The logo features a dashed black arc with two red square markers at its ends, positioned above the brand name.

Logitek



2VUB & 4VUB

DUAL or QUAD VU METER

Operation & Service Manual

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2VUB & 4VUB Mechanical Meters Instruction Manual

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SECTION 2 — PREPARATION FOR USE

2-1 Initial Inspection

Check the shipping carton carefully for external damage. If the carton shows evidence of abuse, ask the carrier's agent to be present when the unit is unpacked. Carefully unpack the unit to avoid damaging the equipment through the use of careless procedures. Inspect all equipment for damage immediately after unpacking. Bent and broken parts, dents, and scratches should be noted. If damage is found, refer to paragraph 2-2 for recommended claim procedures. Keep all packing material for possible future use.

2-2 Claims

If the unit has been damaged, notify the carrier immediately. File a claim with the carrier and advise Logitek of such action to arrange for repair or replacement without waiting for a claim to be settled with the carrier.

2-3 Repacking for Shipment

If the unit must be returned to Logitek, attach a letter to it showing the owner's name and address. A description of the necessary service should be included in the letter. The original shipping carton and packaging materials should be used for reshipment if possible. Use FRAGILE labels on each surface. Return the unit freight prepaid. Be sure to insure the unit for its full value. The unit will be repaired promptly and returned freight prepaid.

2-4 Mechanical Installation

The 2VUB & 4VUB are designed to be bolted into a standard nineteen inch equipment rack using the four front panel mounting holes.

2-5 Connections to Rear Panel Terminal Block

Inputs are connected to the meters via XLR connectors on the rear panel. The terminal functions are as follows.

Pin-1	Ground
Pin-2	Input +
Pin-3	Input -

2-6 Balanced and Unbalanced Audio Connections

Balanced sources can be connected to the 2VUB or 4VUB by following the "+", "-", and "Ground" designations listed above. Note that all inputs are high impedance bridging. However, a 600 ohm resistor can be strapped across any input that needs a low impedance.

Unbalanced line-level sources (such as phono jack outputs) can be fed to the 2VUB or 4VUB by connecting the "hot" lead from the source to the "+" input pin on the XLR connector and connecting the shield from the source to the "-" input pin. If either the meter or the source unit is not grounded, either by the third prong of its power cord, or by a separate audio ground cable, then an additional wire should be added to connect the "-" input terminal on the meter to the nearest ground terminal.

Care should be taken to be sure that cable shields are connected to grounded equipment on only one end of the cable. On any cable which connects two pieces of equipment, of which both are grounded, the cable shield must be left unconnected on one end, or poor noise performance may result.

2-7 Setting "0 VU" Level

The 2VUB & 4VUB units are factory adjusted so that a 0 dBu balanced input to a meter will be displayed as "0 VU" on the meter dial. If a different input level is used the meter "0" point may be set between -10 dBu and +10 dBu by adjusting the trim controls located adjacent to each input connector.

2-8 Phase Button

A phase test button is provided for meters 1 & 2 and another button is provided for meters 3 & 4 (on the 4VUB only). The phase test mode is active when a colored dot is visible in the cap of the push-on/push-off button. The phase test displays the sum of the two inputs on the left meter and the difference of the two inputs on the right meter. If the sum level(left meter) is larger than the difference level(right meter) then the two inputs are probably phased correctly.

SECTION 3 — PRINCIPLES OF OPERATION

3-1 General Information

***** **WARNING** *****

Results will be greatly enhanced by making use of all available diagnostic information, including the circuit descriptions in this section and direct help from Logitek technicians, before attacking the circuitry with wire cutters, soldering irons, hammers or other tools of destruction!

Before attempting any repair or modification of the 2VUB or 4VUB, the technician should become thoroughly familiar with the circuit in question by reading the technical description below and by studying the accompanying diagrams. Engineers at the Logitek factory will be happy to discuss all aspects of the circuitry, both during and after the warranty period.

3-2 Access to Circuit Cards

The meter circuitry can be accessed by removing the unit's top cover.

3-3 Power Supply

Power cord P12 is connected to the primaries of transformer T1 via a 1/4 amp slow-blow fuse. The primaries are hooked in series for 220 volt operation or in parallel for 110 volt operation by switch SW1. The secondaries of T1 are hooked in a center tap ground configuration to full-wave bridge rectifier RT1. The output of RT1 is filtered by C14 & C15 and regulated to +/- 5Vdc by IC8 & IC9. The supplies are stabilized by C16, C17 & C9, while D1 & D2 prevent damage to the regulators if the supply rails are shorted together.

