

**"QVERB"**

**USER MANUAL**

**DNR**

## QVERB MANUAL

We like to thank you for purchasing our newest digital reverb, the Qverb.

### Features:

- 8 reverb programs
- Reverb length adjustable in 8 steps
- Delay mode adjustable in 8 steps
- Special effects mode with 7 programs

### Detailed specifications:

Program select	time/effects								Mode
	1	2	3	4	5	6	7	8	
Small Hall	0.5-0.8-1.0-1.2-1.5-1.8-2.5-3.0 sec								dark/bright
Large Hall	1.2-2.0-3.5-5.0-6.0-7.0-8.0-15 sec								dark/bright
Small Hall	0.3-0.5-0.8-1.0-1.2-1.5-1.8-2.0 sec								dark/bright
Large Room	1.5-2.5-3.0-4.0-4.5-5.0-7.0-8.5 sec								dark/bright
Plate 1	0.2-0.3-0.5-0.8-1.0-1.2-1.5-1.8 sec								dark/bright
Plate 2	1.0-1.5-2.0-2.5-3.0-5.0-5.5-7.5 sec								dark/bright
Gated Reverb type 1	200-300-400-600 msec.								not active
Gated Reverb type 2	150-250-350-450 msec.								
Reverse Reverb	100-200-250-300-350-400-450-500 msec								not active
Delay	50-100-180-200-350-400-500-650 msec								not active
Special Effects	Reverb loop/Ambient/Echo+reverb/ Echo crossfeed/2 tap stereo/3 tap stereo/ 3 tap panning/Multitap/Mute.								not active
Input	stereo, impedance 22kOhm, unbalanced, jack sockets.								
Output	stereo, impedance 100 ohm, unbalanced, jack sockets.								
Frequency response	direct 10Hz - 20kHz 0.025 dB, reverb 20Hz-10kHz								
Sampling resolution	16 bit								
Dynamic range	75 dB								

Mains supply: AC 115v/230 Volt, 50/60Hz

The mains selector switch, located on the backpanel has to be set to the local voltage.

### Notice

- \* Do not remove panel covers by unscrewing. There are no user serviceable parts inside. Refer all servicing to qualified service personnel.
- \* To prevent fire or shock hazard, do not expose this unit to rain or moisture.

### On safety

- \* Should any solid object or liquid fall into the cabinet, remove the mains lead and have it checked by qualified personnel before operating it any further.
- \* To disconnect the mains lead, pull out the plug itself. Never pull the lead.

### On installation

- \* Choose a location where air can pass along the unit to prevent it from overheating.
- \* Do not install the unit near heat sources such as radiators, or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibrations or shocks.

### On repacking

It is wise for you to save the packing materials and box in case you ever need to ship or store your unit.

## Controls and functions

### 1. Input

This control lets you adjust the incoming level until the peak indicator lights occasionally.

Note: The input control will also influence the output signal level to maintain the right balance between treated and untreated signal.

### 2. Peak

This led lights when the input signal is 4dB from clipping. Occasionally lighting is acceptable.

### 3. Mix

This control mixes the direct signal with the reverb signal. When the Qverb is used in series with the incoming signals (Insert points or between mixer and amplifier/tape deck) the balance between input signal (dir) and reverb (rev) can be set to personal taste.

In case of using the Qverb connected to an aux send of a mixing desk, the direct signal will be heard through the console and the Qverb only has to provide the reverb signal. In this set up the mix control is set fully clockwise. The level of the return signal has to be adjusted in the consoles' effect returns. This could be an aux return or an input channel.

### 4. Select

The momentary switch steps through the ten reverb programs from left to right only. The "special effects" led is red, indicating that in this mode only the special programs, written on the frontpanel are active.

### 5. Time

This momentary switch steps through the eight time and effect parameters also from left to right only.

#### 6. Dark

This latching switch adjusts the high frequency content of the reverb programs only.

Note: The dark switch is not active when the following programs are chosen:

- gated reverb
- reverse reverb
- delay
- special effects

#### 7. Mute

This latching switch mutes the chosen reverb program. All leds are switched off now, except the mute led. An easy way of comparing treated and untreated signals.

### Inputs/outputs

The Qverb is fully stereo and has therefore 2 unbalanced inputs and 2 unbalanced outputs on jack sockets.

The inputs are high impedance inputs, which means that all "line level" equipment can be connected to the Qverb. All amplified signal sources are capable of driving the Qverb, this we call "line level" sources. The input sensitivity of the Qverb is not high enough to work with directly connected microphones or electric guitars. When a connected instrument or other device is not able to activate the peak indicator, this means that the Qverb is not driven hard enough to establish a good signal to noise ratio, a pre amplifier has to be used first to amplify this signal.

To achieve a good signal to noise ratio, the signal source must be capable to drive the peaked to light occasionally. Use the input control to check out this condition. The above mentioned condition is very important in case you suffer from background noise.

There is a left and right input jack. When you use the Qverb in a series arrangement, both jacks have to be used to maintain the stereo information on the outputs. But in case of using the Qverb in a mono aux send and stereo aux return arrangement, it is only necessary to drive one input of the Qverb. The unused input will be connected automatically in parallel to the used input to provide the right level to the Qverb's internal electronics.

Note: The input control will also influence the output signal level to maintain the right balance between treated and untreated signal.

The outputs of the Qverb are capable of driving any tapedeck and or amplifier or effect return.

The jacks are wired in a "mono" arrangement, only the tip is connected to the electronics.

