Wi-Fi Component Hi-Fi System

MCi730/05 &12





Service Manual





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1. Technical Specifications, Directions for Use

Index of this chapter:

1.1 Technical Specifications 1.2 Directions for Use

Notes:

- Figures can deviate due to the different set executions.
- Specifications are indicative (subject to change).

1.1 Technical Specifications

For on-line product support please use the following website: <u>http://www.p4c.philips.com/cgi-bin/dcbint/cpproduct_selector.pl</u>

Here is product information available, as well as getting started, user manuals, frequently asked questions and software & drivers.

1.2 Directions for Use

You can download this information from the following websites: <u>http://www.philips.com/support</u> <u>http://www.p4c.philips.com</u>

1 - 3

2. Safety Instructions, Warnings, Notes, and Abbreviation List

Index of this chapter: 2.1 Safety Instructions 2.2 Warnings 2.3 Notes 2.4 Abbreviation List

2.1 Safety Instructions

Safety regulations require the following **during** a repair:

- Connect the set to the Mains/AC Power via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol A, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains/AC Power lead for external damage.
- Check the strain relief of the Mains/AC Power cord for proper function.
- Check the electrical DC resistance between the Mains/AC Power plug and the secondary side (only for sets that have a Mains/AC Power isolated power supply):
 - 1. Unplug the Mains/AC Power cord and connect a wire between the two pins of the Mains/AC Power plug.
 - 2. Set the Mains/AC Power switch to the "on" position (keep the Mains/AC Power cord unplugged!).
 - 3. Measure the resistance value between the pins of the Mains/AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 M Ω and 12 M Ω .
 - 4. Switch "off" the set, and remove the wire between the two pins of the Mains/AC Power plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ...). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

Measure the voltages and waveforms with regard to the chassis (= tuner) ground ([⊥]/₂), or hot ground ([↓]/₂), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).

 Where necessary, measure the waveforms and voltages with (¬□) and without (¬∞) aerial signal. Measure the voltages in the power supply section both in normal operation (①) and in stand-by (☉). These values are indicated by means of the appropriate symbols.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kΩ).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 Ω).
- All capacitor values are given in micro-farads (μ = × 10⁻⁶), nano-farads (n = × 10⁻⁹), or pico-farads (p = × 10⁻¹²).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 BGA (Ball Grid Array) ICs

Introduction

For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions). After login, select "Magazine", then go to "Repair downloads". Here you will find Information on how to deal with BGA-ICs.

BGA Temperature Profiles

For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions) You will find this and more technical information within the "Magazine", chapter "Repair downloads".

For additional questions please contact your local repair help desk.

2.3.4 Lead-free Soldering

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
 - To reach a solder-tip temperature of at least 400°C.
 - To stabilize the adjusted temperature at the solder-tip.
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilized at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch "off" unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.

2.3.5 Alternative BOM identification

It should be noted that on the European Service website, "Alternative BOM" is referred to as "Design variant".

The **third digit** in the serial number (example: KX **2**B0835000001) indicates the number of the alternative B.O.M. (Bill Of Materials) that has been used for producing the specific AV set. In general, it is possible that the same AV model on the market is produced with e.g. two different types of display, coming from two different suppliers. This will then result in sets which have the same CTN (Commercial Type Number; e.g. MCM394/12) but which have a different B.O.M. number.

Also, it is possible that same model on the market is produced with two production centers, however their partslist is the same. In such case, no alternative B.O.M. will be created.

By looking at the third digit of the serial number, one can identify which B.O.M. is used for the set he is working with. If the third digit of the serial number contains the number "1" (example: KX 1B033500001), then the set has been manufactured according to B.O.M. number 1. If the third digit is a "2" (example: KX 2B033500001), then the set has been produced according to B.O.M. no. 2. This is important for ordering the correct spare parts!

For the third digit, the numbers 1...9 and the characters A...Z can be used, so in total: 9 plus 26=35 different B.O.M.s can be indicated by the third digit of the serial number.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 1 and 2 refer to the production centre (e.g. LM is Arts), digit 3 refers to the B.O.M. code, digit 4 refers to the Service version change code, digits 5 and 6 refer to the production year, and digits 7 and 8 refer to production week (in example below it is 2008 week 50). The 6 last digits contain the serial number.



Figure 2-1 Serial number (example)

2.3.6 Module Level Repair (MLR) or Component Level Repair (CLR)

If a board is defective, consult your repair procedure to decide if the board has to be exchanged or if it should be repaired on component level.

If your repair procedure says the board should be exchanged completely, do not solder on the defective board. Otherwise, it cannot be returned to the O.E.M. supplier for back charging!

2.3.7 Practical Service Precautions

- It makes sense to avoid exposure to electrical shock. While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- Always respect voltages. While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

2.4 Abbreviation List

0/6/12	SCART switch control signal on A/V board. $0 = loop$ through (AUX to TV), 6 = play 16 : 9 format, $12 = play 4 : 3$
	format
2DNR	Spatial (2D) Noise Reduction
3DNR	Temporal (3D) Noise Reduction
AARA	Automatic Aspect Ratio Adaptation:
	algorithm that adapts aspect ratio to
	remove horizontal black bars; keeps
	the original aspect ratio
ACI	Automatic Channel Installation:
	algorithm that installs TV channels
	directly from a cable network by
	means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control
	signal used to tune to the correct
	frequency
AGC	Automatic Gain Control: algorithm that
	controls the video input of the feature
	box
AM	Amplitude Modulation
ANR	Automatic Noise Reduction: one of the
	algorithms of Auto TV
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASF	Auto Screen Fit: algorithm that adapts
	aspect ratio to remove horizontal black
	bars without discarding video
	information
ATSC	Advanced Television Systems
	Committee, the digital TV standard in
	the USA
ATV	See Auto TV
Auto TV	A hardware and software control
	system that measures picture content,
	and adapts image parameters in a
	dvnamic way
AV	External Audio Video
AVC	Audio Video Controller
AVIP	Audio Video Input Processor
B/G	Monochrome TV system. Sound
	carrier distance is 5.5 MHz
BLR	Board-Level Repair
BTSC	Broadcast Television Standard
	Committee. Multiplex FM stereo sound
	system, originating from the USA and
	used e.g. in LATAM and AP-NTSC
	countries
B-TXT	Blue TeleteXT
C	Centre channel (audio)
CEC	Consumer Electronics Control bus:
010	remote control bus on HDMI
	connections
CI	Constant Level: audio output to
02	connect with an external amplifier
CLR	Component Level Repair
COLUMBUS	COlor I UMinance Baseband
002011200	Universal Sub-system
ComPair	Computer aided rePair
CP	Connected Planet / Copy Protection
CSM	Customer Service Mode
CTI	Color Transient Improvement
	manipulates steepness of chroma
	transients
CVBS	Composite Video Blanking and
0.50	Synchronization
DAC	Digital to Analogue Converter
DRF	Dynamic Bass Enhancement: extra
	low frequency amplification
DDC	See "F-DDC"
220	