***** **SAFETY WARNING** *****

Do *NOT* replace fuses without first disconnecting power to the console to avoid shock hazard. ALWAYS use fuses of the same value as that specified in this manual. Do *NOT* use slow-blow types except where specified. Do *NOT* use fuses of higher value than that specified. Improper fuses may cause fire and shock hazard as well as damage to the equipment.

A blown fuse is most often, though not always, a symptom of another failure. Therefore, related circuitry should be examined carefully, especially if a fuse blows more than once.

3-4 Meter Circuits

The input to the far left-hand meter (meter 1) is connected to a RF lowpass filter formed by R9, R10, C1 and C2. The resistors also form a -9 dB pad with the input impedance of balanced receiver IC1. IC1 provides an additional -6 dB pad between its input and output. The pads allow +20 dBu input signals to be handled by the +/- 5 volt supply rails.

When phase switch SW2 is in the inactive (non indicating) position, the output of IC1 is connected to meter driver IC5b via DC stripper C10 and resistor R22. The 0 VU point of the meter may be set between -10 dBu and +10 dBu by adjusting the gain of IC5b via feedback resistor R1. The output of IC5b directly drives meter MTR1.

In the same way a signal at J2 drives MTR2 via IC2, R21, SW2 and IC5a. The output of IC2 is also phase inverted by IC6a.

When phase switch SW2 is in the active (indicating) position MTR1 is fed the sum of input1 and input2 via resistors R19 and R20. MTR2 is fed the sum of input1 and phase inverted input2 via resistors R17 and R18. If the in-phase sum is larger than the out-of-phase sum then the inputs are in correct phase with each other.

Meters 3 and 4 (on the 4VUB only) are driven in the same way as meters 1 and 2.

SECTION 4 — REPLACEMENT PARTS LIST

All replacement parts are stocked in depth at the Logitek factory. Most are also available through local electronic parts distributors. For your convenience in purchasing replacement parts locally, we include the following parts list.

All Logitek part numbers consist of a two-letter manufacturer code followed by that manufacturer's standard part number for the item. A list of manufacturers, arranged alphabetically by manufacturer code, follows this parts list in Section 7.

All resistors are 1/4 watt, +/- 5% tolerance unless otherwise noted.

Components associated with meters 3 and 4 are not present on the 2VUB unit.