To benefit from the wide stereo image, several reverb programs can generate, be sure to connect one output to the left output and the other one to the right output of your system. Check this by unplugging one of the output jacks in a working situation. Now the Qverb's signal is only to be heard in one of the stereo channels. The moment you plug the other jack back into the Qverb's output, the reverb signal will be heard in both channels.

Note:The "three tap panning" program lets you easily check if your stereo wiring is carried out properly. The three tap panning program gives one signal left first, then in the middle and finally into the right channel only.

We wish you a reverbant succes with your new Qverb.

**N o t e :** The D & R range of signal processors is continuously growing, so check out with your dealer or call us directly for information on phone nr. --31 2940-18014\*  
fax nr. --31 2940-16987

D & R Electronica b.v.  
Rijnkade 15b  
1382 GS WEESP  
THE NETHERLANDS

## QVERB GEBRUIKSAANWIJZING

Wij danken u hartelijk voor uw aankoop van onze nieuwste digitale reverb, de Qverb.

### Opties:

- 8 galm programma's
- Reverb lengte instelbaar in 8 stappen
- Delay mode instelbaar in 8 stappen
- 7 speciale effect mogelijkheden

### Gedetailleerde specificaties:

Program select	time/effects								Mode	
	1	2	3	4	5	6	7	8		
Small Hall	0.5	0.8	1.0	1.2	1.5	1.8	2.5	3.0	sec	dark/bright
Large Hall	1.2	2.0	3.5	5.0	6.0	7.0	8.0	15	sec	dark/bright
Small Room	0.3	0.5	0.8	1.0	1.2	1.5	1.8	2.0	sec	dark/bright
Large Room	1.5	2.5	3.0	4.0	4.5	5.0	7.0	8.5	sec	dark/bright
Plate 1	0.2	0.3	0.5	0.8	1.0	1.2	1.5	1.8	sec	dark/bright
Plate 2	1.0	1.5	2.0	2.5	3.0	5.0	5.5	7.5	sec	dark/bright
Gated Reverb type 1	200-300-400-600 msec.									not active
Gated Reverb type 2	150-250-350-450 msec.									not active
Reverse Reverb	100-200-250-300-350-400-450-500 msec									not active
Delay	50-100-180-200-350-400-500-650 msec									not active
Special Effects	Reverb loop/Ambient/Echo+reverb/ Echo crossfeed/2 tap stereo/3 tap stereo/ 3 tap panning/Multitap/Mute.									not active
Input	stereo, impedance 22kOhm, unbalanced, jack sockets.									
Output	stereo, impedance 100 ohm, unbalanced, jack sockets.									
Frequency response	direct 10Hz - 20kHz 0.025 dB, reverb 20Hz-10kHz									
Sampling resolution	16 bit									
Dynamic range	75 dB									

Voeding: AC 115V/230 Volt, 50/60Hz.

De voedingschakelaar, op de achterkant van het apparaat, dient op de plaatselijke netspanning gezet te worden.

### Let op

\* Indien de bovenkant van het apparaat losgeschroefd wordt, vervalt alle garantie. Alle eventuele service moet door gekwalificeerde dealers worden uitgevoerd.

\* Om kortsluiting en schokken te voorkomen, moet u dit apparaat niet blootstellen aan vochtigheid.

### Veiligheid

- \* Als er een object of iets vloeibaars in het apparaat valt, dient u direkt de stroom uit te schakelen. Laat u het direkt nakijken door een gekwalificeerde dealer voordat u er weer verder mee werkt.
- \* Om de stroom uit te schakelen dient u altijd de steker er uit te halen. Trek nooit aan het snoer.

### Installeren

- \* Kies een plek uit voor het apparaat, zo dat er voldoende lucht langs kan, ter koeling.
- \* Plaats het apparaat niet in de buurt van warmtebronnen zoals radiators en airconditioners of in direct zonlicht, stoffige ruimtes, of plekken onderhevig aan mechanische schokken.

### Verpakking

- \* Het is verstandig om de verpakking te bewaren voor het geval u het apparaat moet verzenden, of op moet slaan.

## Bediening en functies

### 1. Input

Met deze knop kunt u het inkomende signaal regelen totdat de peak indicator af en toe oplicht.

Let op: Het inkomende signaal zal ook het uitgaande signaal beïnvloeden, dit om de juiste balans te behouden tussen het directe en galm signaal.

### 2. Peak

Deze led licht op wanneer het inputsignaal ca. 4dB onder de vervormingsgrens komt. Het geeft niet als deze led af en toe oplicht.

### 3. Mix

Met deze knop mixt U het directe signaal met het galm signaal. Als de Qverb wordt gebruikt in serie met het inkomende signaal (b.v. bij insertiepunten of tussen mixer en versterker/cassette deck) dan kunt u de balans tussen ingangs signaal (dir) en reverb (rev) naar uw eigen smaak instellen.

Als u de Qverb gebruikt, verbonden met een aux send van een mengtafel dan zal het directe signaal door de mengtafel gaan en de Qverb geeft alleen het reverb signaal weer.

In deze opstelling zet U de mix control volledig rechtsom. De sterkte van het galm signaal moet op de mengtafel ingesteld worden. Dit kan een aux return of een ingangskanaal zijn.

### 4. Select

Met deze druktoets kiest u van links naar rechts voor de tien reverb programma's. De "special effects" led is rood en geeft aan dat een van de speciale programma's, aangegeven op de frontplaat, actief is.

### 5. Time

Met deze druktoets kiest u een van de acht tijd- en effectparameters, ook van links naar rechts.

