

HANDBOOK

FM 10E

BROADCAST FM EXCITER

IPTEK

Limited Warranty

PTEK (SELLER) warrants that products are free from defects in material and workmanship and meet performance specifications provided, however, that:

- (A) SELLER' liability under this Warranty is limited to repairing or replacing, at its option, any product delivered here under not conforming to this Warranty;
- (B) This Warranty is limited to a period of two years;
- (C) Minor deviations from specifications which do not affect performance are excluded from this Warranty; and
- (D) SELLER shall be liable under this Warranty only if:
 - (1) It is promptly notified in writing by the Buyer upon discovery of the failure of any product to conform to this Warranty,
 - (2) The product is returned to SELLER, transportation charges prepaid by the Buyer,
 - (3) The product is received by SELLER not later than ten days after the last day of the one-year period of this Warranty, and
 - (4) SELLER' examination of the Product discloses to SELLER'S reasonable satisfaction that such defects or failures as may exist have not been caused by misuse, neglect, improper installation, repair, alteration, accident or shipping.

The Buyer will prepay freight to and from SELLER on products serviced here under at SELLER' plant; but SELLER may, at its option, elect to perform any repairs here under at the Buyer's place of business.

The foregoing constitutes SELLER'S entire Warranty expressed, implied and/or statutory, except as to title, and states the full extent of SELLER'S liability to the Buyer or to any other party for any breach of such Warranty and for damages, whether direct, special, incidental or consequential; and, other than as expressly provided in this document. No Warranties, expressed or implied, including any Warranty or merchant ability or of fitness for a particular purpose, are made. No employee, representative or agent of SELLER has any authority, expressed or implied, to alter or to supplement the terms of this Warranty.

Warranty Service

The Limited Warranty covers parts and labor to the original purchaser for one year. Damage caused by misuse or shipping is excluded from the warranty. Before returning units or material, contact the factory for a Returned Material Authorization (RMA) number. Ship all material prepaid. Defective material should be addressed to:

PTEK

**Customer Service Manager
1814 Schooldale Drive
San Jose, CA. 95124
(408) 448-3342**

Contents

Safety Notice4

Specifications5

Front & Rear Panel Layout6

Installation8

FCC,12

Rev record

PROVISIONAL.....1/5/03

REV A.....5/11/03

Safety

BEFORE APPLYING POWER

Verify that the line voltage is 115V

GROUND THE EXCITOR.

To minimize shock hazard, the excitor chassis must be connected to an electrical ground. the excitor must be connected to the ac power mains through a three-conductor power cable, with the third wire firmly connected to an electrical ground (safety ground) at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury. If the excitor is to be energized by any other source be certain the that chassis is connected to a separate safety ground.

Fuses

Only fuses with the same required current, voltage rating, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuseholders. To do so could cause a shock or fire hazard.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE

Do not operate the power amplifier in the presence of flammable gases or fumes.

DO NOT REMOVE THE EXCITOR COVER

Operating personnel must not remove the exciter cover. Component replacement and internal adjustments must be made only by qualified service personnel.

Output connector

The type N output connector carries dangerously high RF voltages which present a shock and burn hazard. **NEVER** operate this excitor with out the out put connector properly terminated in either an adequately rated load or antenna.

Specifications

MONAURAL

Audio Input Impedance:

600 ohms, balanced

Audio Input Level:

+10 dBm (6.93 volts peak-to-peak) at 600 ohms for 75 kHz deviation

Audio Frequency Response:

+/-0.5 dB; flat or 75 microsecond pre-emphasis, 20 Hz to 15kHz (other time const. available)

Total Harmonic Distortion:

0.25% max.; 20 Hz to 15 kHz

FM S/N Ratio (FM Noise):

65 dB min. below 75 kHz deviation at 400 Hz, measured within a 20 Hz to 15 kHz bandwidth with 75 microsecond de-emphasis

Asynchronous AM S/N Ratio (AM Noise):

60 dB RMS. below carrier; reference: 100% AM modulation, at 400 Hz with 75 microsecond de-emphasis, no FM modulation

Synchronous AM SIN Ratio (Incidental AM Noise):

57 dB below carrier; reference: 100% AM modulation, full power at 400 Hz with 75uS de-emphasis, FM +/- 75 kHz, 400Hz

ENVIRONMENT

Altitude:

0-10,000 ft

Ambient Temperature

-10 to +40 °C

WIDEBAND

Inputs:

Composite Unbalanced 10k Ohms

Input Level:

3.5 V RMS. (10 Volts peak-to-peak) for 75 kHz deviation

Wideband Amplitude Response:

+/-0.5 dB, 20 Hz to 100 kHz

GENERAL

Rated Power Output:

1 to 15W

Power Consumption:

50 W

Frequency Range:

87.7 to 108 MHz, in 200 kHz steps (other step size to order)

Frequency Control:

Phase locked loop frequency synthesis from high stability master oscillator

Frequency Stability:

+/- 1.2 kHz

Output Impedance:

50 ohms

Output Connector:

Type -"N" female

VSWR:

1.5:1 for full power, derate to 0 at inf.