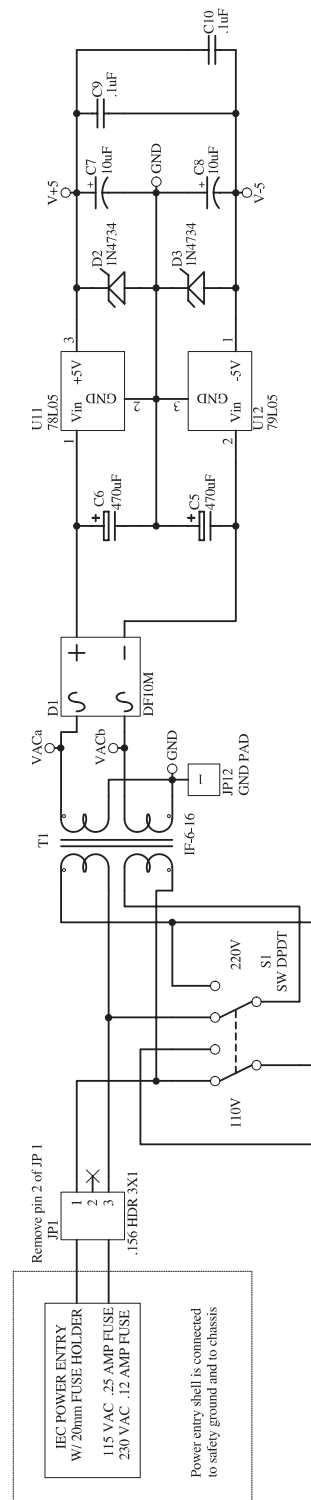
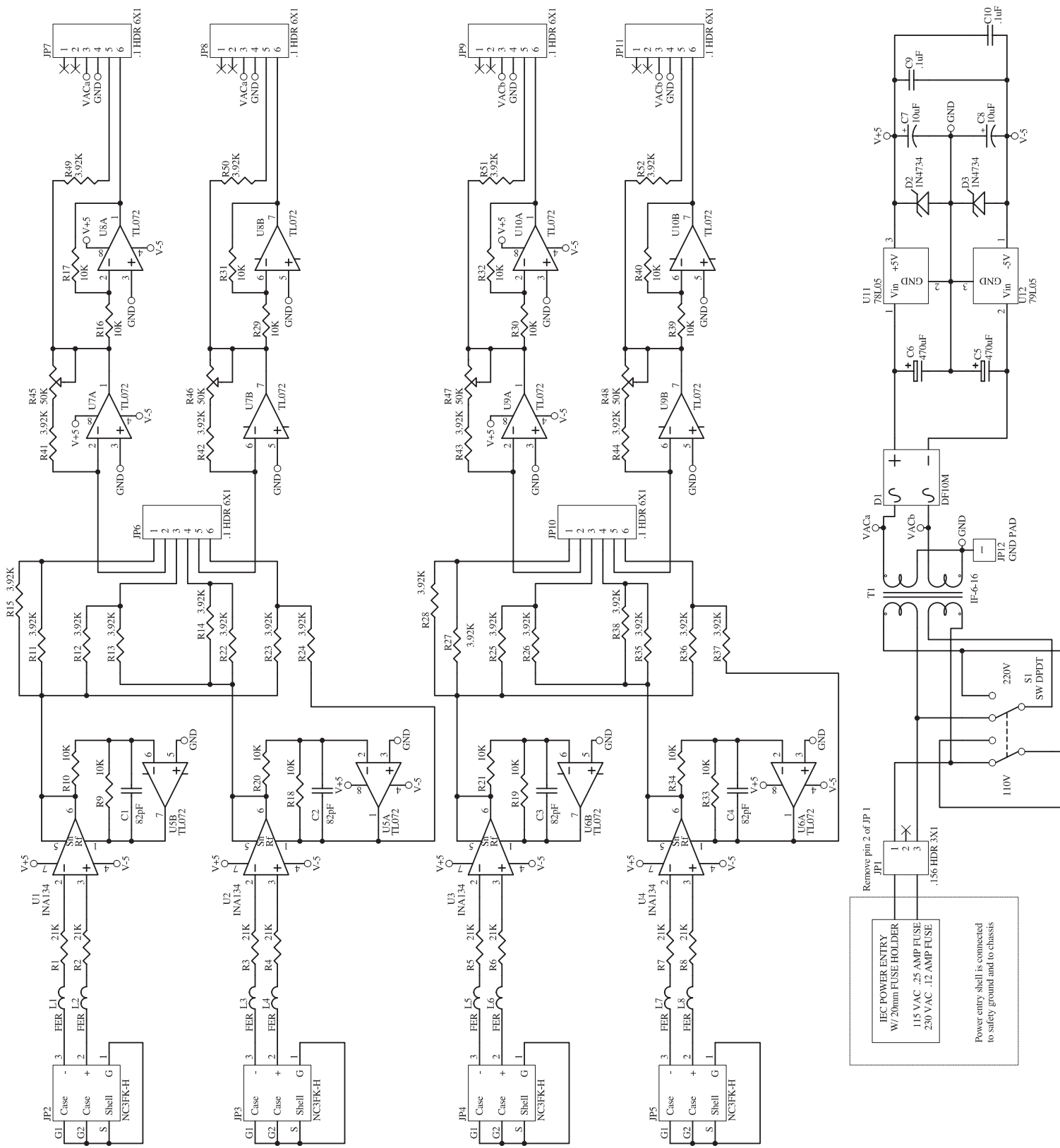
SYMBOL	DESCRIPTION	LOGITEK PART NUMBER
4-1 2VUB & 4VUB Meter		
Capacitors		
C1-8	75pf ceramic	CE-DD-750
C9	.22uf/50V tantalum	AV-TAP224K050CCS
C10-13	47uf/10V non-polar electrolytic	NI-UES1A470MPJ
C14,15	470uf/25V electrolytic	IL-477RMR025
C16,17	10uf/25V tantalum	AV-TAP106K025HSB
Diodes		
D1,2	5.6 volt zener, 1 watt	MO-1N4734A
Integrated Circuits		
IC1-4	Balanced line receiver	AD-SSM2143P
IC5-7	Fet op amp	TI-TLO72CP
IC8	-5VDC regulator	MO-MC79L05ACP
IC9	+5VDC regulator	MO-MC78L05ACP
7 pc.	8-pin socket	EM-100-083-10-1005
Connectors		
J1-4	XLR female pc	NT-NC3FK-H
P5-10	6-pin header	PN-MFSS100-6A
P11	3-pin large header	PN-MFSS156-3A
P12	AC power entry	SR-6200.4115
6 pcs.	6-pin socket	PN-CE100F28-6A
1 pc.	3-pin large socket	PN-CE156F20-3A
Fuses		
F1	1/4 amp slow blow 20mm	LF-218.250
Meters		
MTR1-4	2 1/2" VU	SO-AL29R WF bezel,b-scale
4 pcs.	2 1/2" Light Box	SO-29/Light box 12VDC
4 pcs.	meter lamp, 12 volt, 100 mA	CM-8918
Resistors		
R1-4	50K trim pot multi-turn	MP-CT9X503
R5-8	3300	
R9-16	21K, 1%	
R17,20	4220, 1%	
R21,22	2100, 1%	
R23-30	4220, 1%	
R31,32	2100, 1%	
Rectifiers		
RT1	1A bridge	GI-DF10M