### 6. Dark

Met deze druktoets dempt u de hogere frequenties.  
Let op: De "dark" schakelaar werkt niet als u een van de volgende programma's gebruikt:- gated reverb.  
- reverse reverb.  
- delay.  
- special effects.

### 7. Mute

Met deze druktoets schakelt u de gekozen reverb programma's uit. Alle led's gaan uit, behalve de mute led. Een gemakkelijke manier om signalen te vergelijken die wel en niet voorzien zijn van gain/effecten.

## In- en uitgangen

De Qverb is geheel stereo en heeft 2 ongebalanceerde ingangen en 2 ongebalanceerde uitgangen, uitgevoerd met jack sockets.

De ingangen zijn hoogohmige, en geschikt voor alle "line level" apparatuur. De ingangsgevoeligheid van de Qverb is niet hoog genoeg om direkt te werken met microphones of elektrische gitaren. Als een aangesloten instrument of ander apparaat niet de peak indicator kan activeren, betekent dit dat de Qverb niet genoeg wordt ingestuurd om een goed signaal te produceren zonder teveel ruisbijdrage. Lukt dit niet dan moet er een voorversterker worden gebruikt.

Om een goede signaal/ruis verhouding te verkrijgen moet de signaalbron in staat zijn de peakled af en toe te laten oplichten. Gebruik de input control om dit te realiseren. De bovenstaande situatie is belangrijk in het geval u last heeft van veel achtergrondruis.

Er is een linker- en een rechter input jack. Gebruikt u de Qverb in "serie" dan dient u beide jacks te gebruiken om de stereo situatie voor de uitgangen te behouden. In het geval u de mono aux send en stereo aux return van uw mixer gebruikt, hoeft u alleen de input van de Qverb aan te sturen. De ongebruikte ingang wordt automatisch parallel geschakeld aan de gebruikte ingang om een goede insturing te verkrijgen naar de Qverb's interne electronica.

**Belangrijk:** De input control zal ook het uitgangssignaal beïnvloeden om een juiste balans te behouden tussen het directe en bewerkte signaal.

De uitgangen van de Qverb kunnen elk tapedeck, versterker of effect return aansturen.

De jacks zijn bedraad in een "mono" arrangement, alleen de tip is verbonden met de electronica.



Om zoveel mogelijk te profiteren van het brede stereobeeld dat verschillende reverb programma's kunnen geven, moet u er op letten de uitgangen op de juiste manier met uw installatie te verbinden. Controleer dit door een van de jacks uit de uitgang te halen terwijl het apparaat gebruikt wordt. U kunt zo het Qverb signaal alleen horen in een van de stereo kanalen. Op het moment dat u de andere jack weer in de uitgang van de Qverb plugt, is het galsignaal weer te horen in beide kanalen.

**Belangrijk:** Het "3 tap panning" programma stelt u in staat te controleren of uw stereo bedrading korrekt is uitgevoerd. Dit programma geeft eerst in het linker kanaal een signaal, dan in het midden en daarna alleen in het rechter kanaal.

Wij wensen u een galmend succes toe met uw nieuwe Qverb.

**Belangrijk:** Het randapparatuur programma van D & R groeit nog steeds. Informeer eens bij uw dealer, of neem contact op met ons, tel.: 02940-18014,  
fax.: 02940-16987.

D & R Electronica b.v.  
Rijnkade 15b  
1362 GS WEESP  
HOLLAND

# Conformity statement according to ISO/IEC Nr. 22 and EN 45014

**Name Manufacturer** D&R Electronica Weesp b.v.  
**Address manufacturer** Rijnkade 15B,  
1382 GS Weesp,  
The Netherlands

declares that this product

**Name product** Q-Verb  
**Modelnumber** n.a.  
**Produktioptions** All

passed the following product specifications:

**Security** EN 60950: 1988 +A1, A2

**EMC:** CISPR-22: 1985 / EN 55022: 1988 class B (\*)  
EN 50082-1: 1992  
IEC 801-2:1991 / prEN 55024-2:1992 - 3kV CD, 8kV AD  
IEC 801-3:1984 / prEN 55024-3:1991 - 3 V/m  
IEC 801-4:1988 / prEN 55024-4:1992 - 0.5kV signalcables,  
1 kV powercables.

**Extra information:**

**The product passed the specifications of the following regulations;**

Low voltage 73 / 23 / EEG  
EMC-regulations 89 / 336 / EEG.

(\*) The product is tested in a normal users environment.



# PRODUCT SAFETY

This product is manufactured with the highest standards and is double checked in our quality control department for reliability in the "HIGH VOLTAGE" section.

## CAUTION

Never remove any panels, or open this equipment. No user serviceable parts inside.

Equipment power supply must be grounded at all times.

Only use this product as described, in user manual or brochure. Do not operate this equipment in high humidity or expose it to water or other liquids.

Check the AC power supply cable to assure secure contact. Have your equipment checked yearly by a qualified dealer service center.

Hazardous electrical shock can be avoided by carefully following the above rules.

## EXTRA CAUTION FOR LIVE SOUND

Ground all equipment using the ground pin in the AC power supply cable. Never remove this pin. Ground loops should be eliminated only by use of isolation transformers for all inputs and outputs. Replace any blown fuse with the same type and rating only after equipment has been disconnected from AC power. If problem persists, return equipment to qualified service technician

## PLEASE READ THE FOLLOWING INFORMATION VERY CAREFULLY.

Especially in sound equipment on stage the following information is essential to know.

An electrical shock is caused by voltage and current, actually it is the current that causes the shock.

In practise the higher the voltage the higher the current will be and the higher the shock.