Modulation Type:

Direct carrier frequency modulation

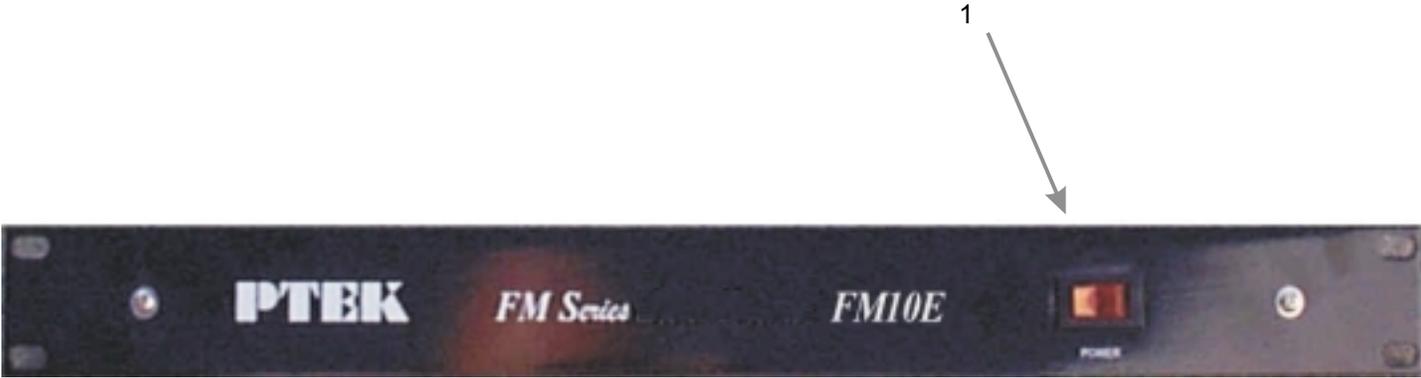
Modulation Capability:

Internally limited to 100 kHz deviation

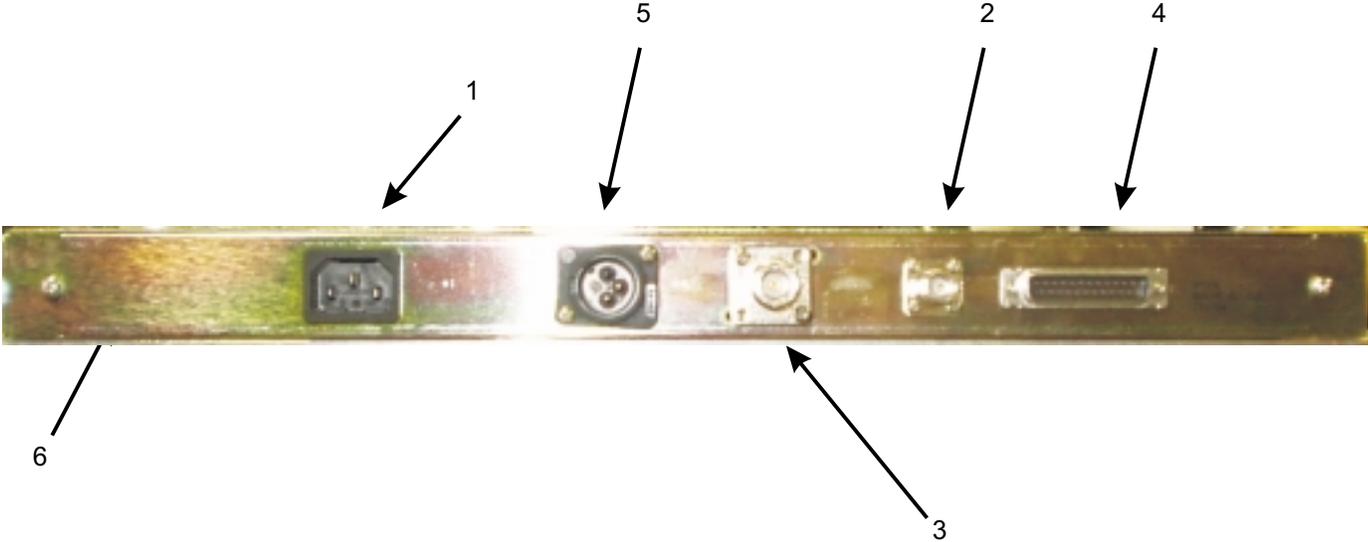
Harmonic Attenuation:

-70 dB, min.

