VERSION RDS DATA CONTROL PORT |
| 13 | CLOCK | O | |
| 14 | STEREO IN | I | STEREO IN CONTROL INPUT |
| 15 | TUNED | I | TUNED CONTROL INPUT |
| 16 | HPIN | | |
| 17 | PROTECTOR | I | PROTECTOR IN PORT |
| 19, 20, 21 | KEY MATRIX | I | KEY MATRIX PORTS |
| 22,23,27,30 | VSS | - | GND |
| 24 | VAREF | - | A/D CONVERTOR REFERENCE VOLTAGE |
| 26 | BACK UP | I | BACK-UP MODE CONTROL INPUT |
| 28, 29 | X-TAL | I | 32.768kHz SUB CLOCK CONNECTING PORT |
| 31 | X IN | I | 8MHz CRYSTAL CONNECTING TERMINAL |
| 32 | X OUT | O | |
| 33 | RESET | I | SYSTEM RESET PULSE INPUT |
| 34 | REMOTE IN | I | REMOTE CONTROL SIGNAL INPUT |
| 35 | BUS IN | I | REMOTE CONTROL SIGNAL INPUT |
| 36 | BUS OUT | O | REMOTE CONTROL SIGNAL INPUT |
| 38 | SPEAKER | O | SPEAKER ON/OFF PORT |
| 41 | CE | O | PLL DATA CONTROL PORT |
| 42 | DATA OUT | O | |
| 43 | CLOCK | O | |
| 44 | DATA IN | I | |
| 45 | CLOCK | O | TDA7318D DATA CONTROL PORT |
| 46 | DATA | O | |
| 47 | POWER | O | POWER ON/OFF |
| 48 | MUTE | O | SIGNAL MUTE |
| 50 | VFL | | (-33V) NEGATIVE POWER SUPPLY FOR FIP BLINKING |
| 52 ~ 60 | GRID | O | FIP GRID CONTROL OUTPUTS |
| 61 ~ 82 | SEGMENT | O | FIP SEGMENT CONTROL OUTPUTS |
| 83 ~ 87 | | I | AREA OPTION |
| 89 | CD POWER | O | CD POWER ON/OFF PORT |
| 90 | ON/STBY LED | O | ON/STANDBY LED CONTROL PORT |
| 91 | TAPE 'H' | O | ON TAPE FUNCTION 'H' OUTPUT PORT |
| 93 | MD 'H' | O | ON MD FUNCTION 'H' OUTPUT PORT |
| 96, 97 | JOG CONTROL | I | VOL/BAL/BASS/TRE CONTROL JOG INPUT PORT |

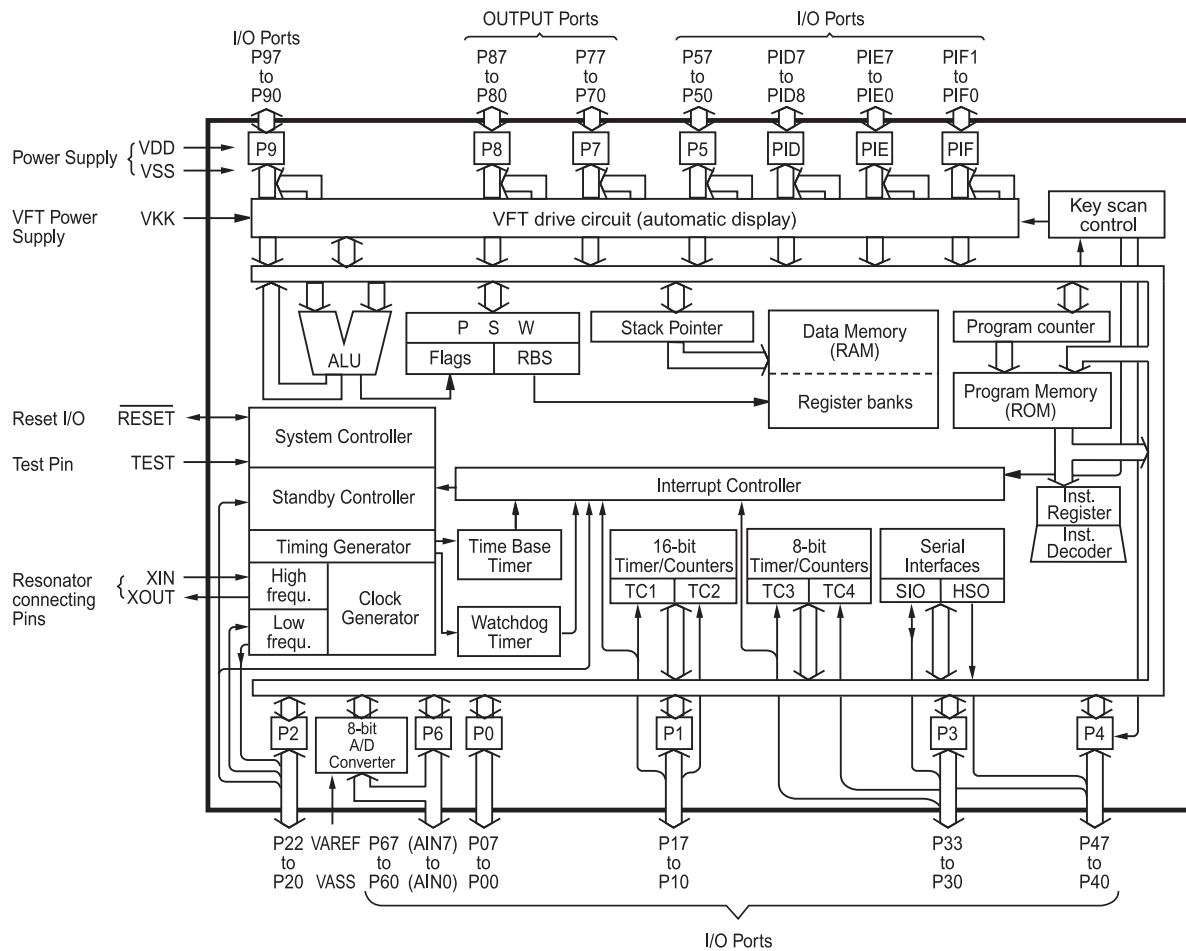
IC 66 PIN FUNCTION (IC : BVITMP87PM78F)(CD)

| PIN No. | NAME | I/O | DESCRIPTION |
|-------------|------------------|-----|----------------------------------|
| 1, 25 | VDD | - | POWER SUPPLY (+5V) |
| 2 | BUS 0 | I/O | BUS for CD DATA |
| 3 | BUS 1 | I/O | BUS for CD DATA |
| 4 | BUS 2 | I/O | BUS for CD DATA |
| 5 | BUS 3 | I/O | BUS for CD DATA |
| 6 | BUCK | I/O | BUS for CD CLOCK |
| 7 | CCE | I/O | BUS for CD CHIP ENABLE |
| 8 | CDRE | O | RESET for CD |
| 9 | MUTE | O | MUTE for CD SINGLE |
| 10 | SIO CLOCK | I/O | BUS for CD DATA |
| 11 | SIO OUT | I/O | |
| 12 | SIO IN | I/O | |
| 13 | HREQ | I/O | |
| 22,23,27,30 | VSS | - | GND |
| 31 | X IN | I | 8MHz CRYSTAL CONNECTING TERMINAL |
| 32 | X OUT | O | |
| 33 | RESET | I | SYSTEM RESET |
| 42 | A | O | PLL DATA CONTROL PORT |
| 43 | B | O | |
| 44 | C | O | |
| 45 | D | O | |
| 46 | DSP POWER | O | CD POWER ON/OFF |
| 83 | UN CLAMP SW | I | MECHANISM SW CONDITION |
| 84 | T.U HEIGHT SW | I | |
| 85 | HOLDER MODE SW | I | |
| 86 | T.U HEIGHT SW | I | |
| 87 | HOLDER HEIGHT SW | I | |
| 88 | LOAD/CLAMP | I | |
| 89 | OPEN SW | I | |
| 90 | CLOSE/HP SW | I | |
| 91 | DISC ON SW | I | |
| 92 | DISC CENTER SW | I | |

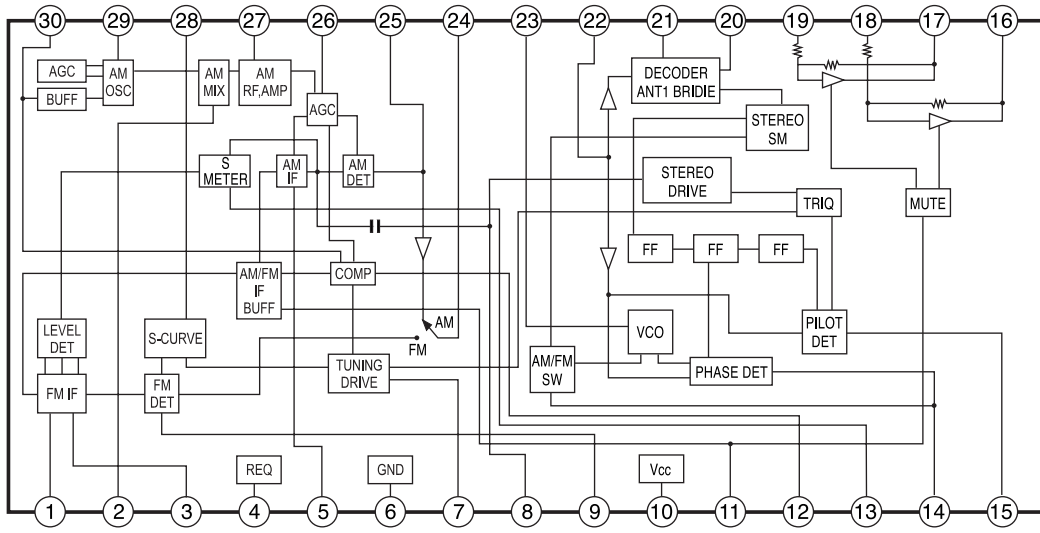
PIN ASSIGNMENTS (TOP VIEW)



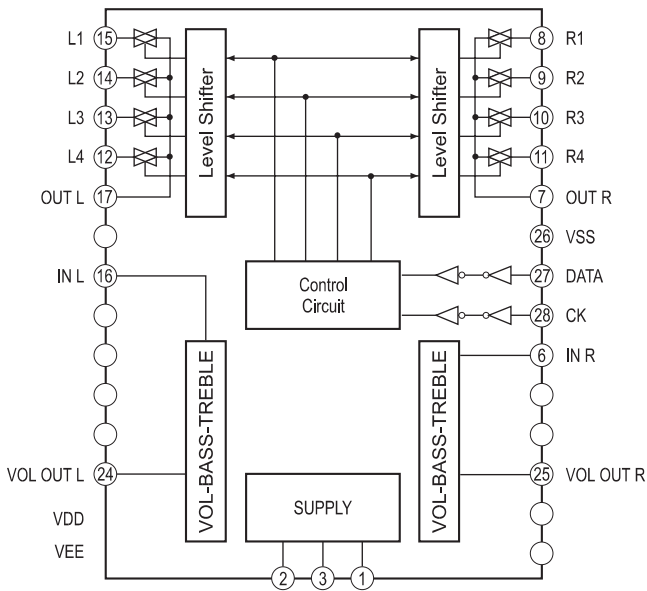
PIN BLOCK DIAGRAM



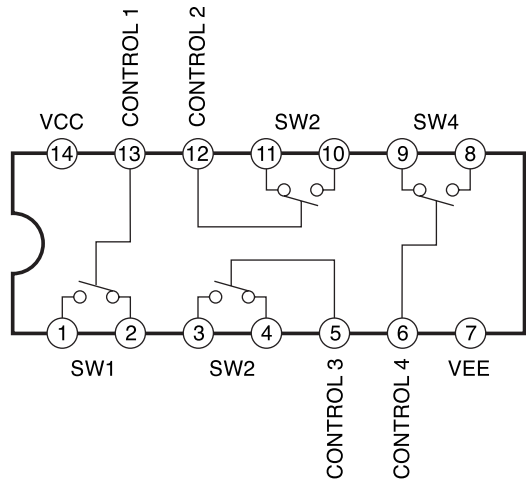
IC11 (TUNER) LA1836M BLOCK DIAGRAM



TDA7318D



IC23 (INPUT) LC4966



■ ALIGNMENT INSTRUCTIONS

EQUIPMENT NEEDED:

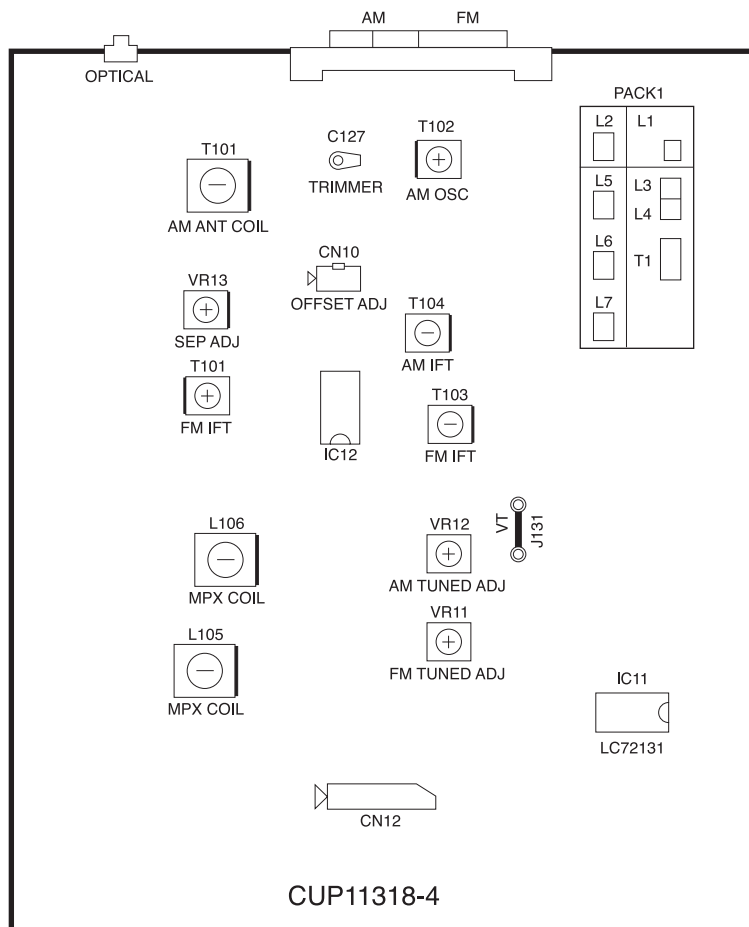
AM Signal Generator
 FM Signal Generator
 Oscilloscope
 VTVM(AC, DC)
 Test loop antenna (AW Adjustment)
 Dummy antenna (FM Adjustment)
 Stereo signal modulator
 Frequency counter
 Distortion analyser

IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band aligned.
3. Keep the signal input as low as possible to adjust accurately.
4. Modulation and modulation frequency.

| Band \ Item | Modulation | Modulation frequency |
|-------------|------------------|----------------------|
| AM | 30% | 400Hz |
| FM | 100%(75KHz Dev.) | 400Hz |

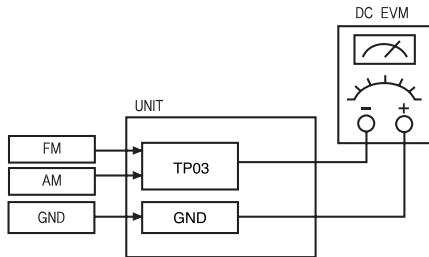
■ ADJUSTMENT POINT



MEASUREMENTS AND ADJUSTMENTS

1. FM, AM TRACKING VOLTAGE ADJUSTMENTS

(FM, AM) DC VOLTMETER CONNECT TO TEST POINT TP1 and GND

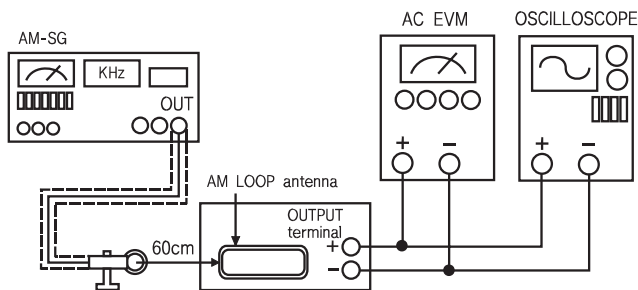


| NO. | Band | Frequency | Adjust for | Adjustment |
|-----|------|-----------|------------|------------|
| 1 | FM | 87.50MHz | 1.5V | L7 |
| 2 | AM | 530KHz | 1V | T404 |

2. AM RF ADJUSTMENT

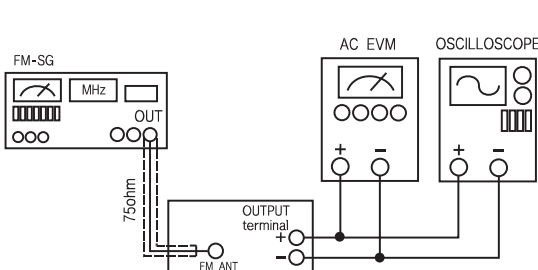
Signal Generator Connects to the AM ANT. Coil through the loop antenna.
Adjust for the indication of VTVM of the wave form of scope to be maximum.

| BAND | Step | Frequency | Adjust for | Adjustment |
|------|------|-------------------------------------|---------------------|------------|
| AM | 1 | 610KHz | Maximum sensitivity | T104, L105 |
| | 2 | 1510KHz | Maximum sensitivity | C107 |
| | 3 | Repeat steps 1 and 2 several times. | | |



3. FM-RF ADJUSTMENT

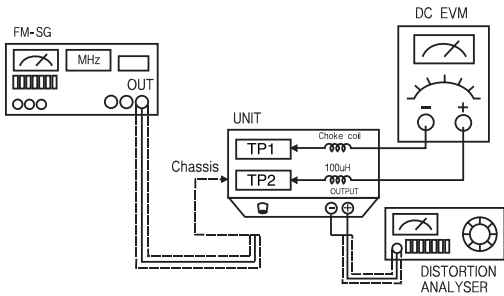
Signal Generator Connect to FM ANT JACK (FM IN) through the dummy.



| NO. | Frequency | Adjust for | Adjustment |
|-----|------------------------------|---------------------|------------|
| 1 | 90.10MHz | Maximum Sensitivity | L2, L5, L6 |
| 2 | Repeat step 1 several times. | | |

4. FM MONO DISTORTION ADJUSTMENT

- DC VOLT METER.....Connect to TP1(-), TP2(+) Through the choke coil (100 μ H)
 Signal Generator.....Connect to FM ANT Jack (FM IN) through the dummy.
 Distortion Meter.....Connect to the output.



| NO. | Frequency | Adjust for | Adjustment |
|-----|-------------------------------------|-----------------|------------|
| 1 | 100.10MHz | DC Voltmeter 0V | T103 |
| 2 | 100.10MHz | Minimum T.H.D | T103 |
| 3 | Repeat steps 1 and 2 Several times. | | |

5. FM/AM AUTO STOP LEVEL ADJUSTMENT

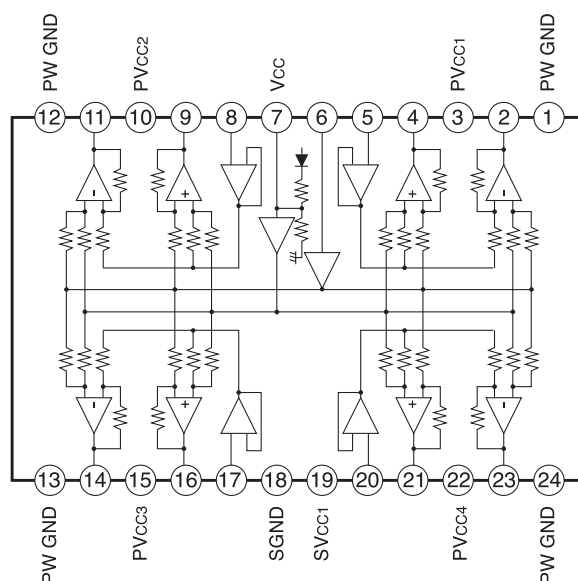
- FM SIGNAL GENERATORConnect to FM ANT Jack (FM IN) through the dummy
 AM SIGNAL GENERATOR.....Connect to AM ANT, Coil through the Loop antenna

| BAND | STEP | SIGNAL GENERATOR | Adjust for | Adjustment |
|------|------|------------------|--------------------------------------------|------------|
| FM | 1 | 100.1MHz 30dB | <input type="checkbox"/> TUNED Display OFF | VR12 |
| | 2 | 100.1MHz 30dB | <input type="checkbox"/> TUNED Display ON | VR12 |
| AM | 1 | 1000KHz 80dB | <input type="checkbox"/> TUNED Display OFF | VR11 |
| | 2 | 1000KHz 80dB | <input type="checkbox"/> TUNED Display ON | VR11 |

TA2092N (POWER DRIVER)

| PIN No. | NAME | DESCRIPTION |
|---------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | PW GND | Power GND Connected to substrate. ①, ⑫, ⑬, ⑳ pin are connected inside. |
| 2 | OUT (-) 1 | Inverted output for CH1 |
| 3 | PV _{CC1} | Supply terminal of output stage for CH1 Supply terminal of output stage are not connected to other channel terminal. |
| 4 | OUT (+) 1 | Non-inverted output for CH1 |
| 5 | V _{IN1} | Input for CH1. Not biased inside |
| 6 | V _{RI} | Input reference voltage Under condition of $V_{RI} \leq 1.8V$, internal bias circuit is shut off. No signal input condition : $V_{RI} = V_{IN}$ |
| 7 | V _{CI} | Output reference voltage. $V_{OUT} = V_{CI} = (V_{CC} - V_F)/2$ |
| 8 | V _{IN2} | Input for CH2 |
| 9 | OUT (+) 2 | Non-inverted output for CH2 |
| 10 | PV _{CC2} | Supply terminal of output stage for CH2 |
| 11 | OUT (-) 2 | Inverted output for CH2 |
| 12 | PW GND | Power GND |
| 13 | PW GND | Power GND |
| 14 | OUT (-) 3 | Inverted output for CH3 |
| 15 | PV _{CC3} | Supply terminal of output stage for CH3 |
| 16 | OUT (+) 3 | Non-inverted output for CH3 |
| 17 | V _{IN3} | Input for CH3 |
| 18 | S GND | Supply terminal of small signal GND |
| 19 | S V _{CC} | Small signal GND |
| 20 | V _{IN4} | Input for CH4 |
| 21 | OUT (+) 4 | Non-inverted output for CH4 |
| 22 | PV _{CC4} | Supply terminal of output stage for CH4 |
| 23 | OUT (-) 4 | Inverted output for CH4 |
| 24 | PW GND | Power GND |