But there is another thing to consider and it is resistance. When the resistance in Ohms is high between two poles, the current will be low and vice versa.

All three of these; voltage, current, and resistance are important in determining the effect of an electrical shock.

*However, the severity of a shock primarily determined by the amount of current flowing through a person.*

A person can feel a shock because the muscles in a body respond to electrical current and because the heart is a muscle it can affect, when the current is high enough. Current can also be fatal when it

causes the chest muscles to contract and stop breathing. At what potential is current dangerous.

Well the first feeling of current is a tingle at 0.001 Amp of current. The current between 0.1 Amp and 0.2 Amp is fatal.

Imagine that your home fuses of 20 Amp can handle 200 times more current than is necessary to kill. How does resistance affect the shock a person feels. A typical resistance between one hand to the other in "dry" condition could well over 100,000 Ohm.

*If you are playing on stage your body is perspiring extensively and your body resistance is lowered by more than 50%. This is a situation in which current can easily flow.*

Current will flow when there is a difference in ground potential between equipment on stage and in the P.A. system. Please do check if there is any potential between the housing of the mikes and the guitarsynth amps, which will be linked by your body on stage. Imagine, a guitar in your hand and your lips close to the mike! A ground potential difference of above 10 volts is not unusual, in improperly wired buildings it can possibly be as high as 240 volts.

Although removing the ground wire sometimes cures a system hum, it will create a very hazardous situation for the performing musician. *Always earth all your equipment by the grounding pin in your mains plug.*

*Hum loops should be only cured by propr wiring and isolation input/output transformers.*

Replace fuses always with the same type and rating after the equipment has been turned off and unplugged.

If the fuse blows again you have an equipment failure, do not use it again and return it to your dealer for repair.

And last but not least be carefull not to touch a person being shocked as you, yourself could also be shocked.

Once removed from the shock, have someone send for medical help immediately

*Always keep the above mentioned information in mind when using electrically powered equipment.*

D&R ELECTRONICA B.V. WEESP

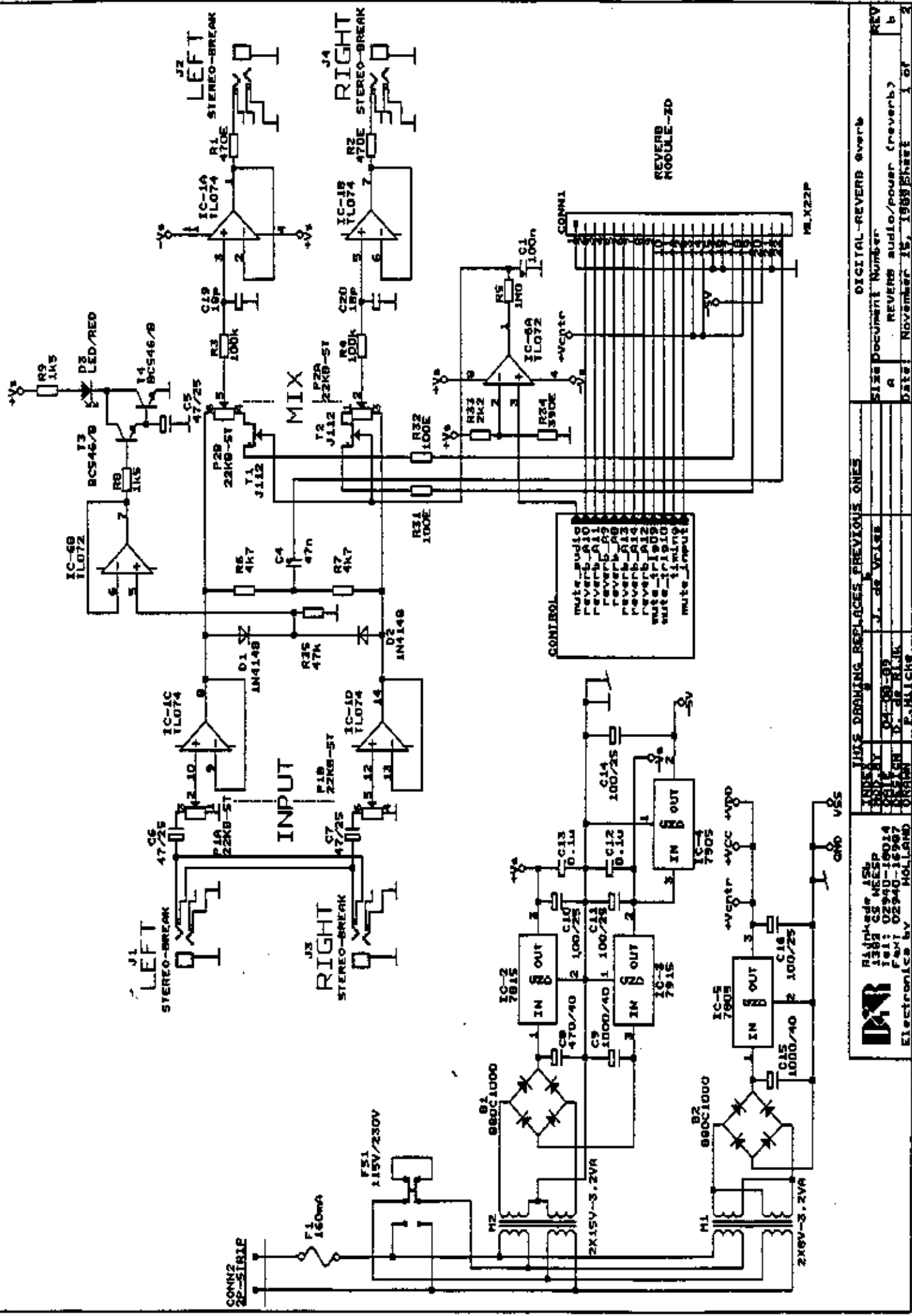
**"QVERB"**

**SERVICE MANUAL**

**DNR**







REVERB MODULE-20

MLX22P

		THIS DRAWING REPLACES PREVIOUS ONES	
RAJN-ede ASB 1389 CS MESEP Tel: 02940-16014 Fax: 02940-16967	DESIGNED BY D. de BLIK	DRAWN BY J. de VOICE	DIGITAL-REVERB overb
Electronics by HOLLAND	DIVISION	DATE: November 15, 1989	REV a REVERB audio/power (reverb) 1 of 2