Safety Instructions, Warnings, Notes, and Abbreviation List

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DVD Digital Versatile Disc by the customer and read and stored DVI(-d) Digital Versatile Disc in RAM or in the VM. They are called E-DDC Enhanced Display Data Channel at start-up of the set to configure it according to the customer's to the customer's to according the customer's to according the customer's to according the custo	DVB-T	Digital Video Broadcast - Terrestrial	LS	Last Status; The settings last chosen
DVI(-d) Digital Visual Interface (d= digital only) in RAM or in the NVM. They are called E-DDC Enhanced Display Data Channel at start-up of the set to configure it according to the customer's preferences channel and display). Using E-DDC. preferences preferences EDID Extended Display Data Singlay. LCD Liguid Crystal Display EDID (VESA standard) LL' Monechrome TV system. Sound Carlier distancial. Cord Monechrome TV system. Sound EPROM Electrically Erasable and carlier distancia is 6.5 MHz. L' is Band FPLD Erasable Programmable Logic Device LORE LOCal REgression approximation FUL Europe LPL LG Shilps LCD (supplier) EV Extremel (source), entering the set by LS Loud Speaker FDS Full Dual Screen (same as FDW) Carlier distance is 4.5 MHz Source FDW Full Sub Signalis MN Monochrome FV system. Sound carlier distance is 4.5 MHz FDW Full Dual Screen (same as FDW) Carlier distance is 4.5 MHz Source FDW Full Dual Screen (same as FDW)	DVD	Digital Versatile Disc		by the customer and read and stored
E-DDC Enhanced Display Data Channel at startur op the set to configure it according to the customer's preferences Mainteened (VESA standard for communication the video source can read the EDD LATAM Latin America EDD Extended Display Jotat and the EDD LATAM Latin America Information form the display, UKESA standard) LCD Light Emitting Dode EEPROM Electricitization Data LC Monotome TV system. Sound EPRO Electricitization Data LC Monotome TV system. Sound EPRO Electricitization Data LC Monotome TV system. Sound EPLD Electricitization Data LV Monotome TV system. Sound EPLD Erasable Programmable Logic Device LOcal REgression approximation noise except for Band I EV Extremal (source), entering the set by LS Loudspeaker SCART or by cinches (jacks) LVDS Loudspeaker FBL Fast Blanding: DC signal MN Monotome TV system. Sound carciner distance is 4.5 MHz FDW Full Dual Vindow (same as FDS) MIPS Mergatom Field Signal Signal Signal FDW Full Dua	DVI(-d)	Digital Visual Interface (d= digital only)		in RAM or in the NVM. They are called
(VESA standard for communication channel and display). Using E-DDC, information form the display. LCD Liquid Crystal Display EDID Extended Display, Using E-DDC, (VESA standard) LCD Liquid Crystal Display EDID Extended Display, Using E-DDC, (VESA standard) LCD Liquid Crystal Display EEROM Electrically Erassble and Programmable Read Only Memory L.ORE LORE EVID Erassble Programmable Logic Device LORE LOCal REgression approximation noise reduction FUL Exorept LS Lougal Display EVI Erassble Programmable Logic Device LORE LOGal REgression approximation noise reduction FUL Exorept SCART for by cinches (tacks) L/US Lov Voltage Differential Signalling FBL Fast BLanking: DC signal Mbps Mega Mitter System. Sound carrier distance is 4.5 MHz Sound carrier distance is 4.5 MHz FDW Full Dual Screen (same as FDW) Carrier distance is 4.5 MHz Sound carrier distance is 4.5 MHz FDW Full Reversion Mitro Notupu Processor Fig.4 TeleVision FV Full Dual Screen (same as FDW) Moreprocessor Fig.4 TeleVision	E-DDC	Enhanced Display Data Channel		at start-up of the set to configure it
channel and display). Using E-DDC, preferro@s information form the display. LCD Latin America EDID Extended Display Identification Data LED Light Emitting Dioda EEPROM Electrically Erisable and LL' Monochrome TV system. Sound EEPROM Electrically Erisable and LL' Monochrome TV system. Sound EMI Electrically Erisable and LC Monochrome TV system. Sound EVID Erasable Programmable Read Only Memory L L is all banch seccept for Band I EVID Erasable Programmable Logic Device LORE LORE Lost Regression approximation EVID Erasable Programmable Logic Device LS Loudspeeker Scarro rby cinches (jacks) LVDS Low Voltage Differential Signaling FBL ScarRT or by cinches (jacks) LVDS Low Voltage Differential Signaling Monochrome TV system. Sound CDS Full Dual Window (same as FDS) MIPS Morporocessor without Interlocked FDA Fleid Memory or Frequency Traisator, switching device Field Memory or Frequency Traisator, switching device FPGA <td></td> <td>(VESA standard for communication</td> <td></td> <td>according to the customer's</td>		(VESA standard for communication		according to the customer's
the video source can read the DDD LATAM Latin America information form the display, LCD Liquid Crystel Display EDID Extended Display Identification Data LED Liquid Crystel Display (VESA standard) LL' Monochrome TV system. Sound carrier distance is 6.5 MHz. L'is Band Programmable Read Only Memory LL' Monochrome TV system. Sound carrier distance is 6.5 MHz. L'is Band LL' Sail bands except for Band I LL' Band Beter Magnetic Interference LORE LOCAR Experimentation Programmable Read Only Memory LPL LC Philips LD (supplier) EVU Europe LPL LG. Philips LDC (supplier) EVT Ext Fernal (source), entering the set by LS Low Voltage Differential Signalling SCART or by cinches (sacks) LVDS Low Voltage Differential Signalling Accompanying RGB signals MNN Monochrome TV system. Sound accompanying RGB signals MNN Monochrome TV system. Sound accompanying RGB signals MNN Monochrome TV system. Sound profile difference Signal MIPS Microprocessor without Interlocked PLASH FLASH memory Profile Signals MNN Monochrome TV system. Sound from Fleid Memory or Frequency microprocessor Modulation MOP Matrix Outpe Processor FM Field Memory or Frequency microprocessor FM Field Memory or Frequency microprocessor FM Giga bits per second MPEG Moin Pictures Experts Group G-TXT Green TeleteXT MPIF Multi Platform Interface HD High-bandwidth Digital Content HD High-befinition NC Not Connected HDCP High-bandwidth Digital Content HD High-befinition NC Not Connected HDCP High-bandwidth Digital Content HD High-befinition Arkey encoded into the sound system, mainly used in Europe. HDM High-befinition Multimedia Interface OCC Open Circuit HP HeadPhone SCART Chass BHDE Scarter TA System. Sound Cormitec. Color system mainly used in Europe. HDM High-befinition Multimedia Interface OCC Open Circuit HP HeadPhone Scarter T4 System. Sound Corricit is not transmitted off-air maind used in Europe. HDM High-Definition Multimedia Interface OCC Open Circuit HP HeadPhone Scan due display device must be Corricit is not transm		channel and display). Using E-DDC,		preferences