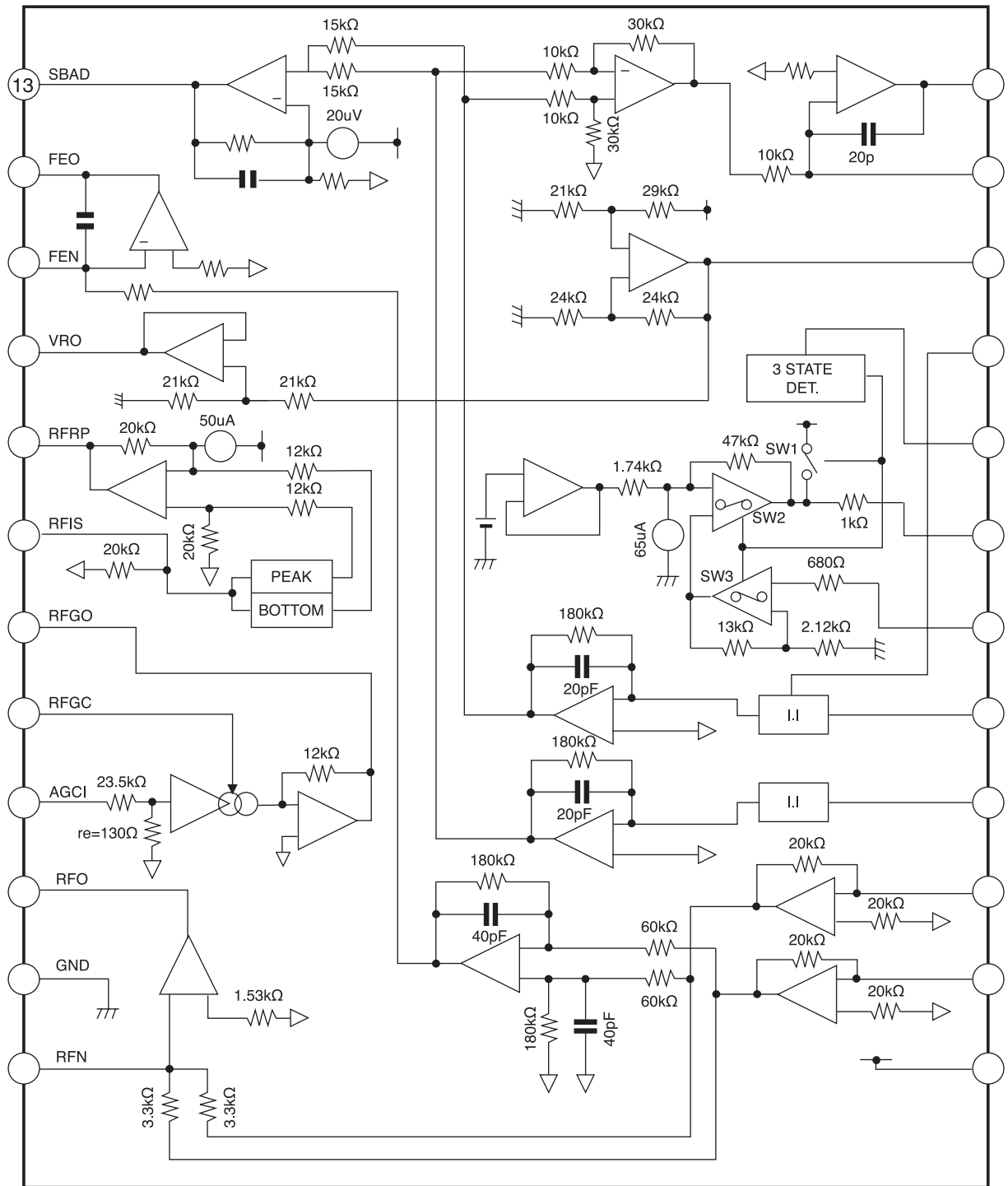
BLOCK DIAGRAM



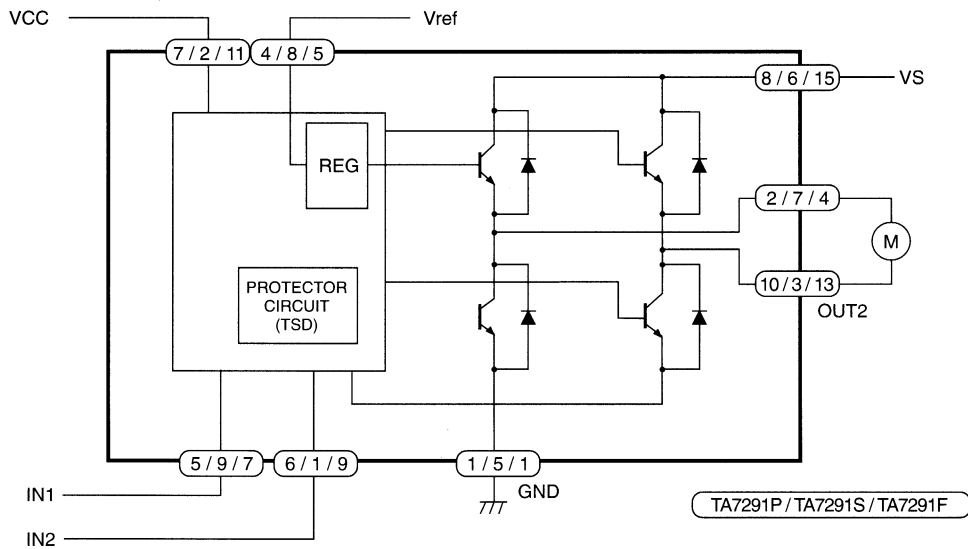
TA2109F (RF/DIGITAL SERVOR)

| PIN No. | NAME | I/O | DESCRIPTION | REMARK |
|---------|------|-----|--------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 1 | VCC | - | Power supply input terminal | - |
| 2 | FNI | I | Main beam I-V amp input terminal | Connected to pin diode A,C |
| 3 | FPI | I | Main beam I-V amp input terminal | Connected to pin diode B,D |
| 4 | TPI | I | Sub beam I-V amp input terminal | Connected to pin diode F |
| 5 | TNI | I | Sub beam I-V amp input terminal | Connected to pin diode E |
| 6 | MDI | I | Monitor photo diode amp input terminal | Connected to monitor photo diode |
| 7 | LDO | O | Laser diode amp output terminal | Connected to laser control circuit |
| 8 | SEL | I | Laser diode control signal input terminal and APC circuit ON/OFF control signal input terminal | 3 signal input (Vcc, Hi-Z, GND) |
| 9 | TEB | I | Tracking error balance adjustment signal input terminal. Controlled by 3 PWM signal (PWM carrier = 88.2 kHz) | 3 signal input (2 VREF, VR, GND) |
| 10 | 2VRO | O | Reference voltage (2 VREF) output terminal 2 VREF = 4.2V when VCC = 5V | - |
| 11 | TEN | I | TE amp negative input terminal | Connected to TEO through feedback register |
| 12 | TEO | O | TE error signal output terminal | - |
| 13 | SBAD | O | Sub beam adder signal output terminal | - |
| 14 | FEO | O | Focus error signal output terminal | - |
| 15 | FEN | I | FE amp negative input terminal | Connected to FEO through feedback register |
| 16 | VRO | O | Reference voltage (VREF) output terminal VREF = 2.1V when VCC = 5V | - |
| 17 | RFRP | O | Track count signal output terminal | - |
| 18 | RFIS | I | RFRP detect circuit input terminal | Connected to RFO through condenser |
| 19 | RFGO | O | RF gain signal output terminal | - |
| 20 | RFGC | I | RF amplitude adjustment control signal input terminal. Controlled by 3 PWM signal (PWM carrier = 88.2 kHz) | 3 signal input (2 VREF, VR, GND) |
| 21 | AGCI | I | RF signal amplitude adjustment amp input terminal | Connected to RFO through condenser |
| 22 | RFO | O | RF signal output terminal | - |
| 23 | GND | - | Ground terminal | - |
| 24 | RFN | I | RF amp negative input terminal | - |

TA2109F (RF/DIGITAL SERVOR)



TA7291S (Bridge Driver)



| PIN No. | | | SYMBOL | FUNCTIONAL DESCRIPTION |
|---------|---|----|--------|-----------------------------------------|
| P | S | F | | |
| 7 | 2 | 11 | Vcc | Supply voltage terminal for Logic |
| 8 | 6 | 15 | Vs | Supply voltage terminal for motor drive |
| 4 | 8 | 5 | Vref | Supply voltage terminal for control |
| 1 | 5 | 1 | GND | GND terminal |
| 5 | 9 | 7 | IN1 | Input terminal |
| 6 | 1 | 9 | IN2 | Input terminal |
| 2 | 7 | 4 | OUT1 | Output terminal |
| 10 | 3 | 13 | OUT2 | Output terminal |

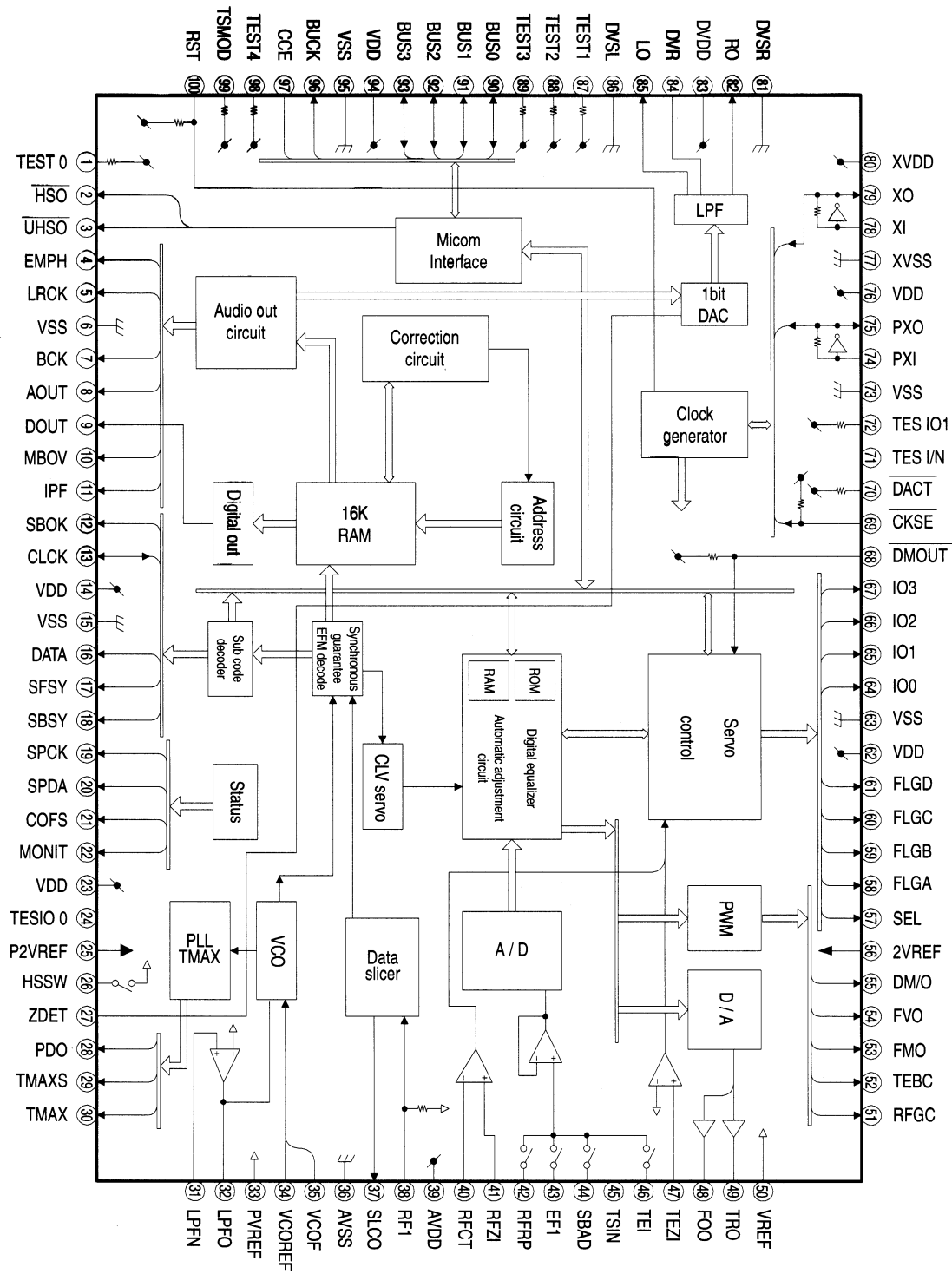
- P Type : PIN ③, ⑨ : NC
- S Type : PIN 4 : NC
- F Type : PIN ②, ③, ⑥, ⑧, ⑩, ⑫, ⑭, and ⑯ : NC
- For F Type, We recommend FIN to be connected to the GND.

TC9432AF (Digital Signal Processor)