Quantity	Reference	Part	Sheetname	Sheet#	Filename
1	B1	880C1000	<<<root>>>	1	REVERB
1	B2	880C1000	<<<root>>>	1	REVERB
1	CONN2	2P-STRIP	<<<root>>>	1	REVERB
1	C1c1	0.1u	CONTROL	2	REV_CNTR
1	C1c2	0.1u	CONTROL	2	REV_CNTR
1	C1c3	0.1u	CONTROL	2	REV_CNTR
1	C1c4	0.1u	CONTROL	2	REV_CNTR
1	C1c5	0.1u	CONTROL	2	REV_CNTR
1	C1c6	0.1u	CONTROL	2	REV_CNTR
1	C1c7	0.1u	CONTROL	2	REV_CNTR
1	C1c8	0.1u	CONTROL	2	REV_CNTR
1	C1	100n	<<<root>>>	1	REVERB
1	C4	47n	<<<root>>>	1	REVERB
1	C5	47/25	<<<root>>>	1	REVERB
1	C6	47/25	<<<root>>>	1	REVERB
1	C7	47/25	<<<root>>>	1	REVERB
1	C8	470/40	<<<root>>>	1	REVERB
1	C9	1000/40	<<<root>>>	1	REVERB
1	C10	100/25	<<<root>>>	1	REVERB
1	C11	100/25	<<<root>>>	1	REVERB
1	C12	0.1u	<<<root>>>	1	REVERB
1	C13	0.1u	<<<root>>>	1	REVERB
1	C14	100/25	<<<root>>>	1	REVERB
1	C15	1000/40	<<<root>>>	1	REVERB
1	C16	100/25	<<<root>>>	1	REVERB
1	C17	0.1u	CONTROL	2	REV_CNTR
1	C18	470n	CONTROL	2	REV_CNTR
1	C19	18p	<<<root>>>	1	REVERB
1	C20	18p	<<<root>>>	1	REVERB
1	D1	1N4148	<<<root>>>	1	REVERB
1	D2	1N4148	<<<root>>>	1	REVERB
1	D3	LED/RED	<<<root>>>	1	REVERB
1	D8	LED/RED	CONTROL	2	REV_CNTR
1	D9	LED/GRN	CONTROL	2	REV_CNTR
1	D10	LED/GRN	CONTROL	2	REV_CNTR
1	D11	LED/GRN	CONTROL	2	REV_CNTR
1	D12	LED/GRN	CONTROL	2	REV_CNTR
1	D13	LED/GRN	CONTROL	2	REV_CNTR
1	D14	LED/GRN	CONTROL	2	REV_CNTR
1	D15	LED/GRN	CONTROL	2	REV_CNTR
1	D16	LED/GRN	CONTROL	2	REV_CNTR
1	D17	LED/GRN	CONTROL	2	REV_CNTR
1	D18	LED/GRN	CONTROL	2	REV_CNTR
1	D19	1N4148	CONTROL	2	REV_CNTR
1	D20	1N4148	CONTROL	2	REV_CNTR
1	D21	1N4148	CONTROL	2	REV_CNTR
1	D22	1N4148	CONTROL	2	REV_CNTR
1	D23	1N4148	CONTROL	2	REV_CNTR
1	D24	LED/RED	CONTROL	2	REV_CNTR
1	D25	1N4148	CONTROL	2	REV_CNTR
1	D26	1N4148	CONTROL	2	REV_CNTR
1	D27	LED/GRN	CONTROL	2	REV_CNTR
1	D28	LED/GRN	CONTROL	2	REV_CNTR