information form the display.LCDLight Emittip DiodeEDIDExtended Display (deed Dis		the video source can read the EDID	LATAM	Latin America
EDD Extended Display Identification Data (VESA standard) LD Light Entiting Diode EEPROM Electrically Erasable and Programmable Read Only Memory I. Lis all bands except for Band I EMI Electro Magnetic Interference LORE LOcal REgression approximation noise reduction EPLD Erasable Programmable Logic Device LORE Local REgression approximation noise reduction EU Europe LPL LG.Phillos LDD (supplier) EXT EXTernal (source), entering the set by SCART or by cinches (lacks) LVDS Low Vatage Differential Signalling Accompanying RGB signals FBL Fast BLanking: DC signal Mbps Mega bits per second FDS Full Dual Screen (same as FDW) Mircoprocessor without Interlocked Pipeline-Stages; A RISC-based FDW FLASH FLASH memory Pipeline-Stages; A RISC-based FTV Fleid Memory or Frequency Transisticn, switching device FV Fleid-Programmable Gate Array MOSFET Multiphexing, These FV Fleid-Programmable Gate Array MSFET Multiphexing, This is a digital FDS Giga bits per second MPEG Multiphexing, This is a digital Gb/s Giga bits per second MPEG Multiphexing, This is a digital HD High Definition NC NCAM		information form the display.	LCD	Liquid Crystal Display
(VESA standard) LU Monochrome TV system. Sound EEPROM Electrically Erasable and Programmable Read Only Memory I, L is all bands except for Band I EMI Electrically Erasable programmable Logic Device LORE LOCal REgression approximation noise reduction EVL Europe LPL LG Philips LCD (supplier) EXT EXTranal (source), entering the set by SCART or by cinches (jacks) LVDS Low Voltage Differential Signalling FBL Fast BLanking::DC Signal Mbps Monochrome TV system. Sound accompanying RGB signals MNN Monochrome TV system. Sound carrier distance is 4.5 MHz FDS Full Dual Vindow (same as FDS) MPS Microprocessor without Interlocked microprocessor without Interlocked microprocessor FM Field-Programmable Gate Array MOP Matrix Output Processor FVV Fiat TeleVision MOF Matrix Output Processor G-TXT Green TeleteXT MPIF Multi Platform InterFace HD H_sync to the module MUTE MUTE Line HDD Hard Disk Drive NICAM Near Instantaneous Compounded Audio Mithylexing. This is a digital platine resolution. For nor-linear resistor Grast Areay NICAM Near Instantaneous Compounded Audio Multiplexing. This is a digital platine resolution. For nor-linear resistor HDD H	EDID	Extended Display Identification Data	LED	Light Emitting Diode
EEPROM Electrically Erasable and Programmable Read Only Memory c.rarier distance is 6.5 MHz. L' B Band EMI Electro Magnetic Interference LORE LOcal REgression approximation mise reduction EPLD Erasable Programmable Logic Device Data Logal REgression approximation mise reduction EU Europe LPL LG.Phillps LCD (suppler) EXT EXTernal (source), entering the set by SCART or by cinches (jacks) LVDS Low Volgae Differential Signaling accompanying RGB signals FBL Fast BLanking: DC signal Mbos Mega bits per second accompanying regulations Source (Stacks) FDS Full Dual Vindow (same as FDS) MPS Microprocessor incroprocessor Monochrome TV system. Sound carrier distance is 4.5 MHz. FDA Fleid Memory or Frequency microprocessor Modulation FV Flat TeleVision MOPE Matrix Unitare Expects RISC-based FV Flat TeleVision MOPE Mutic Platorm InterFace HD High Definition NC Not Connected HDD Hard Disk Drive NICAM Near Interface HD High-bandwidth Digital Conte		(VESA standard)	L/L'	Monochrome TV system. Sound
Programmable Read Only MemoryI. L is all bands except for Band IEMIElectro Magnetic InterferenceLORELOCal Regression approximationPLDErasable Programmable Logic Devicenoise reductionEUEuropeLPLLG Philips LO (supplier)EXTEXTernal (source), entering the set byLSLoudspeakerSCART or by cinches (jacks)LVDSLow Voltage Differential SignallingFBLFast BLanking: DC SignalMbpsMega bits per secondaccompanying ROB signalsMNNMonochrome TV system. SoundFDSFull Dual Screen (same as FDW)carrier distance is 4.5 MHzFDWFull Dual Window (same as FDS)MIPSMicroprocessor without InterlockedFMField Memory or FrequencymicroprocessorModulationMOPMatrix Output ProcessorFPGAField Programmable Gate ArrayMOSFETTTHat TeleVisionMPFG-TXTGreen TeleteXTMPIFHDHigh DefinitionNCNot ConnectedHDDHigh DefinitionNCNot ConnectedHDDHigh DefinitionNTSCNational diptexies, 3/78345 MHz, and diptexies, 3/78345 MHz, di	EEPROM	Electrically Erasable and		carrier distance is 6.5 MHz. L' is Band
EMI Electro Magnetic Interference LORE LOCal REgression approximation noise reduction EPLD Erasable Programmable Logic Device Incle Activition noise reduction EU Europe LPL LG. Philips LCD (supplier) EXT EXTernal (source), entering the set by SCART or by cinches (jacks) LVDS Low Voltage Differential Signalling FBL Fast BLanking: DC signal Mbps Mega bits per second FDS Full Dual Screen (same as FDW) carrier distance is 4.5 MHz FDW Full Dual Window (same as FDS) MIPS Microprocessor FM Field Memory or Frequency Pipeline-Stages: A RISC-based microprocessor mixit Output Processor FV Flat TeleVision Transistor, switching device Transistor, switching device Gb/s Giga bits per second MPEG Motorin Pictures Experts Group G-TXT Green TeleteXT MPIF Mult Platform InterFace HD High Definition NC Not Connected Sound System, mainy used in Europe. HDD Hard Disk Drive NICA Negative Temperature Coefficient, non-linear resistor		Programmable Read Only Memory		I. L is all bands except for Band I
EPLD Erasable Programmable Logic Device noise reduction EU Europe LPL L0.Philips LOD (supplier) EXT EXTernal (source), entering the set by LS Loudspeaker SCART or by cinches (jacks) LVDS Low Voltage Differential Signalling FBL Fast BLanking: DC (signal Mbps Mega bits per second accompanying RGB signals M/N Monochrome TV system. Sound FDS Full Dual Window (same as FDS) MIPS Microprocessor without Interlocked FASH FLASH Memory or Frequency microprocessor Modulation MOP Matrix Output Processor FPGA Field-Programmable Gate Array MOSFET FIV Flat TeleVision Transistor, switching device Grbs Giga bits per second MPEG HD High-bandwidth Digital Content MUTE HD High-bandwidth Digital Content NICAM Near Instantaneous Compounded non-finear resistor HDM High-bandwidth Digital Content non-finear resistor HDM High-bandwidth Digital Content NICAM Near Instantaneous Conflount, data prizery, fa source is HDCP Coded and connected via HDM/DVU without NTSC National Television Standard HDMI	FMI	Electro Magnetic Interference	LORE	I Ocal REgression approximation