Front panel layout



Rear panel layout



Key	Element	Description
1	OPERATE Switch and Indicator	This switch sets the Exciter to the Operate Mode; 110 VAC is applied to the power supply and this amber indicator is lit.

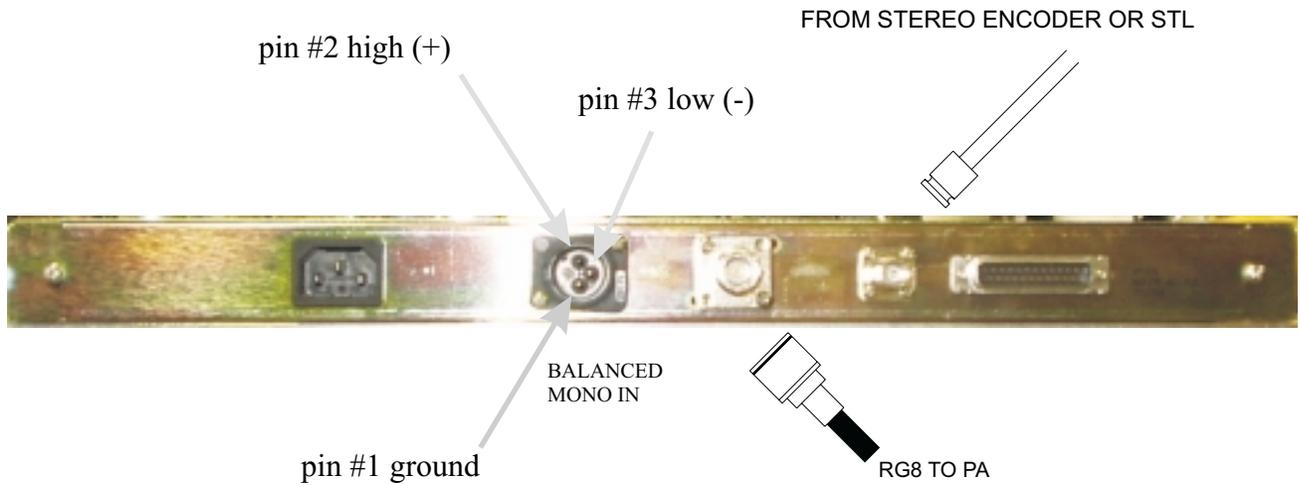
Key	Element	Description
1	AC IN & FUSE	110 VAC input
2	COMPOSITE	Unbalanced wide band composite input
3	RF OUT	TYPE N RF Output
4	SERIAL PORT	Serial data for programming of frequency and output power
5	MONO INPUT	Balanced line in (mono)
6	SERIAL NUMBER	Serial number for reference purposes

Installation-Electrical

Refer to the Table below for the following description. The installer should assure the ac line voltage is turned OFF before performing this procedure. The electrical connections are installed at the Exciter rear panel.

Step	Procedure
1	Connect the load RF line to RF OUT connector.
3	Connect the ac line power to the ac line in connector.
4	Optional. Connect the remote site metering, to the rear terminal block.
5	Connect either the composite input to the output from a stereo encoder or the balanced mono input to a program source

OR (NOT BOTH)



Turn-On Checkout

Refer to the Table below for the following procedure.

Step	Action	Verification
1	Switch the RF out to a dummy load.	Wait 30 seconds for the exciter to tune. The exciter power will ramp up to 10W at a frequency of 98MHz (default factory setting)
2	Turn on the ac line power to excitor.	