Quantity	Reference	Part	Sheetname	Sheet#	Filename
1	D29	LED/GRN	CONTROL	2	REV_CNTR
1	D30	LED/GRN	CONTROL	2	REV_CNTR
1	D31	LED/GRN	CONTROL	2	REV_CNTR
1	D32	LED/GRN	CONTROL	2	REV_CNTR
1	D33	LED/GRN	CONTROL	2	REV_CNTR
1	D34	LED/GRN	CONTROL	2	REV_CNTR
1	FS1	115V/230V	<<<root>>>	1	REVERB
1	F1	160mA	<<<root>>>	1	REVERB
1	IC-1A	TL074	<<<root>>>	1	REVERB
1	IC-1B	TL074	<<<root>>>	1	REVERB
1	IC-1C	TL074	<<<root>>>	1	REVERB
1	IC-1D	TL074	<<<root>>>	1	REVERB
1	IC-2	7815	<<<root>>>	1	REVERB
1	IC-3	7915	<<<root>>>	1	REVERB
1	IC-4	7905	<<<root>>>	1	REVERB
1	IC-5	7805	<<<root>>>	1	REVERB
1	IC-6A	TL072	<<<root>>>	1	REVERB
1	IC-6B	TL072	<<<root>>>	1	REVERB
1	J1	STEREO-BREAK	<<<root>>>	1	REVERB
1	J2	STEREO-BREAK	<<<root>>>	1	REVERB
1	J3	STEREO-BREAK	<<<root>>>	1	REVERB
1	J4	STEREO-BREAK	<<<root>>>	1	REVERB
1	M1	2X8V-3.2VA	<<<root>>>	1	REVERB
1	M2	2X15V-3.2VA	<<<root>>>	1	REVERB
1	P1A	22KB-ST	<<<root>>>	1	REVERB
1	P1B	22KB-ST	<<<root>>>	1	REVERB
1	P2A	22KB-ST	<<<root>>>	1	REVERB
1	P2B	22KB-ST	<<<root>>>	1	REVERB
1	R1	470E	<<<root>>>	1	REVERB
1	R2	470E	<<<root>>>	1	REVERB
1	R3	100k	<<<root>>>	1	REVERB
1	R4	100k	<<<root>>>	1	REVERB
1	R5	1M0	<<<root>>>	1	REVERB
1	R6	4k7	<<<root>>>	1	REVERB
1	R7	4k7	<<<root>>>	1	REVERB
1	R8	1k5	<<<root>>>	1	REVERB
1	R9	1k5	<<<root>>>	1	REVERB
1	R10	4k7	CONTROL	2	REV_CNTR
1	R11	4k7	CONTROL	2	REV_CNTR
1	R12	4k7	CONTROL	2	REV_CNTR
1	R13	4k7	CONTROL	2	REV_CNTR
1	R14	4k7	CONTROL	2	REV_CNTR
1	R15	4k7	CONTROL	2	REV_CNTR
1	R16	4k7	CONTROL	2	REV_CNTR
1	R17	4k7	CONTROL	2	REV_CNTR
1	R18	4k7	CONTROL	2	REV_CNTR
1	R19	4k7	CONTROL	2	REV_CNTR
1	R20	100k	CONTROL	2	REV_CNTR
1	R21	100k	CONTROL	2	REV_CNTR
1	R22	390k	CONTROL	2	REV_CNTR
1	R24	220E	CONTROL	2	REV_CNTR
1	R25	220E	CONTROL	2	REV_CNTR
1	R26	4k7	CONTROL	2	REV_CNTR

REVERB audio/power (reverb)

Revision: b

Duplicated Reference Listing

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Quantity	Reference	Part	Sheetname	Sheet#	Filename
1	R27	100k	CONTROL	2	REV_CNTR
1	R28	220E	CONTROL	2	REV_CNTR
1	R29	220E	CONTROL	2	REV_CNTR
1	R30	4k7	CONTROL	2	REV_CNTR
1	R31	100E	<<<root>>>	1	REVERB
1	R32	100E	<<<root>>>	1	REVERB
1	R33	2k2	<<<root>>>	1	REVERB
1	R34	390E	<<<root>>>	1	REVERB
1	R35	47k	<<<root>>>	1	REVERB
1	SW1A	S2-BBM	CONTROL	2	REV_CNTR
1	SW2A	S2-BBM	CONTROL	2	REV_CNTR
1	SW3A	S2-BBM	CONTROL	2	REV_CNTR
1	SW4A	S2-BBM	CONTROL	2	REV_CNTR
1	SW4B	S2-BBM	CONTROL	2	REV_CNTR
1	T1	J112	<<<root>>>	1	REVERB
1	T2	J112	<<<root>>>	1	REVERB
1	T3	BC546/B	<<<root>>>	1	REVERB
1	T4	BC546/B	<<<root>>>	1	REVERB
1	U1	4043	CONTROL	2	REV_CNTR
1	U2	74HC42	CONTROL	2	REV_CNTR
1	U3	74HC192	CONTROL	2	REV_CNTR
1	U4	74HC42	CONTROL	2	REV_CNTR
1	U5A	74HC125	CONTROL	2	REV_CNTR
1	U5B	74HC125	CONTROL	2	REV_CNTR
1	U5C	74HC125	CONTROL	2	REV_CNTR
1	U5D	74HC125	CONTROL	2	REV_CNTR
1	U6A	74HC32	CONTROL	2	REV_CNTR
1	U6B	74HC32	CONTROL	2	REV_CNTR
1	U6C	74HC32	CONTROL	2	REV_CNTR
1	U6D	74HC32	CONTROL	2	REV_CNTR
1	U7A	74HC86	CONTROL	2	REV_CNTR
1	U7B	74HC86	CONTROL	2	REV_CNTR
1	U7C	74HC86	CONTROL	2	REV_CNTR
1	U7D	74HC86	CONTROL	2	REV_CNTR
1	U8	74HC192	CONTROL	2	REV_CNTR
1	U9	4053	CONTROL	2	REV_CNTR
1	U10	4053	CONTROL	2	REV_CNTR