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SCART or by cinches (jacks)LVDSLow Voltage Differential SignallingFBLFast BLanking: DC signalMbpsMega bits per secondaccompanying RQB signalsM/NMonochrome TV system. Sound carrier distance is 4.5 MHzFDSFull Dual Screen (same as FDS)MIPSMicroprocessor without InterlockedFLASHFLASH memoryField Memory or FrequencyPipeline-Stages; A RISC-based microprocessorFMField Programmable Gate ArrayMOSFETMetal Xoutide Silicon Field EffectFTVFlat TeleVisionTransistor, switching deviceGb/sGiga bits per secondMPEGMotion Pictures Experts GroupG-TXTGreen TeleteXTMPIFMulti Platform InterFaceHDHigh-bandwidth Digital ContentNICAMNear Instantaneous CompoundedHDDHard Disk DriveNICAMNear Instantaneous CompoundedHDDHigh-bandwidth Digital ContentSound system, mainly used in Europe.HDDHigh-bandwidth Digital ContentNTSCNational Television StandardLicure is put into a "snow vision" modeNTSCNational Television StandardLicure is put into a "snow vision" modeNTSC 4.43= 4.433619 MHz (this is a and the display device must beNVMHDMIHigh befinition Multimedia InterfaceO/COpen CircuitHPHeadPhoneOSDOn screen display Teletext and carrier MTSC MM= 3.575655 MHz, normial content distribution the sourceNTSC 4.43= 4.433619 MHz (this is a and the display device must beHDMIHigh befinition Multimedia Inte	FXT	EXTernal (source), entering the set by	15	Loudspeaker
FBL Fast BLanking: DC signal Mbps Mega bits per second PDS Full Dual Screen (same as FDW) Carrier distance is 4.5 MHz FDW Full Dual Window (same as FDS) MIPS Microprocessor without Interlocked Pipeline-Stages: A RISC-based microprocessor FM Field Memory or Frequency microprocessor Modulation MOP Matrix Output Processor FV Flat TeleVision Transistor, switching device Gb/s Giga bits per second MPEG MD High Definition NCP H H, sync to the module MUTE HD High Definition NC HDD High Definition NCA NDCP National Television Sound system, mainly used in Europe. HDD High Definition NC Not Connected HDD High Definition NC Not Connected HDD High-bandwidth Digital Content Audio Multiplexing, This is a digital sound system, mainly used in Europe. HDM High-bandwidth Digital Content NTSC National Television Standard Corner, Las prave, If a source is HDCP coded non-linear resistor north America and Japan. Color and connected via HDM/DVI without NTSC National Television Standard Corrier is puti		SCART or by cinches (jacks)	LVDS	Low Voltage Differential Signalling
Intermediation Intermediation Intermediation accompanying RGB signals M/N Monochrome TV system. Sound carrier distance is 4.5 MHz FDS Full Dual Screen (same as FDW) MiPS Microprocessor without Interlocked Pipeline-Stages; A RISC-based FDW Filed Memory or Frequency microprocessor microprocessor FM Field Memory or Frequency microprocessor FV Flat TeleVision MOSFET Gb/s Giga bits per second MPEG MDUTE MUTE MUTE H H, sync to the module MUTE HDD High Definition NC HDD High Definition NC HDCP High Definition NC HDD Hadro Disk Drive NICAM HDCP High Definition NC HDCP High bandwidth Digital Content NCAM HDV/DVI signal that prevents video NTC Negative Temperature Color system mainly used in Europe. Ada piracy, If a source is HDCP coded north-America and Japan. Color carrier NTSC MNa 3.575455 MHz. Ada piracy, If a source is HDCP coded on Standard corrier is NTSC MNa 3.575455 MHz. Ada piracy, If a source is HDCP coded on Standard corrier is NTSC MNa 3.575455 MHz. Ada piracy	FBI	East BL anking: DC signal	Mbps	Mega bits per second
PDS Full Dual Screen (same as FDW) carrier distance is 4.5 MHz FDW Full Dual Window (same as FDS) MIPS Microprocessor without Interlocked FLASH FLASH FLASH menory Pipeline-Stages; A RISC-based FM Field Memory or Frequency microprocessor microprocessor FPGA Field-Programmable Gate Array MOSFET Metal Oxide Silicon Field Effect FTV Flat TeleVision MPEG Motion Pictures Experts Group G-TXT Green TeleteXT MPIF Multi Platrom InterFace HD High Definition NC Not Connected HDD High Definition NC Not Connected HDD High bandwidth Digital Content Audio Multiplexing, This is a digital Protection: A "key" encoded into the sound system.microp salars. Color HDD//DVI signal that prevents video NTC Neational Television Standard the proper HDCP decoding, the in North America and Japan. Color carrier NTSC MN= 3.579545 MHz, normal content distribution the source NTSC National Television Standard correis put into a "snow vision" mode on Screen Display Control; also called Artis		accompanying RGB signals	M/N	Monochrome TV system Sound
FDWFull Dual Window (same as FDS)MIPSMiPSMicroprocessor without InterlockedFLASHFLASH memoryPipeline-Stages; A RISC-basedmicroprocessormicroprocessorFMField Memory or FrequencyMOPMatrix Output ProcessorModulationMOPMatrix Output ProcessorFPGAField-Programmable Gate ArrayMOSFETMetal Oxide Silicon Field EffectFTVFlat TeleVisionTransistor, switching deviceGb/sGiga bits per secondMPEGMotion Pictures Experts GroupG-TXTGreen TeleteXTMPIFMulti Platform InterFaceHH_sync to the moduleMUTEMUTEHDDHigh DefinitionNCNot ConnectedHDDHigh DefinitionNCNot ConnectedHDDHigh DefinitionNCNear Instantaneous CompoundedHDDHigh Definition thesound system, mainly used in Europe.HDDHigh Definition thesound system, mainly used in Europe.HDM//DVI signal that prevents videoNTCNegative Temperature Coefficient, non-linear resistorand connected via HDM//DVI withoutNTSCNational Television Standardthe proper HDCP decoding, the picture is put into a "snow vision" modecarrier MTSC MNN 3.579545 MHz, normal content distribution the sourceHDMIHigh Definition Multimedia InterfaceO/COpen CircuitHDMIHigh Definition Multimedia InterfaceO/COpen CircuitHDMIHigh Definition Multimedia InterfaceO/COpen Circuit	FDS	Full Dual Screen (same as FDW)		carrier distance is 4.5 MHz