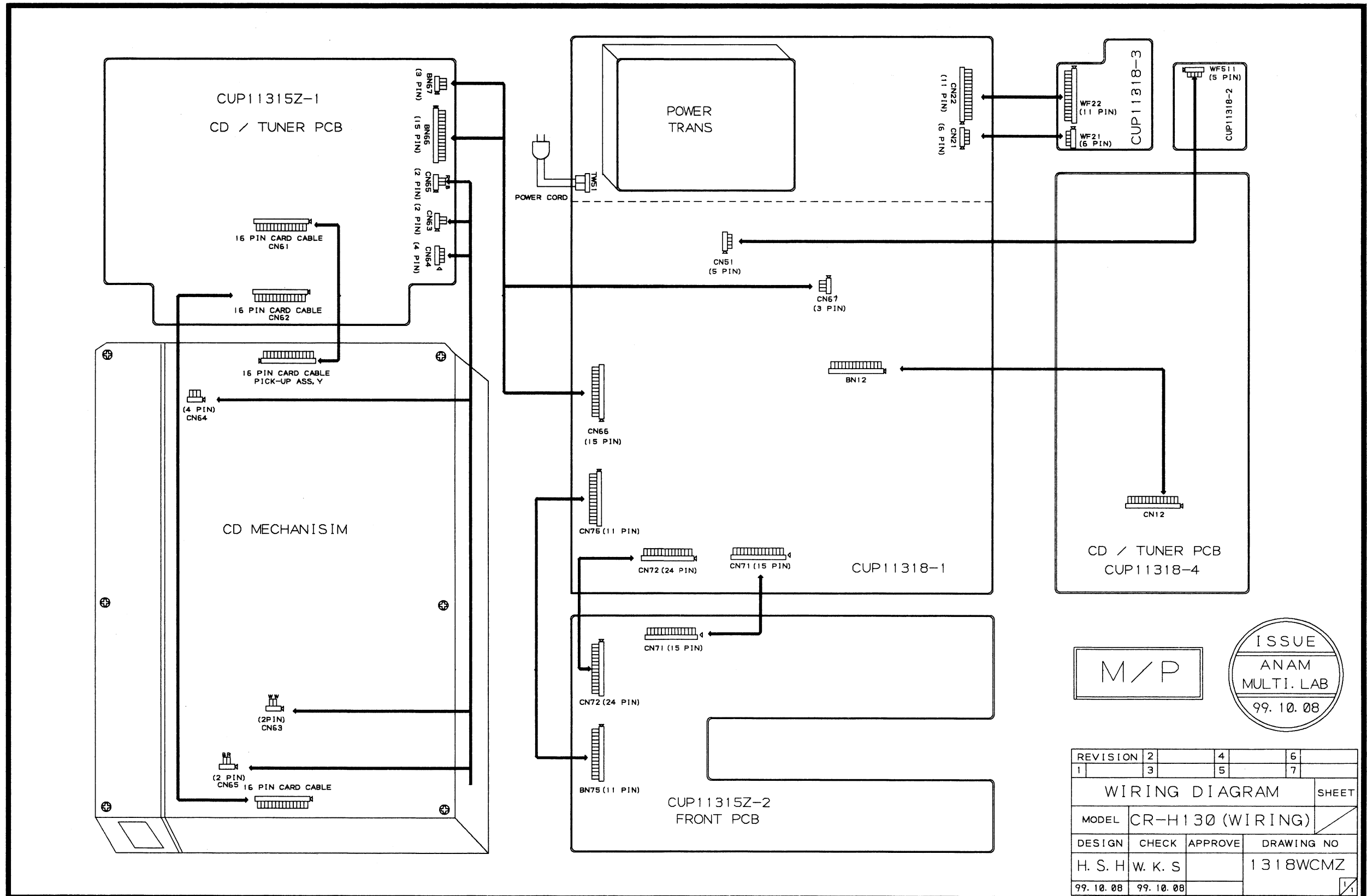
| PIN No. | NAME | I/O | FUNCTIONAL DESCRIPTION | REMARKS | | | | | | | | | | | | | | | |
|--------------------------|--------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------|-------------------------|----------|--------------------------|--------|------------------------|-------|---------------------------------|---|---|---------|---|---|---|---|
| 1 | TEST0 | - | Test mode terminal. Normally, keep at open. | With pull-up resistor. | | | | | | | | | | | | | | | |
| 2 | $\overline{\text{HSO}}$ | O | Playback speed mode flag output terminal. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>$\overline{\text{UHSO}}$</th> <th>$\overline{\text{HSO}}$</th> <th>PLAYBACK SPEED</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>H</td> <td>Normal</td> </tr> <tr> <td>H</td> <td>L</td> <td>2 times</td> </tr> <tr> <td>L</td> <td>H</td> <td>4 times</td> </tr> <tr> <td>L</td> <td>L</td> <td>-</td> </tr> </tbody> </table> | $\overline{\text{UHSO}}$ | $\overline{\text{HSO}}$ | PLAYBACK SPEED | H | H | Normal | H | L | 2 times | L | H | 4 times | L | L | - | - |
| $\overline{\text{UHSO}}$ | $\overline{\text{HSO}}$ | PLAYBACK SPEED | | | | | | | | | | | | | | | | | |
| H | H | Normal | | | | | | | | | | | | | | | | | |
| H | L | 2 times | | | | | | | | | | | | | | | | | |
| L | H | 4 times | | | | | | | | | | | | | | | | | |
| L | L | - | | | | | | | | | | | | | | | | | |
| 3 | $\overline{\text{UHSO}}$ | O | | | | | | | | | | | | | | | | | |
| 4 | EMPH | O | Subcode Q data emphasis flag output terminal. Emphasis ON at "H" level and OFF at "L" level. The output polarity can invert by command. | - | | | | | | | | | | | | | | | |
| 5 | LRCK | O | Channel clock output terminal. (44.1 kHz) L-ch at "L" level and R-ch at "H" level. The output polarity can invert by command. | - | | | | | | | | | | | | | | | |
| 6 | Vss | - | Digital GND terminal. | - | | | | | | | | | | | | | | | |
| 7 | BCK | O | Bit clock output terminal. (1.4112 MHz) | - | | | | | | | | | | | | | | | |
| 8 | AOUT | O | Audio data output terminal. | - | | | | | | | | | | | | | | | |
| 9 | DOUT | O | Digital data output terminal. | - | | | | | | | | | | | | | | | |
| 10 | MBOV | O | Buffer memory over signal output terminal. Over at "H" level. | - | | | | | | | | | | | | | | | |
| 11 | IPF | O | Correction flag output terminal. At "H" level, AOUT output is made to correction impossibility by C2 correction processing. | - | | | | | | | | | | | | | | | |
| 12 | SBOK | O | Subcode Q data CRCC check adjusting result output terminal. The adjusting result is OK at "H" level. | - | | | | | | | | | | | | | | | |
| 13 | CLCK | I/O | Subcode P~W data readout clock input/output terminal. This terminal can select by command bit. | - | | | | | | | | | | | | | | | |
| 14 | VDD | - | Digital power supply voltage terminal. | - | | | | | | | | | | | | | | | |
| 15 | Vss | - | Digital GND terminal. | - | | | | | | | | | | | | | | | |
| 16 | DATA | O | Subcode P~W data output terminal. | - | | | | | | | | | | | | | | | |
| 17 | SFSY | O | Playback frame sync signal output terminal. | - | | | | | | | | | | | | | | | |
| 18 | SBSY | O | Subcode block sync signal output terminal. | - | | | | | | | | | | | | | | | |
| 19 | SPCK | O | Processor status signal readout clock output terminal. | - | | | | | | | | | | | | | | | |
| 20 | SPDA | O | Processor status signal output terminal. | - | | | | | | | | | | | | | | | |
| 21 | COFS | O | Correction frame clock output terminal. (7.35 kHz) | - | | | | | | | | | | | | | | | |
| 22 | MONIT | O | Internal signal (DSP internal flag and PLL clock) output terminal. Selected by command. | - | | | | | | | | | | | | | | | |
| 23 | VDD | - | Digital power supply voltage terminal. | - | | | | | | | | | | | | | | | |
| 24 | TESIO0 | I | Test input/output terminal. Normally, keep at "L" level. | - | | | | | | | | | | | | | | | |
| 25 | P2VREF | - | PLL double reference voltage supply terminal. | - | | | | | | | | | | | | | | | |
| 26 | HSSW | O | 2/4 times speed at "VREF" voltage. | 2-state output (PVREF,HiZ) | | | | | | | | | | | | | | | |
| 27 | ZDET | O | 1 bit DA converter zero detect flag output terminal. | - | | | | | | | | | | | | | | | |
| 28 | PDO | O | Phase difference signal output terminal of EFM signal and PLCK signal. | 3-state output (P2VREF,PVREF,Vss) | | | | | | | | | | | | | | | |
| 29 | TMAXS | O | TMAX detection result output terminal. Selected by command bit (TMPS). | - | | | | | | | | | | | | | | | |
| 30 | TMAX | O | TMAX detection result output terminal. Selected by command bit (TMPS). <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>DIFFERENCE RESULT</th> <th>TMAX OUTPUT</th> </tr> </thead> <tbody> <tr> <td>Longer than fixed freq.</td> <td>"P2VREF"</td> </tr> <tr> <td>Shorter than fixed freq.</td> <td>"Vss"</td> </tr> <tr> <td>Within the fixed freq.</td> <td>"HiZ"</td> </tr> </tbody> </table> | DIFFERENCE RESULT | TMAX OUTPUT | Longer than fixed freq. | "P2VREF" | Shorter than fixed freq. | "Vss" | Within the fixed freq. | "HiZ" | 3-state output (P2VREF,HiZ,Vss) | | | | | | | |
| DIFFERENCE RESULT | TMAX OUTPUT | | | | | | | | | | | | | | | | | | |
| Longer than fixed freq. | "P2VREF" | | | | | | | | | | | | | | | | | | |
| Shorter than fixed freq. | "Vss" | | | | | | | | | | | | | | | | | | |
| Within the fixed freq. | "HiZ" | | | | | | | | | | | | | | | | | | |

| PIN No. | NAME | I/O | FUNCTIONAL DESCRIPTION | REMARKS |
|---------|--------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 31 | LPFN | I | LPF amplifier inverting input terminal for PLL. | Analog input. |
| 32 | LPFO | O | LPF amplifier output terminal for PLL. | Analog output. |
| 33 | PVREF | - | PLL reference voltage supply terminal. | - |
| 34 | VCOREF | I | VCO center frequency reference level terminal. Normally, keep at "PVREF" level. | - |
| 35 | VCOF | O | VCO filter terminal. | Analog output. |
| 36 | AVSS | - | Analog GND terminal. | - |
| 37 | SLCO | O | Data slice level output terminal. | Analog output. |
| 38 | RFI | I | RF signal input terminal. | Analog input (Zin : selected by command) |
| 39 | AVDD | - | Analog power supply voltage terminal. | - |
| 40 | RFCT | I | RFRP signal center level input terminal. | Analog input (Zin : 50kΩ) |
| 41 | RFZI | I | RFRP zero cross input terminal. | Analog input. |
| 42 | RFRP | I | RF ripple signal input terminal. | Analog input. |
| 43 | FEI | I | Focus error signal input terminal. | Analog input. |
| 44 | SBAD | I | Sub-beam adder signal input terminal. | Analog input. |
| 45 | TSIN | I | Test input terminal. Normally, keep at "VREF" level. | Analog input. |
| 46 | TEI | I | Tracking error signal input terminal. Track in at tracking servo on. | Analog input. |
| 47 | TEZI | I | Tracking error zero cross input terminal. | Analog input (Zin : 10kΩ) |
| 48 | FOO | O | Focus servo equalizer output terminal. | Analog output (2VREF~AVSS) |
| 49 | TRO | O | Tracking servo equalizer output terminal. | - |
| 50 | VREF | - | Analog reference voltage supply terminal. | - |
| 51 | RFGC | O | RF amplitude adjustment control signal output terminal. | 3-state PWM signal output. (2VREF, VREF, VSS) (PWM carrier = 88.2 kHz) |
| 52 | TEBC | O | Tracking balance control signal output terminal. | |
| 53 | TEBC | O | Feed equalizer output terminal. | |
| 54 | TEBC | O | Speed error signal or feed search equalizer output terminal. | 3-state PWM signal output. (2VREF, VREF, VSS) |
| 55 | DMO | O | Disk equalizer output terminal. (PWM carrier = 88.2 kHz for DSP, Synchronize to PXO) | |
| 56 | 2VREF | - | Analog double reference voltage supply terminal. | - |
| 57 | SEL | O | APC circuit ON/OFF indication signal output terminal. At the laser on time, UHF = L at "HiZ" level and UHF = H at "H" level. | - |
| 58 | FLGA | O | External flag output terminal for internal signal. Can select signal from TEZC, FOON, FOK and RFZC by command. | - |
| 59 | FLGB | O | External flag output terminal for internal signal. Can select signal from DECT, FOON, FMON and RFZC by command. | - |
| 60 | FLGC | O | External flag output terminal for internal signal. Can select signal from TRON, TRSR, FOK and SRCH by command. | - |
| 61 | FLGD | O | External flag output terminal for internal signal. Can select signal from TRON, DMON, HYS and SHC by command. | - |
| 62 | VDD | - | Digital power supply voltage terminal. | - |
| 63 | VSS | - | Digital GND terminal. | - |
| 64 | IO0 | I/O | General I/O terminal. Can change over input port or output port by command. At the input mode time can readout a state of terminal (H/L) by read command. At the output mode time can control a state of terminal (H/L/HiZ) by command. | - |
| 65 | IO1 | | | |
| 66 | IO2 | | | |
| 67 | IO3 | | | |

| PIN No. | NAME | I/O | FUNCTIONAL DESCRIPTION | REMARKS |
|---------|---------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| 68 | $\overline{\text{DMOUT}}$ | I | This terminal controls IO0~IO3 terminal. At "L" level time, IO0, 1 out feed equalizer signal of 2-state PWM. IO2, 3 out disk equalizer signal of 2-state PWM. | With pull-up resistor. |
| 69 | $\overline{\text{CKSE}}$ | I | Normally, keep at open. | With pull-up resistor. |
| 70 | $\overline{\text{DACT}}$ | I | DAC test mode terminal. Normally, keep at open. | With pull-up resistor. |
| 71 | TESIN | I | Test input terminal. Normally, keep at "L" level. | Analog input. |
| 72 | TESIO1 | I | Test input/output terminal. Normally, keep at "L" level. | Analog input. |
| 73 | Vss | - | Digital GND terminal. | - |
| 74 | PXI | I | Crystal oscillator connecting input terminal for DSP. Normally, keep at "L" level. | - |
| 75 | PXO | O | Crystal oscillator connecting output terminal for DSP. | - |
| 76 | VDD | - | Digital power supply voltage terminal. | - |
| 77 | XVss | - | Oscillator GND terminal for system clock. | - |
| 78 | XI | I | Crystal oscillator connecting input terminal for system clock. | - |
| 79 | XO | O | Crystal oscillator connecting output terminal for system clock. | - |
| 80 | XVDD | - | Oscillator power supply voltage terminal for system clock. | - |
| 81 | DVSR | - | Analog GND terminal for DA converter. (R-ch) | - |
| 82 | RO | O | R channel data forward output terminal. | - |
| 83 | DVDD | - | Analog supply voltage terminal for DA converter. | - |
| 84 | DVR | - | Reference voltage terminal for DA converter. | - |
| 85 | LO | O | L channel data forward output terminal. | - |
| 86 | DVSL | - | Analog GND terminal for DA converter. (L-ch) | - |
| 87 | TEST1 | I | Test mode terminal. Normal, keep at open. | With pull-up resistor. |
| 88 | TEST2 | I | Test mode terminal. Normal, keep at open. | With pull-up resistor. |
| 89 | TEST3 | I | Test mode terminal. Normal, keep at open. | With pull-up resistor. |
| 90 | BUS0 | I/O | Microm interface data input/output terminal. | Schmitt input. With pull-up resistor. |
| 91 | BUS1 | I/O | | |
| 92 | BUS2 | I/O | | |
| 93 | BUS3 | I/O | | |
| 94 | VDD | - | Digital Ppower supply voltage terminal. | - |
| 95 | Vss | - | Digital GND terminal. | - |
| 96 | BUCK | I | Microm interface clock input terminal. | Schmitt input. |
| 97 | $\overline{\text{CCE}}$ | I | Command and data sending/receiving chip enable signal input terminal. The bus line becomes active at "L" level. | Schmitt input. |
| 98 | TEST4 | I | Test mode terminal. Normal, keep at open. | With pull-up resistor. |
| 99 | $\overline{\text{TSMOD}}$ | I | Local test mode selection terminal. | With pull-up resistor. |
| 100 | $\overline{\text{RST}}$ | I | Reset signal input terminal. Reset at "L" level. | With pull-up resistor. |