Item	Part	Reference	Sheetname	Sheet#	Filename
1	0.1u	C1c1	CONTROL	2	REV_CNTR
2	0.1u	C1c2	CONTROL	2	REV_CNTR
3	0.1u	C1c3	CONTROL	2	REV_CNTR
4	0.1u	C1c4	CONTROL	2	REV_CNTR
5	0.1u	C1c5	CONTROL	2	REV_CNTR
6	0.1u	C1c6	CONTROL	2	REV_CNTR
7	0.1u	C1c7	CONTROL	2	REV_CNTR
8	0.1u	C1c8	CONTROL	2	REV_CNTR
9	0.1u	C12	<<<root>>>	1	REVERB
10	0.1u	C13	<<<root>>>	1	REVERB
11	0.1u	C17	CONTROL	2	REV_CNTR
12	100/25	C10	<<<root>>>	1	REVERB
13	100/25	C11	<<<root>>>	1	REVERB
14	100/25	C14	<<<root>>>	1	REVERB
15	100/25	C16	<<<root>>>	1	REVERB
16	1000/40	C9	<<<root>>>	1	REVERB
17	1000/40	C15	<<<root>>>	1	REVERB
18	100E	R31	<<<root>>>	1	REVERB
19	100E	R32	<<<root>>>	1	REVERB
20	100k	R3	<<<root>>>	1	REVERB
21	100k	R4	<<<root>>>	1	REVERB
22	100k	R20	CONTROL	2	REV_CNTR
23	100k	R21	CONTROL	2	REV_CNTR
24	100k	R27	CONTROL	2	REV_CNTR
25	100n	C1	<<<root>>>	1	REVERB
26	115V/230V	FS1	<<<root>>>	1	REVERB
27	160mA	F1	<<<root>>>	1	REVERB
28	18p	C19	<<<root>>>	1	REVERB
29	18p	C20	<<<root>>>	1	REVERB
30	1M0	R5	<<<root>>>	1	REVERB
31	1N4148	D1	<<<root>>>	1	REVERB
32	1N4148	D2	<<<root>>>	1	REVERB
33	1N4148	D19	CONTROL	2	REV_CNTR
34	1N4148	D20	CONTROL	2	REV_CNTR
35	1N4148	D21	CONTROL	2	REV_CNTR
36	1N4148	D22	CONTROL	2	REV_CNTR
37	1N4148	D23	CONTROL	2	REV_CNTR
38	1N4148	D25	CONTROL	2	REV_CNTR
39	1N4148	D26	CONTROL	2	REV_CNTR
40	1k5	R8	<<<root>>>	1	REVERB
41	1k5	R9	<<<root>>>	1	REVERB
42	220E	R24	CONTROL	2	REV_CNTR
43	220E	R25	CONTROL	2	REV_CNTR
44	220E	R28	CONTROL	2	REV_CNTR
45	220E	R29	CONTROL	2	REV_CNTR
46	22KB-ST	P1A	<<<root>>>	1	REVERB
47	22KB-ST	P1B	<<<root>>>	1	REVERB
48	22KB-ST	P2A	<<<root>>>	1	REVERB
49	22KB-ST	P2B	<<<root>>>	1	REVERB
50	2P-STRIP	CONN2	<<<root>>>	1	REVERB
51	2X15V-3.2VA	M2	<<<root>>>	1	REVERB
52	2X8V-3.2VA	M1	<<<root>>>	1	REVERB
53	2k2	R33	<<<root>>>	1	REVERB

Item	Part	Reference	Sheetname	Sheet#	Filename
54	390E	R34	<<<root>>>	1	REVERB
55	390k	R22	CONTROL	2	REV_CNTR
56	4043	U1	CONTROL	2	REV_CNTR
57	4053	U9	CONTROL	2	REV_CNTR
58	4053	U10	CONTROL	2	REV_CNTR
59	47/25	C5	<<<root>>>	1	REVERB
60	47/25	C6	<<<root>>>	1	REVERB
61	47/25	C7	<<<root>>>	1	REVERB
62	470/40	C8	<<<root>>>	1	REVERB
63	470E	R1	<<<root>>>	1	REVERB
64	470E	R2	<<<root>>>	1	REVERB
65	470n	C18	CONTROL	2	REV_CNTR
66	47k	R35	<<<root>>>	1	REVERB
67	47n	C4	<<<root>>>	1	REVERB
68	4k7	R6	<<<root>>>	1	REVERB
69	4k7	R7	<<<root>>>	1	REVERB
70	4k7	R10	CONTROL	2	REV_CNTR
71	4k7	R11	CONTROL	2	REV_CNTR
72	4k7	R12	CONTROL	2	REV_CNTR
73	4k7	R13	CONTROL	2	REV_CNTR
74	4k7	R14	CONTROL	2	REV_CNTR
75	4k7	R15	CONTROL	2	REV_CNTR
76	4k7	R16	CONTROL	2	REV_CNTR
77	4k7	R17	CONTROL	2	REV_CNTR
78	4k7	R18	CONTROL	2	REV_CNTR
79	4k7	R19	CONTROL	2	REV_CNTR
80	4k7	R26	CONTROL	2	REV_CNTR
81	4k7	R30	CONTROL	2	REV_CNTR
82	74HC125	U5A	CONTROL	2	REV_CNTR
83	74HC125	U5B	CONTROL	2	REV_CNTR
84	74HC125	U5C	CONTROL	2	REV_CNTR
85	74HC125	U5D	CONTROL	2	REV_CNTR
86	74HC192	U3	CONTROL	2	REV_CNTR
87	74HC192	U8	CONTROL	2	REV_CNTR
88	74HC32	U6A	CONTROL	2	REV_CNTR
89	74HC32	U6B	CONTROL	2	REV_CNTR
90	74HC32	U6C	CONTROL	2	REV_CNTR
91	74HC32	U6D	CONTROL	2	REV_CNTR
92	74HC42	U2	CONTROL	2	REV_CNTR
93	74HC42	U4	CONTROL	2	REV_CNTR
94	74HC86	U7A	CONTROL	2	REV_CNTR
95	74HC86	U7B	CONTROL	2	REV_CNTR
96	74HC86	U7C	CONTROL	2	REV_CNTR
97	74HC86	U7D	CONTROL	2	REV_CNTR
98	7805	IC-5	<<<root>>>	1	REVERB
99	7815	IC-2	<<<root>>>	1	REVERB
100	7905	IC-4	<<<root>>>	1	REVERB
101	7915	IC-3	<<<root>>>	1	REVERB
102	880C1000	B1	<<<root>>>	1	REVERB
103	880C1000	B2	<<<root>>>	1	REVERB
104	8C546/B	T3	<<<root>>>	1	REVERB
105	8C546/B	T4	<<<root>>>	1	REVERB
106	J112	T1	<<<root>>>	1	REVERB