Programing

Step	Action	Response
1	Switch the exciter off	
2	Connect the serial cable to a computer serial port.	
3	Set the communications as follows :- Note the setting to use with windows hyper Terminal can be down loaded from http://www.ptekpower.com/new_page_6.htm	2400 Baud, 8 data bits, no parity, 1 stop bit (Local echo on)
4	Switch the exciter on	110773 REV A (software part number and rev)
5	Wait for delay	> (prompt)
6	Hit <<return>>	200 (power setting 0-225) 980 (Frequency in 100kHz, this sample is 98.0MHz)
7	Type P <<return>>	P?
8	Type any value 0-255 (corresponding to the desired output power see chart) <<return>>	>
9	Type F <<return>>	F?
10	Type frequency in 100kHz ie 92.3MHz would be 923 <<return>>	>
11	Hit <<return>>	200 Confirmation of power and frequency settings) 923
12	Switch off and remove serial cable	Exciter is now ready to use

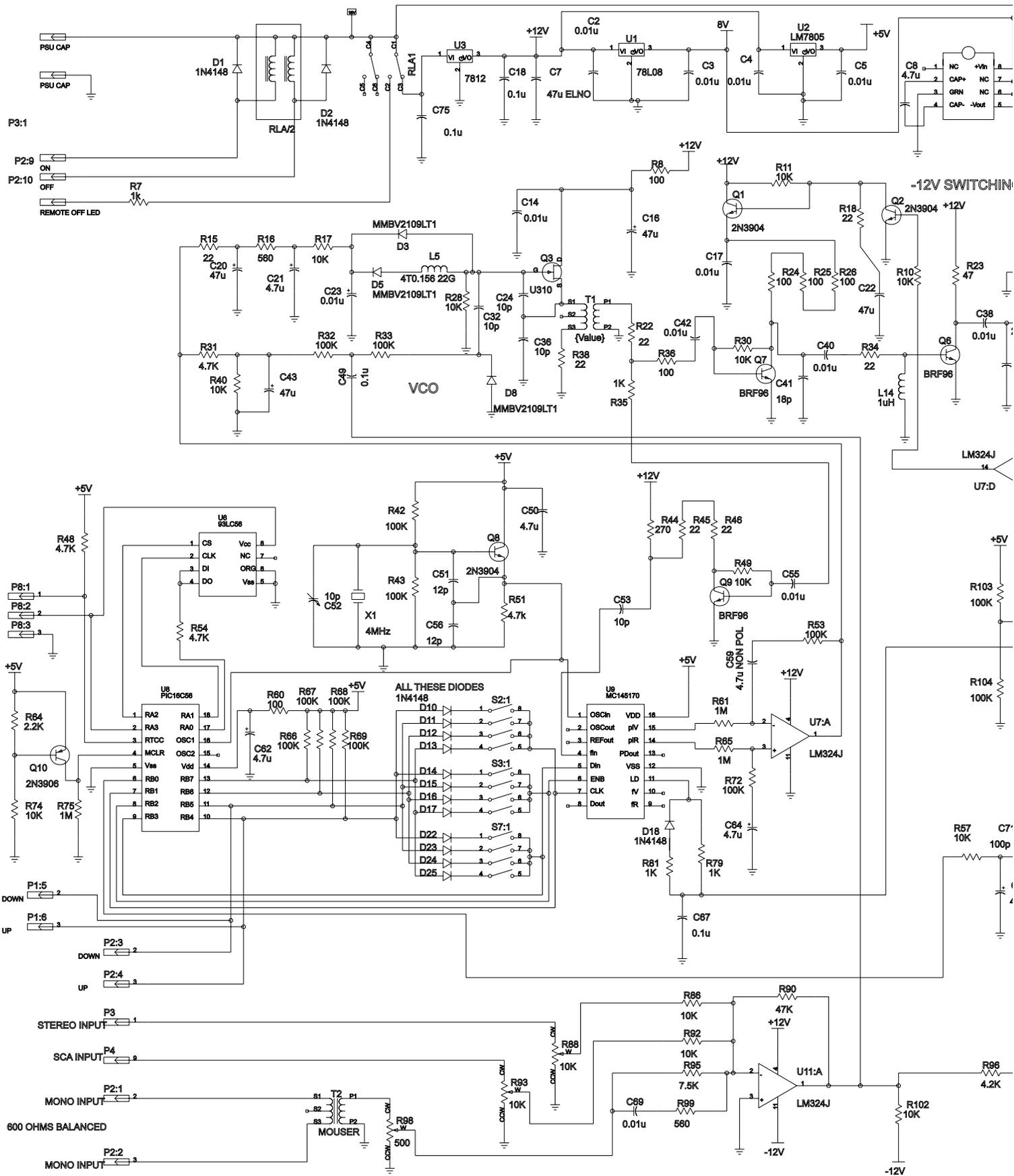
Power Setting Vs Power Output

<i>Power Setting</i>	<i>Power Output</i>
255	16.0
250	15.8
240	14.5
220	11.8
200	10.0
180	8.0
160	6.5
140	4.8
120	3.1
100	1.2
80	0.7
60	0.7