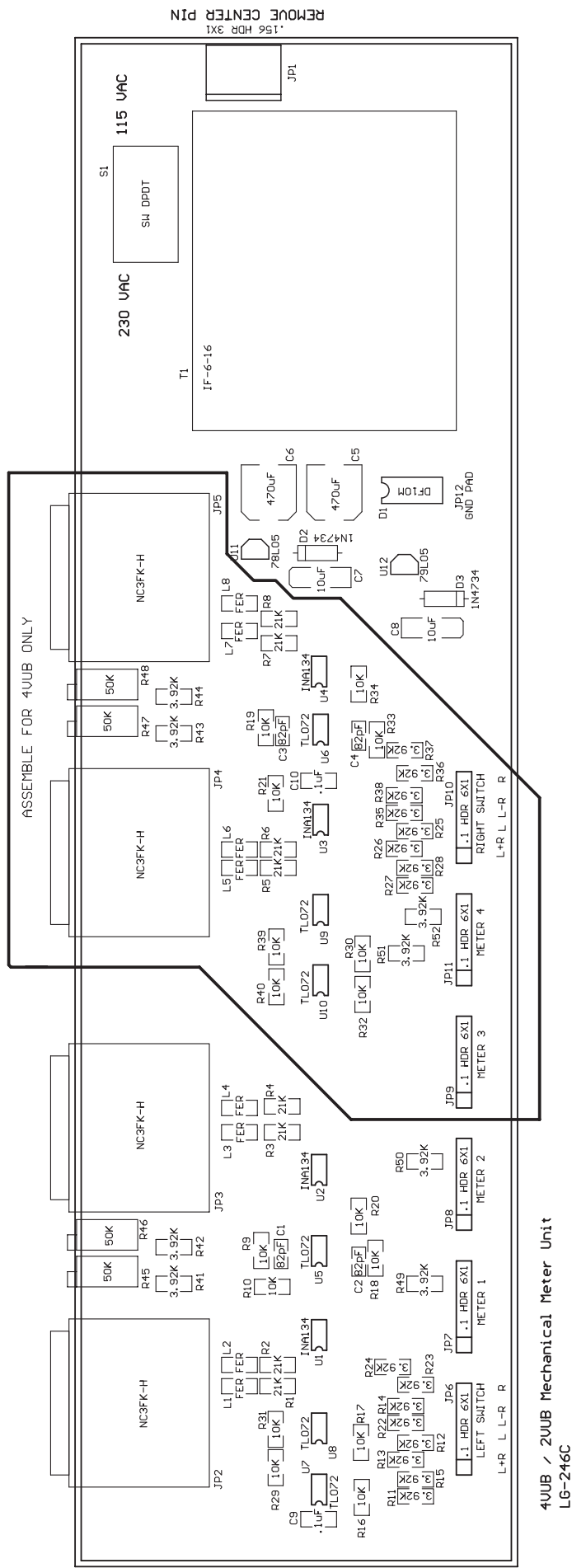
SYMBOL	DESCRIPTION	LOGITEK PART NUMBER
	Switches	
SW1	DPDT slide	CK-L202-121MS-02QE
SW2,3	2P pushbutton	SH-ZF142ueetb-01011201
	Transformers	
T1	8V 750mA	SI-IF-6-16
1 pc.	4VUB meter driver	LG-246
1 pc	IEC power cord (North America)	BE-17251