Item	Part	Reference	Sheetname	Sheet#	Filename
107	J112	T2	<<<root>>>	1	REVERB
108	LED/GRN	D9	CONTROL	2	REV_CNTR
109	LED/GRN	D10	CONTROL	2	REV_CNTR
110	LED/GRN	D11	CONTROL	2	REV_CNTR
111	LED/GRN	D12	CONTROL	2	REV_CNTR
112	LED/GRN	D13	CONTROL	2	REV_CNTR
113	LED/GRN	D14	CONTROL	2	REV_CNTR
114	LED/GRN	D15	CONTROL	2	REV_CNTR
115	LED/GRN	D16	CONTROL	2	REV_CNTR
116	LED/GRN	D17	CONTROL	2	REV_CNTR
117	LED/GRN	D18	CONTROL	2	REV_CNTR
118	LED/GRN	D27	CONTROL	2	REV_CNTR
119	LED/GRN	D28	CONTROL	2	REV_CNTR
120	LED/GRN	D29	CONTROL	2	REV_CNTR
121	LED/GRN	D30	CONTROL	2	REV_CNTR
122	LED/GRN	D31	CONTROL	2	REV_CNTR
123	LED/GRN	D32	CONTROL	2	REV_CNTR
124	LED/GRN	D33	CONTROL	2	REV_CNTR
125	LED/GRN	D34	CONTROL	2	REV_CNTR
126	LED/RED	D3	<<<root>>>	1	REVERB
127	LED/RED	D8	CONTROL	2	REV_CNTR
128	LED/RED	D24	CONTROL	2	REV_CNTR
129	S2-BBM	SW1A	CONTROL	2	REV_CNTR
130	S2-BBM	SW2A	CONTROL	2	REV_CNTR
131	S2-BBM	SW3A	CONTROL	2	REV_CNTR
132	S2-BBM	SW4A	CONTROL	2	REV_CNTR
133	S2-BBM	SW4B	CONTROL	2	REV_CNTR
134	STEREO-BREAK	J1	<<<root>>>	1	REVERB
135	STEREO-BREAK	J2	<<<root>>>	1	REVERB
136	STEREO-BREAK	J3	<<<root>>>	1	REVERB
137	STEREO-BREAK	J4	<<<root>>>	1	REVERB
138	TL072	IC-6A	<<<root>>>	1	REVERB
139	TL072	IC-6B	<<<root>>>	1	REVERB
140	TL074	IC-1A	<<<root>>>	1	REVERB
141	TL074	IC-1B	<<<root>>>	1	REVERB
142	TL074	IC-1C	<<<root>>>	1	REVERB
143	TL074	IC-1D	<<<root>>>	1	REVERB

## DIGITAL-REVERB Qverb

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Item	Quantity	Reference	Part
1	1	IC-4	7905
2	1	IC-1	TL074
3	9	D1,D2,D19,D20,D21,D22, D23,D25,D26	1N4148
4	3	C5,C6,C7	47/25
5	14	R6,R7,R10,R11,R12,R13, R14,R15,R16,R17,R18,R19, R26,R30	4k7
6	1	C4	47n
7	2	P1,P2	22KB-ST
8	5	R3,R4,R20,R21,R27	100k
9	2	R1,R2	470E
10	2	B1,B2	BB0C1000
11	1	C8	470/40
12	4	C10,C11,C14,C16	100/25
13	1	IC-5	7905
14	2	T4,T3	BC546/B
15	1	CONN2	2P-STRIP
16	11	C12,C1c1,C1c2,C1c3,C1c4, C1c5,C1c6,C1c7,C1c8,C13, C17	0.1u
17	3	D3,D8,D24	LED/RED
18	4	J4,J1,J2,J3	STEREO-BREAK
19	1	FS1	115V/230V
20	1	F1	160mA
21	1	C1	100n
22	2	T1,T2	J112
23	2	R9,R8	1k5
24	2	R31,R32	100E
25	1	IC-6	TL072
26	1	R35	47k
27	1	R5	1M0
28	2	C20,C19	18p
29	1	M1	2X8V-3.2VA
30	2	C15,C9	1000/40
31	1	R33	2k2
32	1	R34	390E
33	1	IC-2	7815
34	1	IC-3	7915
35	1	M2	2X15V-3.2VA
36	1	U1	4043
37	2	U2,U4	74HC42
38	2	U3,U8	74HC192
39	1	U5	74HC125
40	1	U6	74HC32
41	1	U7	74HC86

## DIGITAL-REVERB Qverb

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Item	Quantity	Reference	Part
42	1	R22	390k
43	4	R25,R24,R28,R29	220E
44	1	C18	470n
45	2	U9,U10	4053
46	4	SW4,SW1,SW2,SW3	S2-88M
47	18	D18,D9,D10,D11,D12,D13, D14,D15,D16,D17,D27,D28, D29,D30,D31,D32,D33,D34	LED/GRN