FLASH FLASH memory Pipeline-Stages; A RISC-based FM Field Memory or Frequency microprocessor Modulation MOP Matrix Output Processor FPGA Field-Programmable Gate Array MOSFET Metal Oxide Silicon Field Effect FTV Fial TeleVision Transistor, switching device Gib/s Giga bits per second MPEG Motor Dictures Experts Group G-TXT Green TeleteXT MPIF Multi Platform InterFace H H H_sync to the module MUTE MUTE Intermediate HDD High-Definition NC Not Connected Moing Submit State HDD High-bandwidth Digital Content Source is HDCP coded NTC Negative Temperature Coefficient, non-linear resistor Add the proper HDCP Hol//DVI without NTSC National Television Standard Commal content distribution the source NTSC 4.43= 4.433619 MHz (this is a digital source is HDCP coded or changed to a low resolution, For changed to a low resolution. For changed to a low resolution. For content distribution the source or changed to a low resolution. For changed dot a low resolution. For control is a called Artistic (SAA3800) TV related data such as alignments of field HP HDMI High Definition Multimedia	FDW	Full Dual Window (same as FDS)	MIPS	Microprocessor without Interlocked
FM Field Memory of Frequency microprocessor Modulation MOP Matrix Output Processor FPGA Field-Programmable Gate Array MOP FTV Flat TeleVision Transistor, switching device Gb/s Giga bits per second MPEG Motion Pictures Experts Group G-TXT Green TeleteXT MPIF Multi Platform InterFace H H_sync to the module MUTE MUTE Line HDD High Definition NC Not Connected HDD Hard Disk Drive NICAM Near Instantaneous Compounded HDCP High-bandwidth Digital Content Audio Multiplexing. This is a digital Protection: A "key" encoded into the sound system, mainly used in Europe. HD/DVI signal that prevents video NTC Negative Temperature Coefficient, non-linear resistor and connected via HDM//DVI without NTSC National Television Standard the proper HDCP decoding, the Committe. Color system mainly used in North America and Japan. Color or changed to a low resolution. For carrier NTSC M/N= 3.579545 MHz, ecoding. eacoding. WCR norm, it is not transmitted off-air) enabled for HDCP "software key" NVM Non-Volatile Memory: IC containing TV relat	FLASH	FLASH memory		Pipeline-Stages: A RISC-based
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FPGA Field-Programmable Gate Array MOSFET Metal Oxide Silicon Field Effect FTV Flat TeleVision Transistor, switching device Gb/s Giga bits per second MPEG Motion Pictures Experts Group G-TXT Green TeleteXT MPIF Multi Platform InterFace H H_sync to the module MUTE MUTE Line HDD High Definition NC Not Connected HDCP High-bandwidth Digital Content Sound system, mainly used in Europe. HDMI/DVI signal that prevents video NTC Negative Temperature Coefficient, non-linear resistor and connected via HDMI/DVI without NTSC National Television Standard the proper HDCP decoding, the protection: A "key" encoded into the source and the proper HDCP decoding, the protection is snow vision" mode or changed to a low resolution. For onchanged to a low resolution. For enclass and the display device must be enabled for HDCP "software key" NVM Non-Volatile Memory: IC containing decoding. HDMI High Definition Multimedia Interface O/C Open Circuit Open Circuit HDMI High Definition Multimedia Interface O/C Open Circuit Control: also called Artistic (SAA5800) HDMI High Definition Multimedia Interface	1 101	Modulation	MOP	Matrix Output Processor
FTV Flat TeleVision Treat TeleVision Treat TeleVision Gb/s Giga bits per second MPEG Motion Pictures Experts Group G-TXT Green TeleteXT MPIF Multi Platform InterFace HD High Definition NC Not Connected HDD High-bandwidth Digital Content Audio Multiplexing. This is a digital Protection: A "key" encoded into the sound system, mainly used in Europe. HDM/IDVI signal that prevents video NTC Negative Temperature Coefficient, nor-linear resistor and connected via HDM//DVI without NTSC National Television Standard the proper HDCP decoding, the committee. Color system mainly used in North America and Japan. Color or changed to a low resolution. For carrier NTSC MNI= 3.579545 MHz, normal content distribution the source NTSC A43= 4.433619 MHz (this is a HDMI High Definition Multimedia Interface O/C Open Circuit HP HeadPhone OSD On Screen Display II of HDCP to bas P50 Project S0: containing IPC Inter IC Data bus PAL Phase Alternating Line. Color system IPDMI High Definition Multimedia Interface O/C <	FPGA	Field-Programmable Gate Array	MOSEET	Matal Oxide Silicon Field Effect
The first between Hardbody and the first between Hardbody and the first between Gb/s Giga bits per second MPEG Motion Pictures Experts Group G-TXT Green TeleteXT MPIF Multi Platform InterFace H H_sync to the module MUTE MUTE MUTE HD High Definition NC Not Connected HDD Hard Disk Drive NICAM Near Instantaneous Compounded HDCP High-bendwidth Digital Content Audio Multiplexing. This is a digital Protection: A "key" encoded into the sound system, mainly used in Europe. HDMI/DVI signal that prevents video NTC Negative Temperature Coefficient, non-linear resistor and connected via HDMI/DVI without NTSC National Television Standard the proper HDCP decoding, the Committee. Color system mainly used in North America and Japan. Color or changed to a low resolution. For carrier NTSC M/N= 3.579545 MHz, normal content distribution the source NTSC 4.43= 4.433619 MHz (this is a and the display device must be VCR norm, it is not transmitted off-air) enable of HDCP "software key" NVM Non-Volatile Memory: IC containing decoding. Transmitted off-air) HDMI High Defini	FTV	Flat Tele\/ision		Transistor, switching device
Corr Green TeleteXT MPIF Multi Platform InterFace H H_sync to the module MUTE MUTE Line HD High Definition NC Not Connected HDD Hard Disk Drive NICAM Near Instantaneous Compounded HDCP High-bandwidth Digital Content Audio Multiplexing, This is a digital Protection: A "key" encoded into the sound system, mainly used in Europe, data piracy. If a source is HDCP Coded non-linear resistor Adta piracy. If a source is HDCP Coded on the snow vision" mode or changed to a low resolution. For committee. Color system mainly used in Europe, and the display device must be VCR norm, it is not transmitted off-air norm, it is not transmitted off-air NTSC Al43= 4.433619 MHz (this is a and the display device must be VCR norm, it is not transmitted off-air norm, it is not transmitted off-air HDMI High Definition Multimedia Interface O/C Open Circuit HP HeadPhone OSD On Screen Display I Monchrome TV system. Sound OTC On screen Display I ² C Inter IC bata bus PAL Phase Alternating Line. Color system I ² C Inter IC Bata bus PAL Phase Alternating Line. Color system I ² C Inter IC Bata bus PAL Phase Alternating Line. Color s	Ch/s	Giga hits per second	MDEC	Motion Dictures Experts Group
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		to form one frame. Each lield contains		