SECTION 5 — MANUFACTURERS LIST

CODE	MANUFACTURER	LOCATION
AD	Analog Devices, Inc.	Norwood, MA
AV	AVX Corp.	Myrtle Beach, SC
BE	Belden Wire and Cable	Richmond, IN
CE	Centralab/Philips Components	Riviera Beach, FL
CK	C&K Components	Watertown, MA
CM	Chicago Miniature Lamp, Inc.	Buffalo Grove, IL
EM	Ecam Technology	Scottsdale, AZ
GI	General Instruments/Quality Technologies	Sunnyvale, CA
IL	Illinois Capacitor	Lincolnwood, IL
LF	Littlefuse, Inc.	Des Plaines, IL
LG	Logitek (Circuit cards)	Houston, TX
MO	Motorola Semiconductor Products	Phoenix, AZ
MP	Mepco/Electra Inc.	San Diego, CA
NI	Nichicon Corporation	Schaumburg, IL
NT	Neutrik USA Inc.	Lakewood, NJ
PN	Panduit Corp.	Tinsley Park, IL
SI	Signal Transformer	Inwood, NY
SH	ITT Schadow	Eden Prairie, MN
SO	Selco Products	Buena Vista, CA
SR	Schurter, Inc.	Petaluma, CA

SECTION 6 — DIAGRAMS







TWO YEAR LIMITED WARRANTY

Logitek Electronic Systems, Inc. warrants its professional equipment (excluding Logitek Software, which is covered by a separate warranty) against defects in materials and workmanship for two years pursuant to the following terms and conditions. The warranty extends to the original purchaser only.

LOGITEK will repair or replace, at its option, at its factory without charge professional equipment if a defect in materials or workmanship develops during the first two years following purchase, when the equipment is returned to the factory or LOGITEK authorized service centers freight prepaid with a description of the nature of the failure. No reimbursements can be made for repair charges that are not factory authorized. After repair or replacement, LOGITEK will return the equipment to the purchaser freight prepaid.

In the event that any part of this professional equipment becomes defective during the first two years following purchase, and purchaser wishes to attempt repair, purchaser may obtain a replacement part by notifying LOGITEK of the part of the equipment which has failed. LOGITEK will thereafter ship a replacement part, freight prepaid. LOGITEK may require the purchaser to return the defective part to LOGITEK freight prepaid as a condition of such replacement, either before or after LOGITEK ships the replacement part. LOGITEK shall not be responsible for any other charges or liabilities associated with purchaser--made repairs.

No part or equipment shall be considered defective if it fails to operate due to exposure to extreme temperatures or excessive moisture in the atmosphere.

Light bulbs, batteries, potentiometers or other equipment not manufactured by Seller shall carry only the warranty, if any, of the original equipment manufacturer in effect at the time of shipment of this order; and Seller's obligation under this warranty shall be limited to such adjustment as Seller may obtain from the original manufacturer.

This limited warranty is void if equipment is modified or repaired without authorization; subjected to misuse, abuse, accident, water damage or other ne-

glect; or has had its serial number defaced or removed.

No obligation is assumed by LOGITEK to update previously manufactured equipment. Specifications are subject to change without notice. **EXCEPT AS SPECIFICALLY PROVIDED HEREIN, LOGITEK MAKES NO WARRANTY, REPRESENTATION, PROMISE, OR GUARANTEE, EITHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, WITH RESPECT TO THE EQUIPMENT, USER DOCUMENTATION OR RELATED TECHNICAL SUPPORT, INCLUDING THEIR QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL LOGITEK BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, TORT, ECONOMIC, COVER, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR INABILITY TO USE LOGITEK PRODUCTS, EQUIPMENT, OR SERVICES, INCLUDING, WITHOUT LIMITATION, DAMAGES OR COSTS RELATING TO THE LOSS OF PROFITS, BUSINESS, GOODWILL, DATA OR COMPUTER PROGRAMS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO CASE SHALL LOGITEK'S LIABILITY FOR MONEY DAMAGES EXCEED THE AMOUNT PAID BY YOU FOR THE LOGITEK EQUIPMENT OUT OF WHICH SUCH CLAIM AROSE. THE FOREGOING LIMITATIONS SHALL NOT APPLY TO CLAIMS RELATING TO DEATH OR PERSONAL INJURY WHICH ARISE OUT OF PRODUCTS DEEMED TO BE CONSUMER GOODS UNDER APPLICABLE LAW.**

Some states or provinces do not allow the exclusion or limitation of implied warranties or limitation of liability for incidental or consequential damages, so the above exclusion or limitation may not apply to you.

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