WIRING DIAGRAM

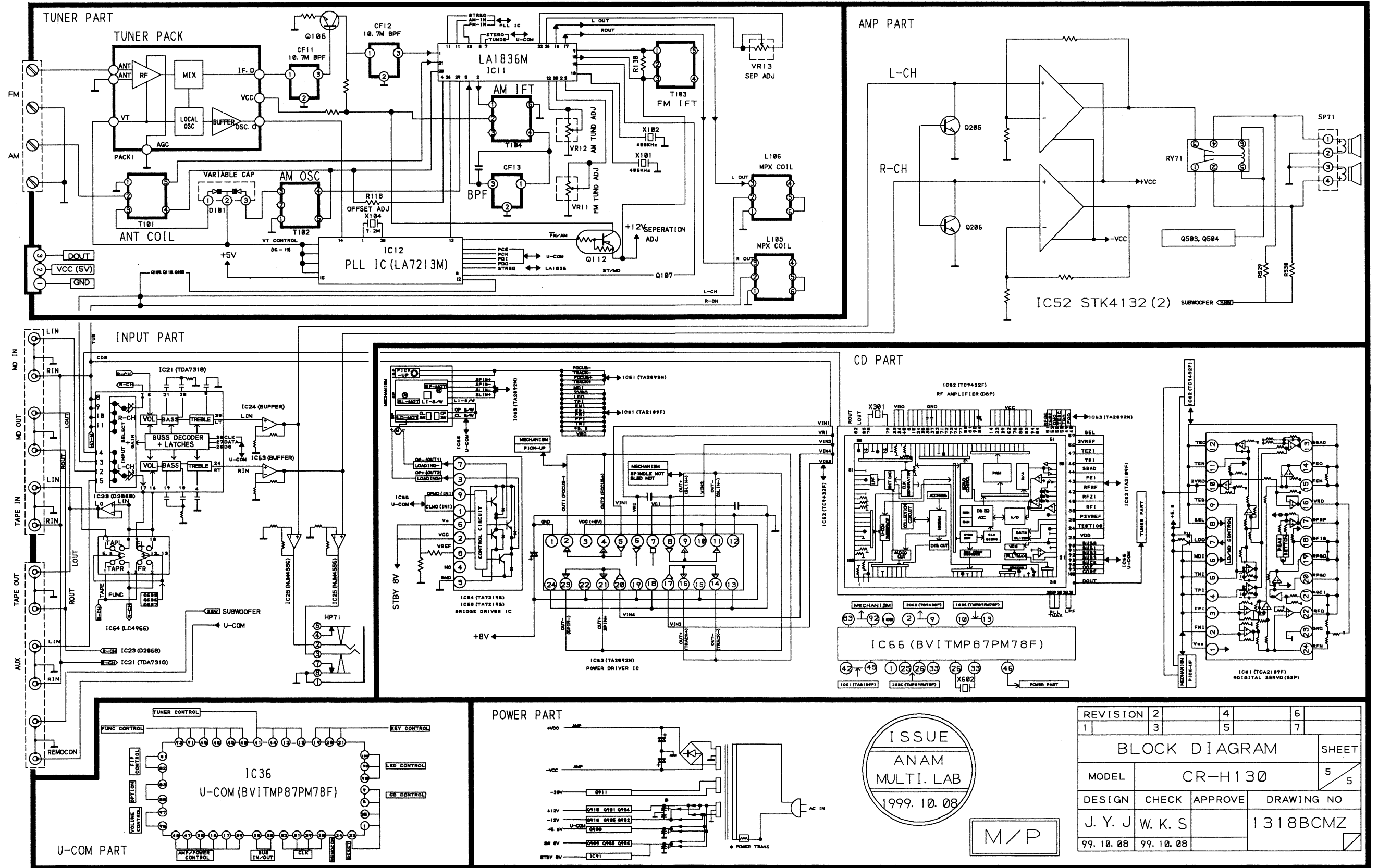


M/P

ISSUE
ANAM
MULTI. LAB
99.10.08

| | | | |
|----------------|------------------|---------|------------|
| REVISION | 2 | 4 | 6 |
| | 3 | 5 | 7 |
| WIRING DIAGRAM | | | SHEET |
| MODEL | CR-H130 (WIRING) | | |
| DESIGN | CHECK | APPROVE | DRAWING NO |
| H. S. H | W. K. S | | 1318WCMZ |
| 99.10.08 | 99.10.08 | | 1/1 |

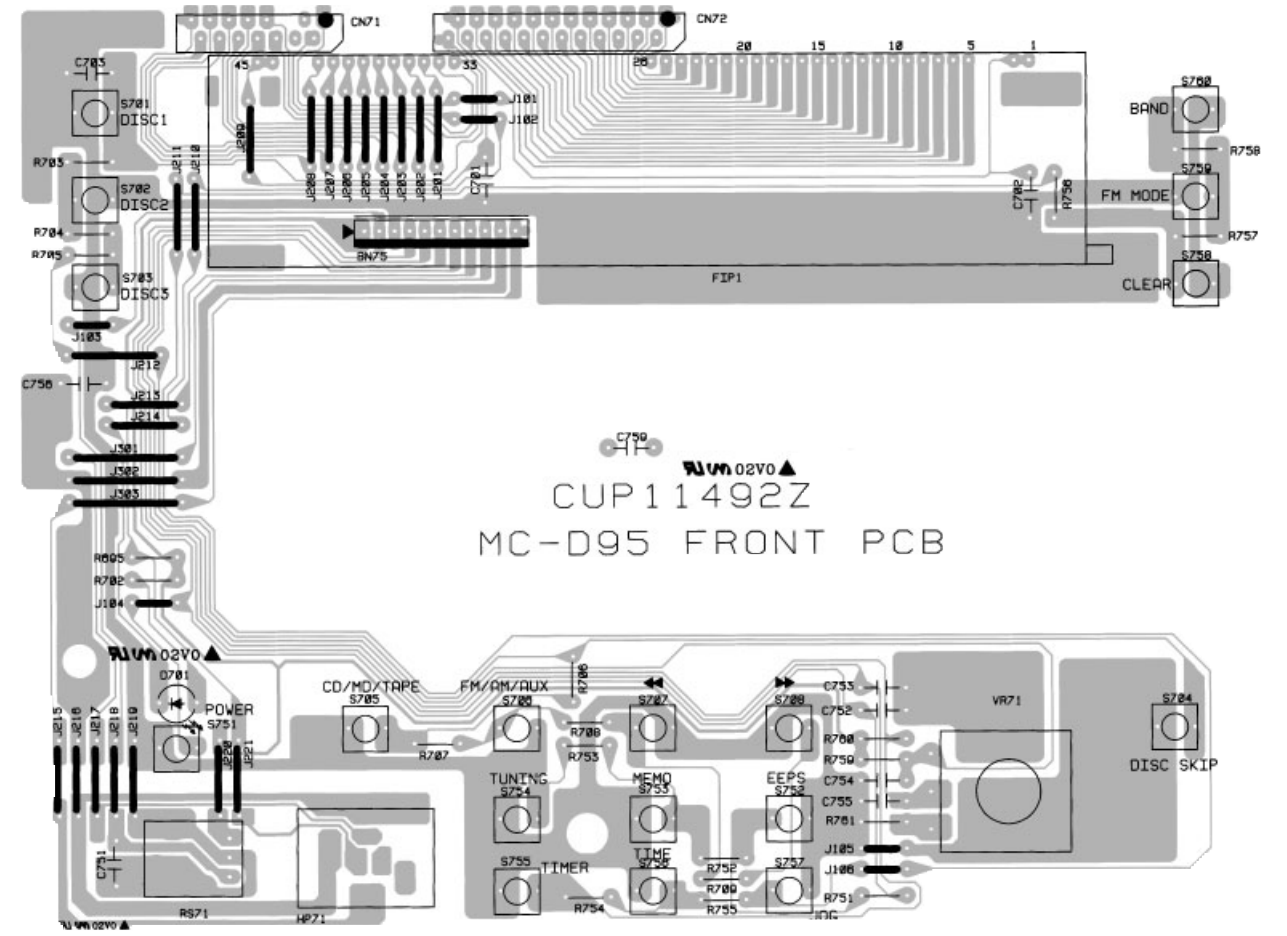
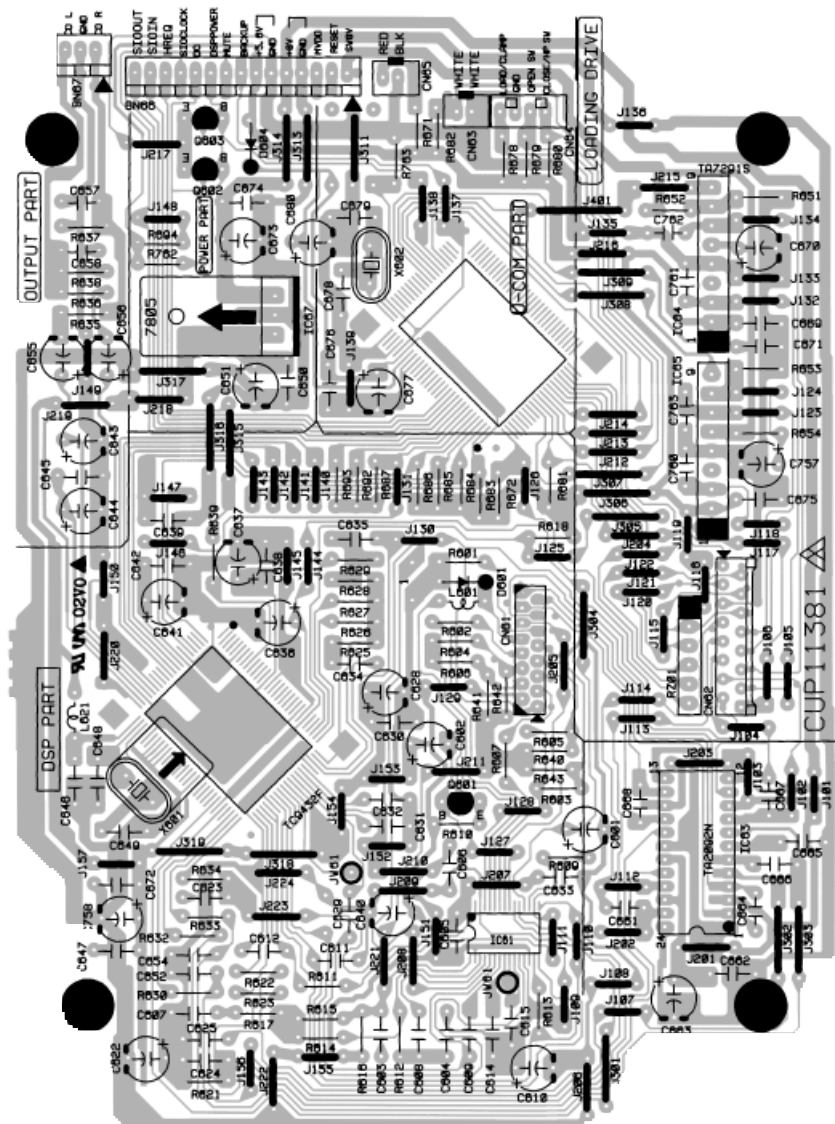
BLOCK DIAGRAM