Safety Instructions, Warnings, Notes, and Abbreviation List

	3.575612 MHz and PAL N= 3.582056	V	V-sync to the module
	MHz)	VCR	Video Cassette Recorder
PCB	Printed Circuit Board (same as "PWB")	VESA	Video Electronics Standards
PCM	Pulse Code Modulation		Association
PDP	Plasma Display Panel	VGA	640x480 (4:3)
PFC	Power Factor Corrector (or Pre- conditioner)	VL	Variable Level out: processed audio output toward external amplifier
PIP	Picture In Picture	VSB	Vestigial Side Band; modulation
PLL	Phase Locked Loop. Used for e.g.		method
	FST tuning systems. The customer	WYSIWYR	What You See Is What You Record:
	can give directly the desired frequency		record selection that follows main
POR	Power On Reset, signal to reset the uP		picture and sound
Progressive Scan	Scan mode where all scan lines are	WXGA	1280x768 (15:9)
	displayed in one frame at the same	XTAL	Quartz crystal
	time, creating a double vertical	XGA	1024x768 (4:3)
	resolution.	Y	Luminance signal
PTC	Positive Temperature Coefficient,	Y/C	Luminance (Y) and Chrominance (C)
	non-linear resistor		signal
PWB	Printed Wiring Board (same as "PCB")	YPbPr	Component video. Luminance and
PWM	Pulse Width Modulation		scaled color difference signals (B-Y
QRC	Quasi Resonant Converter		and R-Y)
QTNR	Quality Temporal Noise Reduction	YUV	Component video
QVCP	Quality Video Composition Processor		·
RAM	Random Access Memory		
RGB	Red. Green, and Blue. The primary		
	color signals for TV. By mixing levels		
	of R, G, and B, all colors (Y/C) are		
	reproduced.		
RC	Remote Control		
RC5/RC6	Signal protocol from the remote		
	control receiver		
RESET	RESET signal		
ROM	Read Only Memory		
R-TXT	Red TeleteXT		
SAM	Service Alignment Mode		
S/C	Short Circuit		
SCART	Syndicat des Constructeurs		
	d'Appareils Radiorécepteurs et		
	Téléviseurs		
SCL	Serial Clock I ² C		
SCL-F	CLock Signal on Fast I ² C bus		
SD	Standard Definition		
SDA	Serial Data I ² C		
SDA-F	DAta Signal on Fast I ² C bus		
SDI	Serial Digital Interface, see "ITU-656"		
SDRAM	Synchronous DRAM		
SECAM	SEequence Couleur Avec Mémoire.		
	Color system mainly used in France		
	and East Europe. Color carriers=		
	4.406250 MHz and 4.250000 MHz		

