1.1.1 Take the board over to the Chip ID pc and read the id chip per the instructions given during the test. The easiest way to do this is to use the J1 connector adapter found in the EXIB test kit. Data will be J1-43, and GND will be J1-44. Once you're done verifying/programming the chip ID, you are finished using this pc. Disconnect J1 temporarily for the following test steps, until it is called for again.

1.1.2 **Resistance checks of attenuator circuits:** Using your Fluke meter, measure the following points and make sure the resistances are within 1% of tolerance:

Point to Point	**Resistance**
E1 to J1-1	1.245M ohm
E1 to J1-2	1.25M ohm
E2 to J1-3	1.245M ohm
E2 to J1-4	1.25M ohm
E3 to J1-5	1.245M ohm
E3 to J1-6	1.25M ohm
E4 to J1-7	1.245M ohm
E4 to J1-8	1.25M ohm
E5 to J1-9	1.245M ohm
E5 to J1-10	1.25M ohm

1.1.3 **700V breakover diodes:** There are four diodes used to automatically trigger scr operation when a certain voltage is attained. To test these breakover (or "avalanche") diodes, simply set up the Fluke 5500A Calibrator machine to output 680Vdc, but leave it in standby mode for the moment. As you connect to each of the following points on the table below, you will start out at 680Vdc, select OPR (operate), then move the curser under the tens place, so you can use the

thumbwheel to step the voltage up to 690, and then 700. Once you reach 700Vdc, the 5500A should go into overload protection (reset). This indicates the diode operated properly. For the test to work, you must connect the 5500A to the diode so that the polarity is forward biased. Once again, connect according to the following table and repeat the step for each connection:

Diode #	Positive lead	Negative lead
D101	TP101	TP102
D102	TP102	TP103
D103	TP104	TP105
D104	TP105	TP106

1.1.4 Power up and on-board voltage outputs: Connect the transformer supplied in the EXIB test kit to connector J12 and plug the 110Vac cord into an outlet. This should power up the board, several green LEDs. Use the following table to confirm proper DC voltage outputs:

Common	Test Point	Expected Voltage
DCOM (TP613)	P5 (TP612)	+5V
PCOM (TP602)	P24 (TP604)	>+24V
PCOM (TP605)	N24 (TP605)	>-24V
COMH (TP73)	P12H (TP72)	+12V
COMH (TP73)	N12H (TP74)	-12V
COMH (TP73)	P5H (TP75)	+5V

1.1.5 Blown Fuse detection: With board still powered up, you should have noticed that the green LED "MOK" switched off and the red LED "MNOK" switched on after a few seconds. This is normal. Connect the spade terminals of your extension cord to stab-on terminals E6, E7, and E8. Plug the cable into a 3-phase 240Vac outlet and turn the power on. This should cause it to switch back to "MOK". If LED's switched, then you are done with the 3-phase power. Remove it, but leave the rest of the board powered up.

1.1.6 Shunt Voltage to Frequency and back to Voltage output: For this test, you will once again be using the Fluke 5500A or an equivalent milliVolt source for 0-100mVdc input to the card at J2-1 (-) and J2-2 (+). Connect the J1 adapter with the IS200FTVA card attached to J1. Observe the voltage connections listed on the blue adapter panel, and make the appropriate connections to power up the FTVA card. This card is used simply to take the frequency output of the EXIB and turn it into a predictable test reference voltage. Now, connect your Fluke DVOM leads to ACOM (-) test point on the FTVA card, and either FIN5 or FIN6 test points (+) for a voltage reading. FIN5 and FIN6 are scaled differently (within the EXIB card) and shall read as follows:

mVdc Input to J2	**FTVA output voltage**
0.0mV input	FIN6 = -10Vdc
0.0mV input	FIN5 = -10Vdc
100mVdc	FIN6 = -2Vdc approx.
100mVdc	FIN5 = -6Vdc approx.

✍ **Note: With Step 6.2.6, you are entering a voltage to simulate what would be seen across a shunt resistor. The EXIB converts this to a frequency, between 0 and 2MHz. Since it is very difficult to observe and measure this frequency accurately with an o-scope or counter, we use the FTVA card to convert this frequency back to a readable voltage. This is the only step that uses the FTVA card.**

1.1.7 SCR Gating: This step uses the Fluke 5500A, an o-scope, and a Muffin cooling fan. The fan needs to be big enough to cool the big 5W resistors in the gating section. First, set the 5500A up to output 10Vp-p @ 14.5KHz. Notice on the J1 adapter board that even pins 20-30 have been tied together, just as odd pins 19-29 have been tied together. Connect the positive of the 5500A to the evens 20-30,

and the negative to the odds 19-29. Also notice the little brown 10K resistor on pin 41 of the J1 adapter. Connect this to the 5V output on your Tenma supply, while connecting pin 45 to COM of the same supply. DO NOT apply 5V power until AFTER the 5500A is engaged, or you will burn up the 5W resistors, regardless of whether or not you have the fan blowing across them. With your o-scope set for 5V/div and 50uSec/div, observe each of the gate outputs 1-6, pins 1 & 3 of each, for the signal seen in photo attachment 8.1 of this test. If the output matches the photo, then your board has passed.

1.2 Post Testing Burn-in Required ___ Yes _X_ No

✍ **Note: THIS UNIT HAS TWO OF THE NOW INFAMOUS THREE LEGGED 100uF CAPACITORS, IN ADDITION TO MANY OTHER ELECTROLYTIC CAPS. BE SURE TO CHANGE THESE OUT!**

1.3 ***TEST COMPLETE ***

7. NOTES

7.1

8. ATTACHMENTS

8.1