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1999. 10. 08

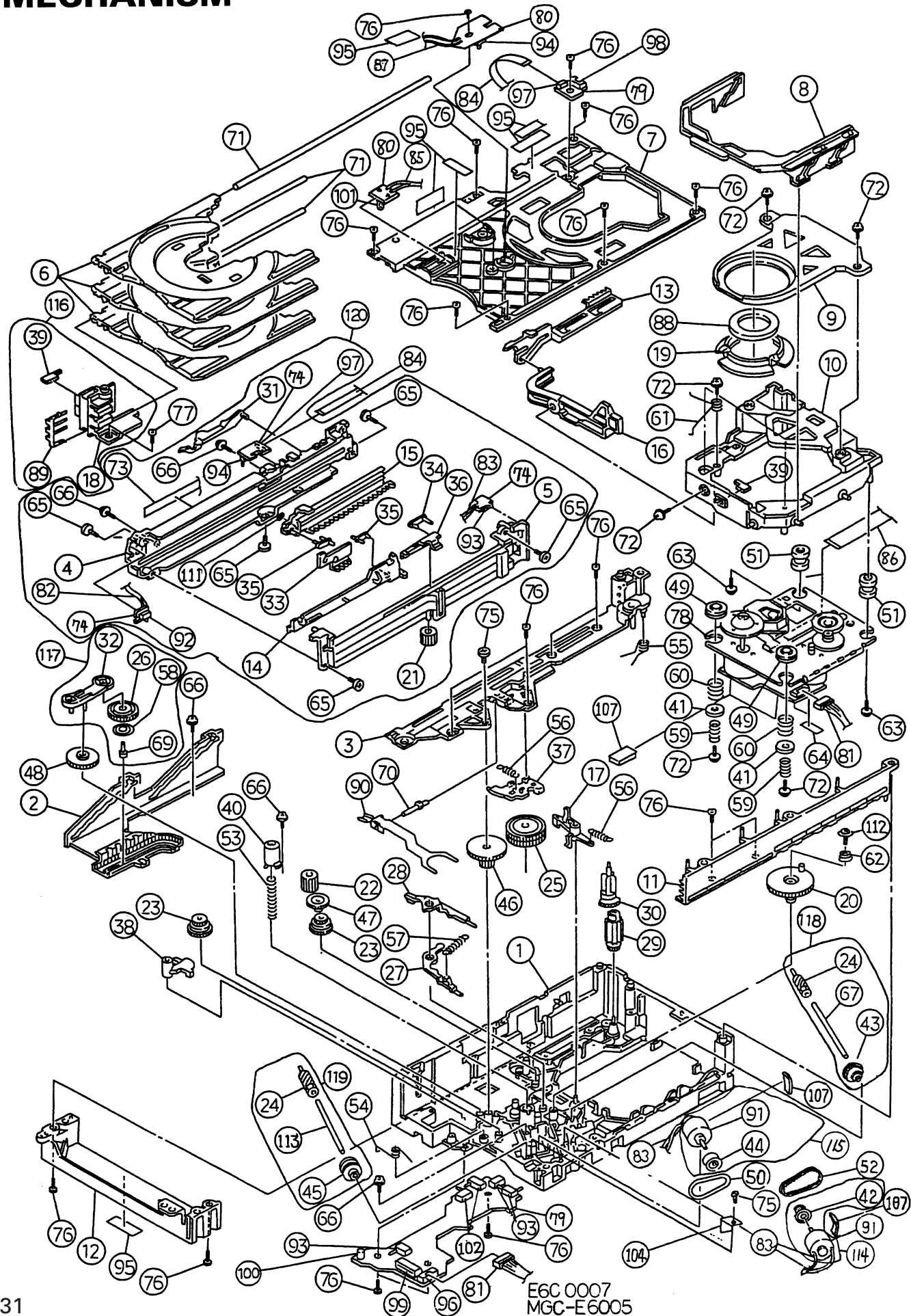
M/P

| | | | |
|---------------|------------|---------|------------|
| REVISION | 2 | 4 | 6 |
| 1 | 3 | 5 | 7 |
| BLOCK DIAGRAM | | | SHEET |
| MODEL | CR-H130 | | 5 |
| DESIGN | CHECK | APPROVE | DRAWING NO |
| J. Y. J | W. K. S | | 1318BCMZ |
| 99. 10. 08 | 99. 10. 08 | | |



 02V0
CUP11492Z
MC-D95 FRONT PCB

MECHANISM



E6C 0007
MGC-E6005

MECHANISM VIEW-1 [MGC-E6005]

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|----------|------------|-----------------------|----------|
| 1- 1 | 9A08349800 | CHASSIS (MAIN) | E6A 3011 |
| 1- 2 | 9A08349900 | SLIDER (LIFT-L) | E6B 3032 |
| 1- 3 | 9A08350000 | SUB CHASSIS (L) | E6B 3038 |
| 1- 4 | 9A08350100 | HOLDER (LOAD-B) | E6B 3030 |
| 1- 5 | 9A08350200 | HOLDER (LOAD-A) | E6B 3029 |
| 1- 6 | 9A08350300 | TRAY | E6B 3043 |
| 1- 7 | 9A08350400 | HOLDER (TOP) | E6A 3033 |
| 1- 8 | 9A08350500 | SLIDER (TU) | E6B 3031 |
| 1- 9 | 9A08350600 | HOLDER (CLAMP) | E6C 3022 |
| 1-10 | 9A08350700 | FRAME (TU-A) | E6B 3021 |
| 1-11 | 9A08350900 | SUB CHASSIS (R) | E6B 3020 |
| 1-12 | 9A08351000 | BRACKET (M) | E6B 3044 |
| 1-13 | 9A08351100 | SLIDER (CLAMP) | E6C 3017 |
| 1-14 | 9A08351200 | SLIDER (LOAD) | E6C 3025 |
| 1-15 | 9A08351300 | SLIDER (OPEN) | E6C 3024 |
| 1-16 | 9A08351400 | LEVER (CLAMP) | E6C 3034 |
| 1-17 | 9A08351500 | LEVER (SW4) | E6C 3036 |
| 1-18 | 9A08351600 | HOLDER (SHAFT) | E6C 3039 |
| 1-19 | 9A08351800 | CLAMPER | E6C 3041 |
| 1-20 | 9A08351900 | CAM (TU) | E6C 3014 |
| 1-21 | 9A08352100 | GEAR (LOAD-A) | E6D 3001 |
| 1-22 | 9A08352200 | GEAR (LOAD-B) | E6D 3002 |
| 1-23 | 9A08352400 | GEAR (HELICAL) | E6D 3004 |
| 1-24 | 9A08352500 | GEAR (WORM) | E6D 3005 |
| 1-25 | 9A08352600 | GEAR (IDLER-B) | E6D 3007 |
| 1-26 | 9A08352700 | GEAR (FRICTION) | E6D 3008 |
| 1-27 | 9A08352800 | LEVER (SW5) | E6D 3012 |
| 1-28 | 9A08352900 | LEVER (SW6) | E6D 3013 |
| 1-29 | 9A08353000 | GEAR (TU) | E6D 3015 |
| 1-30 | 9A08353100 | GEAR (ZENEBA) | E6D 3016 |
| 1-31 | 9A08353200 | LEVER (CLOSE SWITCH) | E6D 3018 |
| 1-32 | 9A08353300 | ARM (FRICTION) | E6D 3019 |
| 1-33 | 9A08353400 | SLIDER (CENTER) | E6D 3023 |
| 1-34 | 9A08353500 | LEVER (LIMIT-A) | E6D 3026 |
| 1-35 | 9A08353600 | LEVER (LIMIT-B) | E6D 3027 |
| 1-36 | 9A08353700 | SLIDER (TRAY) | E6D 3028 |
| 1-37 | 9A08353800 | SLIDER (SW-8) | E6D 3035 |
| 1-38 | 9A08353900 | LEVER (SW-7) | E6D 3037 |
| 1-39 | 9A08354000 | ARM (TRAY LOCK) | E6D 3040 |
| 1-40 | 9A08354100 | GUIDE (DISC) | E6D 3042 |
| 1-41 | 9A08354200 | COLLAR (SPRING) | E6D 3045 |
| 1-42 | 9A08354300 | MOTOR PULLEY (TIMING) | E6D 3058 |
| 1-43 | 9A08354400 | PULLEY (TIMING) | E6D 3059 |
| 1-44 | 9A08354500 | PULLEY (MOTOR-A) | E6D 3006 |
| 1-45 | 9A08354600 | PULLEY (MOTOR) | C3D 3009 |
| 1-46 | 9A08354700 | GEAR (CENTER-B) | E6D 3010 |
| 1-47 | 9A08354800 | GEAR (IDLER) | E6D 3003 |
| 1-48 | 9A08354900 | GEAR (CENTER-A) | E6D 3009 |
| 1-49 | 9A08355000 | INSULATOR | C3D 4003 |
| 1-50 | 9A08355100 | BELT (LIFT) | E6D 4003 |

MECHANISM VIEW-1 [MGC-E6005]

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|----------|------------|-----------------------------|------------|
| 1-51 | 9A08355300 | INSULATOR | E6D 4004 |
| 1-52 | 9A08355400 | BELT (TIMING) | E6D 4005 |
| 1-53 | 9A08355600 | COMPRESSION SP (GUIDE) | E6D 6001 |
| 1-54 | 9A08355700 | TORSION SPRING (LOCK) | E6D 6002 |
| 1-55 | 9A08355800 | TORSION SPRING (ZENEBA) | E6D 6003 |
| 1-56 | 9A08355900 | EXTENSION SP (SWITCH) | E6D 6004 |
| 1-57 | 9A08356000 | EXTENSION SPRING (CAM) | E6D 6005 |
| 1-58 | 9A08356100 | COMPRESSION SP (FRICTION) | E6D 6006 |
| 1-59 | 9A08356200 | COMPRESSION SP (TU-A) | E6D 6007 |
| 1-60 | 9A08356300 | COMPRESSION SP (TU-B) | E6D 6008 |
| 1-61 | 9A08356500 | TORSION SP (ASSIST-A) | E6D 6009 |
| 1-62 | 9A08356600 | COMPRESSION SP (CAM) | E6D 6012 |
| 1-63 | 9A08356800 | SCREW (B) | E1D 8002 |
| 1-64 | 9A08356900 | SOFT TAPE | E1D 8003 |
| 1-65 | 9A08357100 | SCREW (TRAY) | E1D 8004 |
| 1-66 | 9A08357200 | SCREW (A2) | E1D 8012 |
| 1-67 | 9A08357400 | SHAFT (WORM-A) | E1D 8001 |
| 1-68 | | VACANT | |
| 1-69 | 9A08357500 | SHAFT (FRICTION) | E6D 8003 |
| 1-70 | 9A08357600 | SHAFT (LEVER) | E6D 8004 |
| 1-71 | 9A08357700 | SHAFT (TRAY) | E6D 8005 |
| 1-72 | 9A08357800 | SCREW (FRAME) | E6D 8006 |
| 1-73 | 9A08369800 | COVER (WIRE) | E6D 8007 |
| 1-74 | 9A08357900 | PCB (SUB-C) | E6B 9031 |
| 1-75 | 9A08358000 | SCREW (SUB-L) | E6D 8011 |
| 1-76 | 9A08358100 | BIND TAPPING SCREW 2.6*8 | 8114512608 |
| 1-77 | 9A08358200 | BIND TAPPING SC 2.6*8 (BL) | 8114522608 |
| 1-78 | 9A08358300 | KCTB1H | D40-1500 |
| 1-79 | 9A08358600 | PCB (MAIN-B) | E6B 9021 |
| 1-80 | 9A08358700 | PCB (SUB-B) | E6B 9022 |
| 1-81 | 9A08358800 | WIRING HARNESS (TU) | E6D 9003 |
| 1-82 | 9A08358900 | WIRING HARNESS (SW1) | E6D 9004 |
| 1-83 | 9A08359000 | WIRING HARNESS (SW2) | E6D 9005 |
| 1-84 | 9A08359100 | 4P FFC | E6D 9006 |
| 1-85 | 9A08359300 | WIRING HARNESS (LED-C) | E6D 9032 |
| 1-86 | 9A08359400 | 16P FFC | E6D 9002 |
| 1-87 | 9A08359500 | WIRING HARNESS (JAM) | E6D 9018 |
| 1-88 | 9A08359600 | MAGNET | T99-0544 |
| 1-89 | 9A08359700 | FLAT SPRING | E6D 1002 |
| 1-90 | 9A08359800 | LEVER (GUIDE) | E6C 1001 |
| 1-91 | 9A08359900 | MOTOR MM05B | 91542142 |
| 1-92 | 9A08360000 | SWITCH MUP10371MLB0 | 94081102 |
| 1-93 | 9A08360300 | SWITCH MUP10252MLB1 | 94081103 |
| 1-94 | 9A08360400 | SWITCH MUP10184MLB1 | 94081104 |
| 1-95 | 9A08360500 | FILAMENT TAPE W1.5CM | 96901032 |
| 1-96 | 9A08360600 | CONNECTOR S6B-PH | 99054172 |
| 1-97 | 9A08360700 | CONNECTOR 04FM-1.0ST | 99054177 |
| 1-98 | 9A08360800 | CONNECTOR S4B-PH-K-S | 99054179 |
| 1-99 | 9A08360900 | CONNECTOR 16FE-ST | 99054180 |
| 1-100 | 9A08361200 | PHOTO TRANSISTOR RPT-38PT3F | 99518074 |