SIF Sound Intermediate Frequency SMPS Switched Mode Power Supply SoC System on Chip SOG Sync On Green SOPS Self Oscillating Power Supply Sony Philips Digital InterFace S/PDIF Static RAM SRAM Service Reference Protocol SRP SSB Small Signal Board STBY STand-BY 800x600 (4:3) SVGA SVHS Super Video Home System SW Software SWAN Spatial temporal Weighted Averaging Noise reduction SXGA 1280x1024 TFT Thin Film Transistor Total Harmonic Distortion THD TMDS Transmission Minimized Differential Signalling TXT TeleteXT TXT-DW Dual Window with TeleteXT

User Interface

Microprocessor

1600x1200 (4:3)

UI

uΡ

UXGA

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Version	MCi730	
Features	/05	/12
Output Power - 50W x 2	x	Х
Voltage (220V~240V)	X	Х

SERVICE SCENARIO MATRIX:

Type/Version	MCi730	
Board in used	/05	/12
CD Servo Board	MLR	MLR
Main Board	MLR	MLR
Standby Board	MLR	MLR
AMP Board	MLR	MLR
USB Board	MLR	MLR
IR Board	MLR	MLR
Speaker Jack Board	MLR	MLR
Headphone Board	MLR	MLR
Power Board	MLR	MLR
WIFI Board	MLR	MLR
Eject &VOL Board	MLR	MLR

Measurement Setup

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)



Recorder

Use Universal Test Cassette CrO2 SBC419 4822 397 30069 or Universal Test Cassette Fe SBC420 4822 397 30071



System, Region Code, etc. Setting Produre

3 - 1

1) Check on the Software Version

a) Go "Settings" page when home menu shown.

- b) Select "Device ID and Information".
- c) Select "Software Version" .
- d) VFD will show:



6)Upgrading new sofeware

a) Copy "software files" into USB.b) Put USB into USb jack.c) Press "USB" button on R/C.d) VFD will show:

Upgrading... Do not power off. Preparing to install updates...

CAUTION !

This information is confidencial and may not be distributed. Only a qualified service person should reprogram the Region Code.

REPAIR INSTRUSTRATOR (part 1)

MAIN UNIT REPAIR CHART 1/3 G С D Е F В А All Function No Working Power Supply All Function AUX In CD Audio Line Out WIFI In Internet In No Workina No S ound No Sound No Output No Output No Output А С В All Function All Function Power Supply No Sound No Working No Working YES NO Check all system all YES Check all output Check all output NO Re-insert and fix cable Loose or bad INT power OK or not Voltage OK or Not the cable (+25V,+12V,BK5V) NO ¥ YES Power board broken NO YES Check fuse F900 on Standby red light Change F900 YES Power board broken or not show working or not Check C27,C40 on AMP YES Check Power board ON/OFF singal high or not board voiced or not 🕁 NO NO NO NO NO Check N90 on Power Check +25V,+5V,BK5V short circuit for GNP or not Change Power board Change Power board board Voltage +25V,+5V, NO Check U4 the 1st ,7th BK5V OK or not pin voiced or not Main board broken YES YES YES NO Check AMP board NO Check AMP board Change AMP board Check AMP board Voltage +25V,+5V, OK or not broken or not OK or not NO Check AMP board the NO YES 21th,22th pin high or not Change Main board YES YES Check Main board Check 26pin FFC Change Main board Re-insert and fix broken or not cable CN3 and RB3 YES 26pin FFC cable Loose or bad INT NO Check AMP IC Output have PWM singal output or not NO NO Check Main board NO Voltage +3.3V,+1.8V, Change Main board YES +1.5V OK or not YES Check CN2 cable Loose or bad INT Check LCD cable Loose or bad INT YES YES Re-insert and fix Check LCD broken or not the cable **YES** Change LCD











3 - 4

Т

MAIN UNIT REPAIR CHART 3/3



Firmware Upgrade Recovery Mode

The MCi298/MCi730 will enter into the hang-up mode in case the user has unplugged the power in the middle of software upgrade. During hang-up mode, the device LCD will always show the "PHILIPS" logo after power-on.

To get the device back to working:

- 1/ One has to keep previous network settings unchanged in the access point or router, since the device will try to use previous stored network settings to connect to the Internet, either wireless or wired. If previous network settings are lost, please connect the MCi298/MCi730 unit via a network cable directly to the Internet.
- 2/ Press and hold CD eject button on the device during power on. Release the button when a "beep" sound is heard after around 10 to 15 seconds.
- 3/ Unit will boot up into the Firmware Upgrade mode and try to upgrade to the latest available software through Internet, Please wait sufficient time for the software upgrade to finish. Device will reboot by itself after successfully upgraded.

Note:

After software upgrade the unit will return to the user's original network.

DISASSEMBLY INSTRUCTIONS

3.1 Dismantling of Main Unit

1) Before dismantling Main Unit, loosen 6 screw "A" as shown in figure 1.

2) Loosen 5 screw "B" as shown in figure 2, and detach the top cover as shown in figure 3.

4 - 1



Figure 1



Figure 2

Dismantling of IR Board

1) Loosen 4 screw "F" to detach IR Board as shown in figure 6.



