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V/F PreAmp Test Procedure

Primary Test Equipment needed:

(1) 30meg ohm resistor test clip

OR

(2) Clip leads with 30meg ohm resistors between the two (or three 10 Meg ohms soldered together between the clip leads)

(1) Phillips Screwdriver

(1) Test Computer with 137 Card, 64 PIN Ribbon Cable and AugerScan Installed

(1) Multiplier Supply

(1) Interface Unit with Freq. Out Cable Installed

(1) V/F Power Cable

Secondary Test Equipment Needed:

(1) Oscilloscope

(1) 4 foot Female BNC to Female BNC Cable

(1) Multiplier Supply

Overview:

This document explains the procedure for testing the following V/F PreAmps: PHI 96
PHI 96A
PHI 96B
RBD V/F-4

Caution! Refer servicing of electronic units to qualified personnel.

Note: All V/F PreAmps used on PHI systems convert the current through the electron multiplier into a frequency. The maximum current is –500nA. By using a 30 Meg ohm resistor, the –500 Na can be duplicated and the V/F PreAmp easily tested.

0.0 SET UP:

0.1 **IMPORTANT!** Remove the HV POS IN, HV POS OUT and COL cables from the V/F (or 96) PreAmp. This will prevent any high voltage from being applied to the PreAmp during testing.

0.2 Remove the top cover from the V/F (or 96) PreAmp.

0.3 Make sure the Computer is off.

0.4 Make sure the RBD 147 is off. Connect the available end of the 64 PIN Ribbon Cable to the RBD 147 Power Board. Connect the RBD 147 (P2) Freq. Out BNC Cable to the Freq. Out connection on the V/F PreAmp.

0.5 Make sure the power is off on the Multiplier Supply. Connect one end of the V/F Power Cable to the Multiplier Supply and the other end to the V/F PreAmp.

1.0 PRIMARY TEST PROCEDURE:

1.1 Locate the "COLLECTOR" (J4) connection on the V/F PreAmp.

1.2 Using the 30meg ohm resistor test clip (or clip leads with 30meg ohm resistors between the two (or three 10 Meg ohms soldered together between the clip leads), connect one end of the test clip to the L2 (floating – 15 volt supply) and the other end to the "COLLECTOR" (J4) lead

1.3 Turn on the Computer and open the AugerScan application.

1.4 Turn on the RBD 147.

1.5 Set up AugerScan to acquire a survey in the V/F mode. On the menu bar, choose System_Hardware Properties and click on the AES tab. Select the appropriate PreAmp for the test (96, 96A or 96B, or RBD V/F 4). Make sure that VF1 is selected in the "Input" area, press "OK". On the menu bar, choose System_Multiplier Properties and click on the AES tab. Make sure that the Auto EMS is not checked in the multiplier properties dialog box, press "OK". This will force the input into the V/F mode.

1.6 Start a "scan" pressing green triangle/arrow in the upper left of the AugerScan application screen

1.7 Turn on the Multiplier Supply.

1.8 Compare the counts with the following table:

You should have approximately the following counts displayed in AugerScan:

V/F PreAmp model number	Maximum V/F counts per second
PHI 96	100 kHz
PHI 96A	1 mHz
PHI 96B	1 mHz
RBD V/F-4	4 mHz

1.9 Turn off the 32-100 or MAC 200 and the counts should drop to zero.

The Primary PreAmp Test is complete:

If the PreAmp tests OK place a green dot with your initials on the green dot onto the PreAmp and turn off the electron multiplier supply and replace the cables that were removed during the test procedure.

If the PreAmp does not test OK then proceed to the Secondary Test Procedure (section 2.0).

2.0 SECONDARY TEST PROCEDURE:

2.1 **IMPORTANT!** Remove all cables from the PreAmp; this will prevent any high voltage from being applied to the PreAmp during testing.

2.2 Remove the top cover from the V/F (or 96) PreAmp.

2.3 Locate the "COLLECTOR" (J4) connection on the V/F PreAmp.

2.4 Using the 30meg ohm resistor test clip (or clip leads with 30meg ohm resistors between the two (or three 10 Meg ohms soldered together between the clip leads), connect one end of the test clip to the L2 (floating – 15 volt supply) and the other end to the "COLLECTOR" (J4) lead.

2.5 Make sure the power is off on the Multiplier Supply. Connect one end of the V/F Power Cable to the Multiplier Supply and the other end to the V/F PreAmp.

2.6 Insert the one end of the BNC Cable to the Freq. Out connection on the V/F PreAmp and the other end into the Oscilloscope Channel 1 connection.

2.7 Turn on the Multiplier Supply.

2.8 Turn on the Oscilloscope and measure the frequency. The frequency should be approximately 1 meg.

The Secondary PreAmp Test is complete:

If the PreAmp tests OK place a green dot with your initials on the green dot onto the PreAmp and turn off the electron multiplier supply and replace the cables that were removed during the test procedure.

If you receive different readings than stated above please contact RBD Instruments Technical Support for a loaner, repair of your unit, or further technical support.