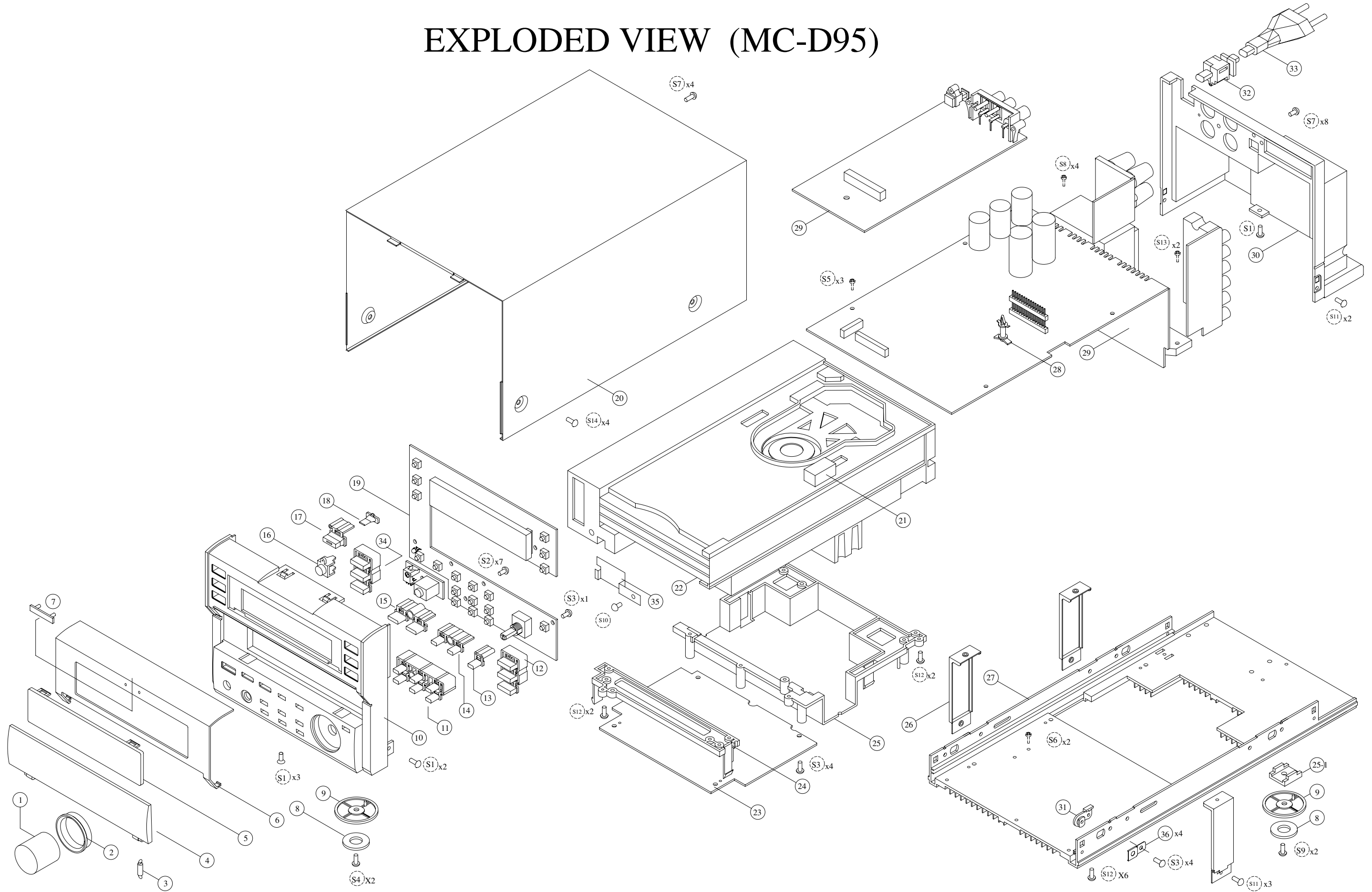
MECHANISM VIEW-1 [MGC-E6005]

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|----------|------------|---------------------------|------------|
| 1-101 | 9A08361300 | LED SIR-33ST3 | 99518207 |
| 1-102 | 9A08361400 | SWITCH SPPB62 | S40-1139 |
| 1-103 | | VACANT | |
| 1-104 | 9A08361700 | FLAT SPRING (WORM) | E6D 1006 |
| 1-105 | | VACANT | |
| 1-106 | | VACANT | |
| 1-107 | 9A08361800 | CUSHION | E1D 8007 |
| 1-108 | | VACANT | |
| 1-109 | | VACANT | |
| 1-110 | | VACANT | |
| 1-111 | 9A08362100 | POLYSLIDER WASHER M2.1*M5 | 8342121030 |
| 1-112 | 9A08362200 | SCREW (A3) | E6D 8014 |
| 1-113 | 9A08362300 | SHAFT (WORM-C) | E6D 2002 |
| 1-114 | 9A08362400 | MOTOR ASSY (E6D 9028) | E6D 9028 |
| 1-115 | 9A08362500 | MOTOR ASSY (E6D 9027) | E6D 9027 |
| 1-116 | 9A08362600 | HOLDER (SHAFT) ASSY | E6D 3061 |
| 1-117 | 9A08362700 | GEAR (FRICTION) ASSY | E6D 3050 |
| 1-118 | 9A08362800 | WORM (A) ASSY | E6D 3048 |
| 1-119 | 9A08362900 | WORM (B) ASSY | E6D 3049 |
| 1-120 | 9A08363001 | HOLDER (LOAD) ASSY | E6A 3060 |

INCLUDED ACCESSORIES

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|----------|------------|---------------------------|-----------------|
| | 9A09333610 | INSTRUCTION MANUAL ASS'Y | COXMCD95T/CCC |
| | 9A07871200 | REMOCON TRANSMITTER ASS'Y | CARTCR-H100TCCC |
| | 9A08046100 | ADAPTOR, 75-300 (NTSC) | KLR1T201 |
| | 9A08880800 | ANT, FM.T(LUG TYPE) | CSA267 |
| | 9A08880900 | AM LOOP ANTENNA ASS'Y | CSA3A012Z |
| | 9A08903000 | OWNER'S MNL,E/F MC-D95 | COX1A747Z |
| | 9A09343300 | SPEAKER SYSTEM | CLS-MC95CC |

EXPLODED VIEW (MC-D95)



EXPLODED VIEW-2

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|----------|--------------|---------------------------|-----------------|
| 2- 1 | 9A09341600 | KNOB,VOLUME | CBN1A150M7K101 |
| 2- 2 | 9A08563100 | ORNAMET,VOLUME | KGR1A202MBC22 |
| 2- 3 | 9A08877600 | SPRING,DOOR | KUS1A124 |
| 2- 4 | 9A09342700 | ORNAMENT , DOOR | CGR1A257M7ZK101 |
| 2- 5 | 9A09342800 | WINDOW , FIP | CGU1A273 |
| 2- 6 | 9A09342500 | ORNAMENT , FRONT | CGK1A075ZC25 |
| 2- 7 | 9A08127900 | BADGE,TEAC | KGB1A080Z |
| 2- 8 | 9A07889500 | CUSHION,FOOT | KHG1A165 |
| 2- 9 | 9A07872900 | FOOT | CKL1A059M9K63 |
| 2-10 | 9A09342900 | FRONT PANEL | CGW1A329M7ZK101 |
| 2-11 | 9A09342100 | KNOB,MODE | CBT1A797M7K101 |
| 2-12 | 9A09341800 | KNOB,BAND | CBT1A794M7ZK101 |
| 2-13 | 9A09342300 | KNOB,SKIP | CBT1A799M7K101 |
| 2-14 | 9A09342200 | KNOB,TUNING | CBT1A798M7K101 |
| 2-15 | 9A09342000 | KNOB,CD | CBT1A796M7K101 |
| 2-16 | 9A08562700 | WINDOW,SENSOR | CGU1A241 |
| 2-17 | 9A09341900 | KNOB,POWER | CBT1A795M7K101 |
| 2-18 | 9A09342600 | INDICATOR , POWER | CGL1A196 |
| 2-19 | 9A09333310 | FRONT PCB ASS'Y T/C | COP11492B |
| 2-20 | 9A09091700 | CABINET, TOP | CKC1B107S35 |
| 2-21 | 9A06327100 | SUPPORT,CUSHION | KHG1A104 |
| 2-22 | 9A08214800 | 3CD MECHANISM [MGC-E6005] | CJDMGCE6005 |
| 2-23 | 9A08878000 | CD PCB ASS'Y EX-CD3 | COP11381C |
| 2-24 | 9A08215100 | SUPPORT,MECHA(A) | CMH1A104 |
| 2-25 | 9A08215200 | SUPPORT,MECHA(B) | CMH1A105 |
| 2-26 | 9A08879600 | BRACKET,PCB | CMD1A405 |
| 2-27 | 9A08217100 | CHASSIS,BOTTOM | CUA1A180 |
| 2-28 | 9A05963800 | SUPPORT,PCB | KRE1A018 |
| 2-29 | 9A08879700 | MAIN PCB ASS'Y EX-CD3TCCC | COP11318F |
| 2-30 | 9A08563400 | CABINET,REAR | CKD1A031Y |
| 2-31 | 9A07873500 | LOCKER, TOP | CMH1A088 |
| 2-32 | △ 9A06754900 | BUSHING,AC CORD | KHR1A028 |
| 2-33 | △ 9A07872600 | POWER,CORD | CJA523FBY |
| 2-34 | 9A09341700 | KNOB,DISC | CBT1A794M7K101 |
| 2-35 | 9A08219100 | COVER , MECHA | KGX1A285 |
| 2-36 | 9A08879400 | PLATE,SHIELD | CMC1A166 |
| F 902 | △ 9A07888700 | FUSE 2A , 250V F902 | KBA2C2000TLU |
| S 1 | 9A09332600 | SCREW,CTS3+8J | CTS3+8J |
| S 2 | 9A09331900 | SCREW,CTB3+10G | CTB3+10G |
| S 3 | 9A09332400 | SCREW,CTB3+8G | CTB3+8G |
| S 4 | 9A09330900 | SCREW,CTW3+8G | CTW3+8G |
| S 5 | 9A09332900 | SCREW,CTW3+6J | CTW3+6J |
| S 6 | 9A09330600 | SCREW,CTB3+8J | CTB3+8J |
| S 7 | 9A09343700 | SCREW | CTB3+10GFC |
| S 8 | 9A09332500 | SCREW,CTB4+8F | CTB4+8F |
| S 9 | 9A09330800 | SCREW,CTW3+10J | CTW3+10J |
| S10 | 9A05984200 | SCREW | KTB3+8GFZ |
| S11 | 9A01420500 | SCREW,KTB3*8G | KTB3+8G |
| S12 | 9A06555100 | SCREW,KTB3+12G | KTB3+12G |
| S13 | 9A09343900 | SCREW | CTW3+14J |

■ RESISTORS AND CAPACITORS

Notes : • Part numbers are indicated for most mechanical parts.

Please use this part number for parts order.

• **IMPORTANT SAFETY NOTICE.**

Components identified by \triangle mark have special characteristics important for safety.

When replacing any of these components, use only manufacture's specified parts.

• The unit of resistance is OHM(Ω)

K=1000(Ω), M=1000(K Ω)

• The unit of capacitance is MICROFARED(μ F)

P=10⁻⁶ μ F

■ Numbering System of Resistor

Example

CRD 25 F J 101
 Type Wattage Shape Tolerance Value

| Resistor Type | Wattage | Tolerance |
|-------------------|---------|---------------|
| CRD: Carbon | 20:1/5W | F:= \pm 1% |
| CRG: Metal Oxide | 25:1/4W | J:= \pm 5% |
| | 50:1/2W | K:= \pm 10% |
| | 1:1W | |
| CRF: Metal Cement | 2:2W | |
| | 3:3W | |

■ Numbering System of Capacitor

Example

HCKR 1H 101 K B
 Type Voltage Value Tolerance Peculiarity

| Capacitor Type | Voltage | | Tolerance |
|---------------------|-----------|------------|-----------------|
| | ECEA Type | Other | |
| HCB: Ceramic | 0J:6.3V | 1H:50V DC | C: \pm 0.25pF |
| HCC: Ceramic | 1A:10V | 1:125V DC | G: \pm 2% |
| HCK: Ceramic | 1C:16V | KC:400V AC | J: \pm 5% |
| HCQI: Polyester | 1E:25V | | K: \pm 10% |
| HCQP: Polypropylene | 1H:50V | | Z: +80%, -20% |
| HCQS: Polystyrol | 1V:35V | | |