Figure 6



Loosen 2 screw "G" to detach WIFI card as shown in figure 7.
 Loosen 2 screw "H" to detach WIFI Board as shown in figure 8.



Figure 7



Figure 3

Dismantling of Main Board

Loosen 5 screws "C" and 2 screw "D" as shown in figure 4.
 Loosen 2 screws "E" to detach Main Board as shown in figure 5.



Figure 4



Figure 8

Dismantling of AMP Board

- Loosen 2 screws "I" on the back panel as shown in figure 9.
 Loosen 2 screws "J" to detach AMP Board as shown in figure 10.

Dismantling of Power Board

- Loosen 1 screw "L" on the back panel as shown in figure 12.
 Loosen 2 screws "M" to detach Power Board as shown in figure 13.





Figure 10



Figure 12

Dismantling of CD Servo Board

1) Loosen 2 screws "K" to detach CD Servo Board as shown in figure 11.

Figure 9

Dismantling of SPK Board

1) Loosen 2 screws "N" to detach SPK Board as shown in figure 14.

rost





Figure 14



Figure 13

Dismantling of Standby & Eject Board

1) Loosen 3 screws "O" on the bottom cabinet as shown in figure 15.

2) Loosen 3 screws "P" to detach top shielding late as shown in figure 16.

3) Loosen 7 screws "Q" to detach Standby & Eject Board as shown in figure 17.





Figure 15

Figure 16



4 - 3

Figure 17

3.2 Service Position

Note: Refer to the Wiring Diagram for the correct cable connection between boards.



Service A

Service Position Main Board, CD Servo Board, AMP Board, Power Board, SPK Board, USB Board, WIFI Board, IR Board, Standby Board, Eject Board, Headphone Board

Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

BLOCK DIAGRAM



WIRING DIAGRAM



CD Servo Board

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Circuit Diagram	-2
PCB Layout Top View 6	-6
PCB Layout Bottom View	-7

Circuit Diagram - Part 1





1 2 3 4 5 6	

Circuit Diagram - Part 2



6-3

Circuit Diagram - Part 3



6 - 4

		2	4	E	6	
	Nedified Minutes	3	4	3	۰ C46 ا L ^{1nF}	
D	Feb 27 08 1.FM Modulation 75KHz 100dBuv input ,Ar 2.7313 root gain 11.25dB)	nalog output is 290mV at 7313 outpu	FOR Modify ESI	D Performance	C44 InF C30 InF C18 InF C16 InF C15 InF C6 InF C10 InF]PAD_
			C63 220pF R30 M 18K		48 1nF C51 1nF C52 1nF C53 1nF C54 1nF C55 1nF C56 1nF] PAD_] PAD_] PAD_
	DAC_LN C42 1.5nF	R142 4K7 R35 22K C34 1.5nF	2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	C3 [±] (100⊍F ←	R39 M ^{1K}	
С		$\begin{array}{c c} R31 & 4K7 & R32 & 22K \\ \hline \\ C40 \\ 1.5nF \\ \hline \\ $	18K + 7V5 18K + 3 18K + 3 18K + 3 18K + 1 18K + 1 1			
	FO DAC_RP	PR Imporve Noise Prove Noise	¹⁵ 220pF C R34 M18	C37 C5 0.1uF10uF	+C3	
В	B C45 1.5nF DAC_RN	$\overset{C47}{-} \overset{\perp}{-} \overset{\perp}{-} \overset{-}{-} $	IC10-B 4558	8 - C35 (100₩F % 2 C1 1.5i	R65 M ^{1K}	
		C49 1.5nF	R33 M 18K			
A						
		3	4	5	6	











Figure 1 - VT8500 System Block Diagram

Main Board

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10 10 10 10 10 10 10 10 10 10		1	
10 2008.11.25 modify Supply DRAM up to 2Gb(MA13) 10 10 10 10 10 10 10 10 10 10	10 10 10 10 10 10		D
10 10 CLK- 10 CLK+ 10 224 close to VT8500 10 10 10 10 10 10 10 10 10 10	10 10 10 2 (st	08.11.25 modify apply DRAM up to 2Gb(MA13)	
CLK+ 10 224 close to VT8500 10 10 10 10 10 10 10 10 10	10 10		с
10 10 10 10 10 10 10 modify M up to 1Gb(BA2) А	 	24 close to VT8500	•
10 10 10 10 10 10 10 10 10 10	10		
10 10 10 10 10 Modify И up to 1Gb(BA2)	10 10		
10 10 10 modify M up to 1Gb(BA2)	10 10		в
10 modify M up to 1Gb(BA2)	10 10 10		
modify I up to 1Gb(BA2)	10		
A	m M	odify up to 1Gb(BA2)	
			A









7 - 8





7 - 9


7 - 10



4

7 - 11

2





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			1		
=	MIICRS	9 9			D
D3 D2 D1 D0 _EN _CLK _ERR	9 9 9 9 9 9 9 9 9				с
_ERF _CLK _DV	8 9 3 9 9				
RXD0 RXD1 RXD2 RXD3 MDC MDIO	999				в
					A
			1		'





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HP_OUT_L

HP_OUT_R





PCB LAYOUT - TOP VIEW





Standby Board

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		2			-		7	0
D					1			D
с								c
в	C1 100PF	STB+5V R2 330R D1 RED_LED	STAND BY LED ON					В
A	1	2	3	4	5	6	7	Α





AMP Board

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USB Board

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D











IR Board

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8	
	D
	С
	в
	А







Speak Jack Board

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I OF EXCHANGED OTHY.



Headphone Board

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_	_	
7	8	
		D
		С
		В
7	8	А





Power Board

Circuit Diagram



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Circuit Diagram








Eject & VOL Board

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CIRCUIT DIAGRAM





Main Unit Exploded View





46=15+16 47=23+24 48=10+11 49=20+21 50=12+13+14+17+18

REVISION LIST

1.0 Manual 3141 785 34960

Initial Service Manual released.

1.1 Manual 3141 785 34961

In this version, version /05 added.

1.2 Manual 3141 785 34962

In this version, Page 3-5 Fireware Upgrade Recovery Mode added.