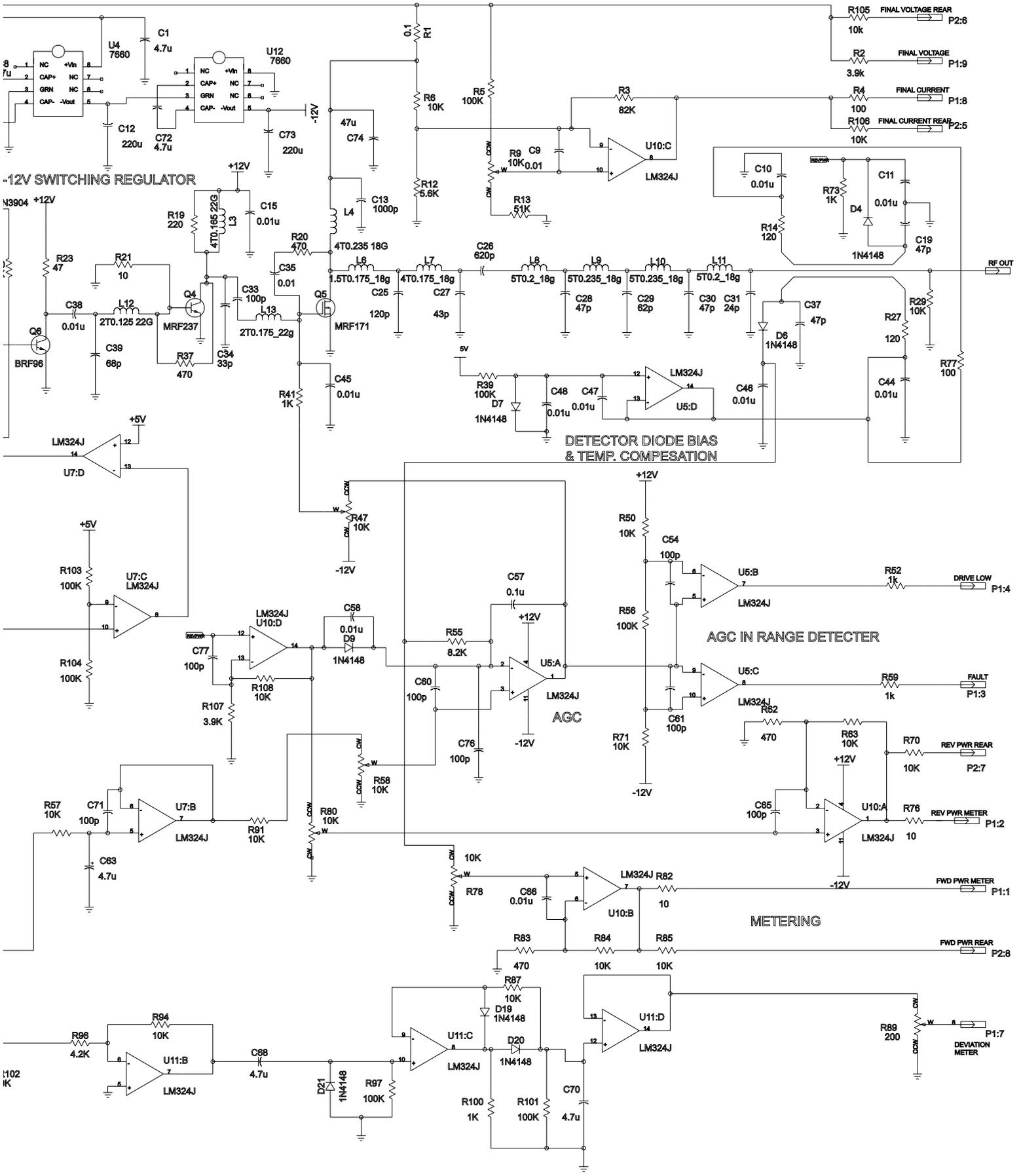
FCC Compliance statement

THIS DEVICE HAS BEEN VERIFIED TO COMPLY WITH PART 73 OF THE FCC RULES.
FOR USE AS AN EXCITER ONLY

EXCITER SCHEMATIC



EXCITER SCHEMATIC



PTEK
1814 Schooldale Drive
San Jose CA 95124
408 448 3342 FAX 408 448 5951
Printed in USA