MAIN PCB ASS'Y

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|------------|--------------|----------------------------|-----------------|
| | 9A08215500 | MAIN PCB ASS'Y TCA | COP11318B |
| | 9A08217300 | MAIN PCB | CUP11318Y |
| C 124 | 9A07886400 | CAP, STYROLE | HCQS1H471JZ |
| C 127 | 9A01405900 | C, VARIABLE 20PF A020S12 | KCRA020S12 |
| C 129 | 9A07882400 | CAP, ELECT 100UF/16V | HCEA1CH101T |
| C 139 | 9A07882400 | CAP, ELECT 100UF/16V | HCEA1CH101T |
| C 143 | 9A07882300 | CAP, ELECT 470/10V | HCEA1AH471T |
| C 925 .926 | 9A07897000 | CAP, ELECT HCEA1CH471T | HCEA1CH471T |
| C 927 .928 | 9A07882400 | CAP, ELECT 100UF/16V | HCEA1CH101T |
| C 929 | 9A07897000 | CAP, ELECT HCEA1CH471T | HCEA1CH471T |
| C 930 | 9A07882400 | CAP, ELECT 100UF/16V | HCEA1CH101T |
| C 931 | 9A08218500 | CAP, ELECT | HCEA1EH331T |
| C 933 | 9A07883800 | CAP, ELECT 47/50V | HCEA1HH470T |
| C 940 -942 | △ 9A07884300 | CAP, ELECT 2200/35V | HCEA1VH222E |
| CF11 .12 | 9A06544600 | FILTER, CERAMIC E107MSHAT | BVFE107MSHAT |
| CF13 | 9A07006300 | FILTER CERAMIC PBF450JR3 | BVFPFB450JR3 |
| CN10 | 9A06250600 | WAFER 02GA19ZM | KJP02GA19ZM |
| CN12 | 9A08220100 | HOUSING 42140(15PIN) | KJP15HA37ZM |
| CN21 | 9A07889700 | WAFER MOLEX35336-0610 | KJP06GA98ZM |
| CN22 | 9A08219800 | WAFER | KJP11GA98ZM |
| CN51 | 9A08219600 | WAFER 53291(5PIN) | KJP05GA102ZM |
| CN66 | 9A06251000 | WAFER | KJP15GA19ZM |
| CN67 | 9A05938500 | WAFER, 3P | KJP03GA19ZM |
| CN71 | 9A08220000 | WAFER, CARD CABLE | KJP15GA115ZG |
| CN72 | 9A08220500 | WAFER, CARD CABLE | KJP24GA115ZG |
| CN75 | 9A05330900 | WAFER MOLEX-53014 | KJP11GA19ZM |
| CN91 .92 | 9A05329100 | WAFER MOLEX 5267-03A | KJP03GA01ZM |
| D 101 | 9A08163000 | DIODE, VARICAP | HVDSVC342LT |
| D 103 .105 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| D 201 .202 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| D 355 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| D 361 -364 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| D 366 -369 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| D 501 | △ 9A06224900 | DIODE , BRIDGE PBU604F | BVDPBU604F |
| D 502 -506 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| D 901 -910 | 9A05194700 | DIODE, 1N4003ST | KVD1N4003ST |
| D 915 .916 | △ 9A07886900 | DIODE, ZENER 13V ZENER | HVDMTZJ13BT |
| D 917 .919 | △ 9A07887100 | DIODE, ZENER 6.2V ZENER | HVDMTZJ6.2BT |
| D 920 | △ 9A08221500 | DIODE, ZENER | KVDMTZJ9.1BMT |
| D 921 | △ 9A07887000 | DIODE, ZENER 33V 1/2W | HVDMTZJ33BT |
| D 922 .923 | 9A05194700 | DIODE, 1N4003ST | KVD1N4003ST |
| ET01 | 9A05333900 | PLATE, EARTH | KNE75 |
| F 901 | 9A05328200 | HOLDER, FUSE KJCF5S | KJCF5S |
| IC11 | 9A08163100 | IC, (IF+MPX) LA1836M | HVILA1836M |
| IC12 | 9A08163300 | IC, PLL LC72131M | HVILC72131M |
| IC21 | 9A05425000 | IC (VOLUME+FUNCTION) | BVITDA7318D |
| IC22 | 9A08163200 | IC, LC4966 | HVILC4966 |
| IC23 .24 | 9A08163400 | IC, OP AMP NJM2068MD | HVINJM2068MDTE1 |
| IC25 | 9A08163500 | IC, NJM4556AL | HVINJM4556AL |
| IC36 | 9A08883000 | I.C, U-COM(MAIN) | HVIANAM1301AT |
| IC37 | 9A06878400 | VOLTAGE DETECTOR | BVIRE5VL30CARZ |
| IC52 | 9A08163700 | IC, AMP STK4132MK2 | HVISTK4132(2) |
| IC91 | 9A06868000 | IC, NJM7808FA | BVINJM7808FA |
| JK01 | 9A08045800 | TREMINAL, ANT (T/C 75 OHM) | KJJ3G010Z |
| JK11 | 9A06239100 | MODULE, OPTICAL | BJS9L001Z |

MAIN PCB ASS'Y

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|------------|--------------|----------------------------|-----------------|
| JK21 | 9A07872700 | TERMINAL, IN/OUT | CJJ4R012Z |
| JK22 | 9A07889600 | JACK , PIN BOARD | KJJ4R018Z |
| JW21 | 9A06867500 | WIRE , ASS'Y | KWZAH300JW74 |
| JW51 | 9A07295100 | WIRE ASSS'Y | KWZAAV1100W801 |
| L 130 | 9A07886600 | COIL , AXAIL 10UH | HLO02C100KT |
| Q 101 | 9A07888400 | T.R, KTC31920T | HVTKTC31920T |
| Q 103 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 104 | 9A03745100 | TR, KSA1175-YTA | KVTKSA1175YT |
| Q 107 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 108 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 109 .110 | 9A07888500 | TR, KTD1302T | HVTKTD1302T |
| Q 201 -208 | 9A07888500 | TR, KTD1302T | HVTKTD1302T |
| Q 211 .212 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 213 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 361 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 362 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 363 | △ 9A07887900 | T.R KSB811YT | HVTKSB811YT |
| Q 367 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 368 .369 | 9A07888500 | TR, KTD1302T | HVTKTD1302T |
| Q 370 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 502 .503 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 504 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 505 .506 | △ 9A03745100 | TR, KSA1175-YTA | KVTKSA1175YT |
| Q 507 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 901 -903 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| Q 904 -906 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 908 .909 | △ 9A07888600 | T.R KTD2058Y | HVTKTD2058Y |
| Q 911 | △ 9A07888200 | T.R KTA1274YT | HVTKTA1274YT |
| Q 915 | △ 9A01388300 | TR, KSD288-Y-AB | KVTKSD288Y |
| Q 916 | △ 9A01388400 | TR, KSA614-Y | KVTKSA614Y |
| Q 917 .918 | 9A07887800 | TR, DTC114YST | HVTDTC114YST |
| Q 920 | 9A07887700 | TR, DTA114YST | HVTDTA114YST |
| R 111 | 9A07895300 | RES, CARBON CRD20TJ331T | CRD20TJ331T |
| R 255 .256 | 9A07901800 | RES, CARBON CRD20TJ4R7T | CRD20TJ4R7T |
| R 313 .314 | 9A08216800 | RES, CARBON | CRD25TJ104T |
| R 363 | 9A08216500 | RES, CARBON 1M OHM 1/5W | CRD20TJ105T |
| R 531 | 9A08125900 | RES, CARBON 20TJ153T | CRD20TJ153T |
| R 535 | △ 9A07892000 | RES, CARBON 1K OHM 1/2W | KRD50FJ102T |
| R 536 -539 | △ 9A07892100 | RES, CARBON 2.2K OHM 1/2 J | KRD50FJ222T |
| R 540 | 9A07892000 | RES, CARBON 1K OHM 1/2W | KRD50FJ102T |
| R 541 .542 | △ 9A05338000 | RES, METAL 10 OHM 1W J | KRG1ANJ100H |
| R 543 .544 | △ 9A06062000 | R, CEMENT 0.27 2W | KRF2CJR27H |
| R 901 .902 | 9A08216900 | RES , CARBON | CRD25TJ681T |
| R 904 | △ 9A07892200 | RES, METAL 330 OHM 1W J | KRG1ANJ331H |
| R 905 | △ 9A08221300 | RES, METAL 2.2 OHM 1W J | KRG1ANJ2R2H |
| R 924 | △ 9A05338100 | RES, METAL 22 OHM 1W J | KRG1ANJ220H |
| R 926 .927 | △ 9A06062000 | R, CEMENT 0.27 2W | KRF2CJR27H |
| R 928 .929 | △ 9A06760900 | R, FUSE 0.47 J 1W | KRQ1AJR47H |
| R 930 | △ 9A06761000 | R, CARBON 3.3M K 1/2W | BRDERC12UGK335T |
| RY51 | 9A06224600 | RELAY G5Z-2A-DC12V | BSL4A008ZE |
| SP51 | 9A08214900 | TERMINAL , SPEAKER | CJJ5P017Z |
| T 101 | 9A07873000 | COIL, AM ANT2 | CLA2C005 |
| T 102 | 9A07873300 | COIL, AM OSC | CLO2B008Z |
| T 103 | 9A07873200 | I.F.T, FM | CLI3B028Z |
| T 104 | 9A07873100 | I.F.T, AM | CLI2B103-G |

MAIN PCB ASS'Y

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|-----------------|------------------|----------------------------|----------------|
| T 901 | 9A07873400 | TRANS, POWER(MAIN) | CLT5P037ZU |
| TF01 | 9A08215300 | PACK , FRONT END | CNVKSTF401VA3 |
| TW91 | 9A06674400 | WAFER, 7.92MM (YUNHO) | KJP02KA060ZY |
| VR11 | 9A05940500 | R, SEMI FIXED EVNDJAA03B53 | BVN1PA502B01T |
| VR12 | 9A08040700 | RES, SEMI FIXED(22K OHM) | KVN1RA223B01T |
| VR13 | 9A08040600 | RES, SEMI FIXED(10K OHM) | KVN1RA103B01T |
| WF21 | 9A07889800 | CONNECTOR MOLEX35237-0610 | KJP06GB99ZM |
| WF22 | 9A08219900 | CONNECTOR | KJP11GB99ZM |
| WF51 | 9A08219700 | WAFER | KJP05GB103ZM |
| X 101 | 9A07491700 | RESONATOR, CERAMIC | HVFZTB456F11 |
| X 102 | 9A07491800 | FILTER, CERAMIC | HVFLZU450C4N |
| X 104 | 9A04874300 | CRYSTAL, DC-D2100 | KOX07200A200C |
| X 361 | 9A05193000 | CRYSTAL, 08000E160C | KOX08000E160C |
| X 362 | 9A05188800 | CRYSTAL, 32,768KHZ DT-38 | BOX00032A120C |

CD PCB ASS'Y

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|-----------|------------|----------------------------|---------------|
| | 9A08563300 | CD PCB ASS'Y | COP11381B |
| | 9A08564000 | CD PCB | CUP11381Z |
| BN66 | 9A08222000 | WIRE ASS'Y | KWDB015150EW |
| BN67 | 9A08222200 | WIRE ASS'Y | KWZCR130BN67 |
| CN61 | 9A08220300 | WAFER , CARD CABLE (STRAI) | KJP16GA117ZG |
| CN62 | 9A08220400 | WAFER, CARD CABLE (ANGLE) | KJP16GB116ZG |
| CN63 | 9A08219500 | WAFER | KJP02GA68ZG |
| CN64 | 9A07335100 | WAFER MOLEX 53015 | KJP04GB46ZM |
| CN65 | 9A08219500 | WAFER | KJP02GA68ZG |
| D601, 604 | 9A07887200 | DIODE 1SS131M | HVD1SS131MT |
| IC61 | 9A08563900 | IC, RF AMP DIGITAL SERVO | HVITA2150FN |
| IC62 | 9A07887600 | I.C DIGITAL SERVO TC9432A | HVITC9432AF |
| IC63 | 9A07887300 | I.C POWER DRIVER TA2092N | HVITA2092N |
| IC64, 65 | 9A07887500 | I.C TA7291S | HVITA7291S |
| IC66 | 9A09061200 | IC, U-COM ANAM1325AC | BVIANAM1325AC |
| IC67 | 9A08218600 | I.C, REGULATOR | HVIMC7805C |
| L601, 621 | 9A07886600 | COIL , AXAIL 10UH | HLO02C100KT |
| Q601 | 9A07888100 | T.R TKTA1266YT | HVTKTA1266YT |
| Q602 | 9A07888500 | TR, KTD1302T | HVTKTD1302T |
| Q603 | 9A07887800 | TR,DTC114YST | HVTDTC114YST |
| RZ01 | 9A05337800 | R, NETWORK SN5X103J | KRGSN5X103J |
| X601 | 9A04275700 | CRYSTAL, 16.9344MHZ | KOX16934A120F |
| X602 | 9A05193000 | CRYSTAL, 08000E160C | KOX08000E160C |

FRONT PCB ASS'Y

| REF. NO. | PARTS NO. | DESCRIPTION | REMARKS |
|----------|------------|------------------------|-----------------|
| | 9A09333310 | FRONT PCB ASS'Y T/C | COP11492B |
| | 9A09333500 | FRONT PCB | CUP11492Z |
| BN75 | 9A08877400 | WIRE ASS'Y | CWDB011110EW |
| CN71 | 9A08220000 | WAFER, CARD CABLE | KJP15GA115ZG |
| CN72 | 9A08220500 | WAFER, CARD CABLE | KJP24GA115ZG |
| D701 | 9A09344400 | L.E.D , YELLOW | HVD342YCTB7T089 |
| FIP1 | 9A07889000 | F.I.P SVA10MM1 | KFLSVA10MM17 |
| HP71 | 9A08126400 | JACK,HEADPHONE(SILVER) | HJJ2D003Y |
| RS71 | 9A08563600 | SENSOR,REMOCON | KRVHIM602H32 |
| VR71 | 9A08890200 | VR, ENCODER 2A004Z | HSR2A004Z |