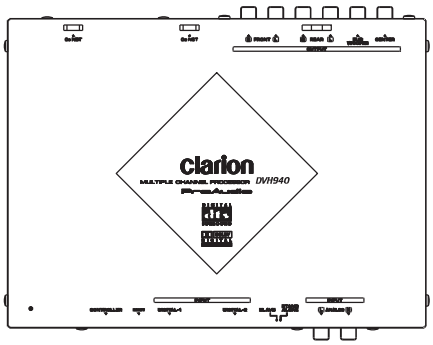
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Service Manual



5.1CH SURROUND DECODER

Model ***DVH940***
(GP-978B-52 / FOR U.S.A.)

Model ***DVH943***
(GP-978E-52 / FOR EUROPE)

ORIGINAL SERVICE MANUAL

This additional service manual is designed to be used together with Model DVH920/DVH923

Original model	Manual No.
GP-978B-51/GP-978E-51	298-5998-00

DEFFARENCE FROM ORIGINAL MODEL

1.System controller IC of the main PWB section.

SPECIFICATIONS

Digital/Anaiog processing section

Frequency response:
20Hz to 44kHz(Linear PCM 96kHz)
S/N retio: 95dB or more
(IHF-A,sound-field effects OFF)
Separation: 80dB or more(with digital input)
Total harmonic distortion:
0.01% or less(with digital input)
Analogue output/impedance:
4 V / 330 ohm

DSP/EQ section

DSF: 6 patterns
P.EQ functions: Band 3-band x 3 ch
(center,front,surround)
F(central frequence)
20Hz to 20kHz,
(1/3 octave steps, 31 points)
Q curve 1 to 20(5 points)
Gain +12/ -12dB

General

Power supply: DC14.4V(10.8 to 15.6V)
negative ground
Power consumption: 480mA
Dimentions(mm): 230(W) x25(H) x170(D)
Weight: 900 g

COMPONENTS

GP-978B-52/GP-978E-52

1.	Main unit	----------	1
2.	A lead(Only GP-978E-52)	850-6736-00	1
3.	CeNET cable	855-3416-50	1
4.	Optical digital cable(5 m)	856-0006-00	1
5.	RCA pin cable	855-5439-00	1
6.	Parts bag	----------	
6-1.	Mounting brackets	300-7362-00	2
6-2.	Cord clamps	335-0833-01	2
6-3.	Canoe clips	335-2515-00	4
6-4.	Cable clip	335-3744-00	1
6-5.	Mounting screws(M4X8)	714-4008-80	4

NOTE

* Specification and design are subject to change without notice for further improvement.
* We cannot supply PWB with component parts in principle. When a circuit on PWB has failure , please repair it by component parts base. Parts which are not mentioned in service manual are not supplied.

* "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc. Copyright 1996, 2003 Digital Theater Systems, Inc. All Rights Reserved.
* "Dolby", "Pro Logic" and duble-D symbol are trademarks of Dolby Laboratories.
* All operations of this 5.1 channel surround decoder was directly attained from the center units (DXZ945MP,DXZ946MP,DXZ948RMP,VRX745VD,VRX746), without using decoder control unit.

To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

1. Use specified parts.
   The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them.
   The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.
2. Place the parts and wiring back in their original positions after replacement or re-wiring.
   For proper circuit construction, use of insulation tubes, bonding,gaps to PWB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.
   If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.
3. Check for safety after repair.
   Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary ploblems around the repaired spots.
   If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.
4. Caution in removal and making wiring connection to the parts for the automobile.
   Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.
5. Cautions regarding chips.
   Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc). The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.
6. Cautions in handling flexible PWB
   Before working with a soldering iron, make sure that the iron tip temperature is around 270℃. Take care not to apply the iron tip repeatedly(more than three times)to the same patterns. Also take care not to apply the tip with force.
7. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

EXPLANATION OF IC

The change from 052-3379-01 of DVH920 to 052-3379-10 of DVH940.
When it connects with 04year full operation models and there is no DECODER of Ce-net socket, DVH920 has changed by DVH940 what was changed to ANALOG2 to ANALOG1 of pin64.

EXPLOODED VIEW PARTS /DIFFERENCE LIST

Difference the follwing parts in the parts list.(page 3)

NO.	PART NO.	DESCRIPTION	Q'TY
1	286-6426-00 286-6427-00	SETPLATE(GP-978B) SETPLATE(GP-978E)	1
2	310-1642-11 310-1642-12	UPPER CASE(GP-978B) UPPER CASE(GP-978E)	1

Other parts of GP-978B-52/GP-978E-52 are the same as GP-978B-51/GP-978E-51.

ELECTRICAL PARTS /DIFFERENCE LIST

Main PWB section(B1)

Difference the follwing parts in the parts list.(page 4)

REF No.	PART No.	DESCRIPTION
C102	043-0296-50	0.1uF
D306	001-0504-46	HZS9B2L
IC401	052-3379-10	M30622MCA-8K9GP
L101	010-3406-72	68uH
L102	010-3406-72	68uH

Other parts of GP-978B-52/GP-978E-52 are the same as GP-978B-51/GP-978E-51.