SERIES 1-200 TEST SPECIFICATIONS

GENERAL TEST CONDITIONS:-

- Mains Input – as per country specification
- 8 Ohm resistive load connected to Speaker Output
- Impedance Switch set to 8 Ohms
- All DC measurements taken with a True RMS meter – input resistance 1MΩ or greater
- All AC measurements taken with a Neutrik A1 Audio Test Set – Kimasnsonel with no filters, or BS tracking filter
- All AC kimasnsonels and measurements are specified and recorded in dBV where 0dBV = 1.0 volt RMS

INITIAL SETTINGS:-

- Input shorted to Ground
- POWER Switch to 'ON'
- STANDBY Switch to 'ON'
- All front panel controls to Minimum (fully CCW) except DPR which is set to Maximum (fully CW)
- Power PCB PR1 set to CCW
- Mid PCB PR1 set to midway
- Back panel FX Loop switch in 'OUT' position
- Front panel WARM/BRIGHT switch in 'OUT' position
- Front panel SUPERCRUNCH switch in 'OUT' position
- CLEAN Channel Selected (LED1 Lit, LED 2-4 Off)

BIAS AND BIAS BALANCE SET-UP:-

1. Using a DC Millivolt Meter, with a full scale range of 200mV, connected across D22 (Power PCB) adjust PR1 on the Power PCB for a reading of **100mV**
2. Connect the Hum Balance Test Jig to the Speaker Output (do not disconnect the resistive load)
3. Connect a DC Millivolt Meter, with a full scale range of 200mV, across SP1 and SP2 of the Hum Balance Test Jig
4. Adjust PR1 (Mid PCB) for a minimum reading
5. Repeat steps 1 through 4

BIAS CONTROL TESTS:-

With the DC Millivolt meter still connected to CON1 on the output Power Valve PCB:-

1. Change the STANDBY switch to 'STANDBY' and check reading drops to **0mV**
2. Change STANDBY switch back to 'ON'.
3. Remove the Input Shorting Jack and check reading drops to **0mV**
4. Replace the Input Shorting Jack
5. Remove the Speaker Jack and check reading drops to **0mV**
6. Replace the Speaker Jack
7. Change POWER switch to 'OFF'
8. Remove the OUTPUT VALVE FUSE
9. Change to POWER switch to 'ON', and check reading is **0mV**
10. Confirm that LED1-4 are NOT lit.
11. Change POWER switch to OFF and re-insert the OUTPUT VALVE FUSE
12. Change POWER switch to ON
13. Confirm that LED 1 is lit and LED2-4 are off.
14. Check Millivolt meter reading is **100mV**

QUIESCENT D.C. VOLTAGE TESTS:-

	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9
V1	195	DNM	6.0	DNM	12.6	190	DNM	6.0	DNM
V2	246	DNM	2.0	DNM	12.6	253	DNM	2.0	DNM
V3	172	DNM	1.3	12.6	DNM	171	DNM	1.3	DNM
V4	121	DNM	1.0	DNM	12.6	156	DNM	1.0	DNM
V5	124	DNM	0.96	12.6	DNM	DNM	DNM	1.0	DNM
V6	DNM	DNM	690	338	-42	DNM	DNM	DNM	DNM
V7	DNM	DNM	690	338	-42	DNM	DNM	DNM	DNM
V8	DNM	DNM	690	338	-42	DNM	DNM	DNM	DNM
V9	DNM	DNM	690	338	-42	DNM	DNM	DNM	DNM

NOTE: - All voltages measures with respect to Chassis Ground
- All Voltages are DC
- 'DNM' = Do not measure

A.C. SIGNAL TESTS

CLEAN CHANNEL

CONDITIONS:-

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- Sine wave signal amplitude set to **-45dBV**
- CLEAN BRIGHT channel selected (LED1 Lit, LED2-4 Off)
- All voltages measured at the Effects Loop Send Jack
- Front panel Warm/Bright switch in 'OUT' position

FREQ-UENCY	ALL TONE CONTROLS FULLY CW (master Min)	BASS FULLY CCW	MIDDLE FULLY CCW	TREBLE FULLY CCW	ISF & MID FULLY CCW	RESONANCE FULLY CCW	PRESENCE FULLY CCW
500Hz	−10.08	−18.63	−12.43	−9.27	−22.14	−11.15	−9.82
1kHz	−7.98	−13.97	−19.53	−8.47	−10.43	−8.53	−9.81
5kHz	3.60	2.95	2.39	−0.93	5.20	3.83	−6.59
10kHz	7.09	6.85	6.75	1.49	7.72	7.27	−6.94
20kHz	4.35	4.28	4.34	−1.61	4.62	4.51	−11.35

- Sine wave signal amplitude set to **-20dBV(except BASS and RESONANCE at -10dbV)**

FREQ-UENCY	ALL TONE CONTROLS FULLY CW (master Min)	BASS FULLY CCW(-10dbV)	RESONANCE FULLY CCW (-10dbV)
50Hz	−7.39	−18.95	−12.79
100Hz	4.04	−2.99	3.36

WARM CHANNEL

CONDITIONS

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- Sine wave signal amplitude set to **-45dBV**
- CLEAN BRIGHT channel selected (LED1 Lit, LED2-4 Off)
- All voltages measured at the Effects Loop Send Jack
- Front panel Warm/Bright switch in 'IN' position

FREQUENCY	WARM BRIGHT Switch 'IN' CONTROLS FULLY CW
50Hz	−15.95
100Hz	−13.89
500Hz	−12.82
1KHz	−9.61
5KHz	5.60
10KHz	6.33
20KHz	1.56

CRUNCH CHANNEL

CONDITIONS:-

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- Sine wave signal amplitude set to **-45dBV**
- CLEAN BRIGHT channel selected (LED2 Lit, LED1,3 & 4 Off)
- All voltages measured at the Effects Loop Send Jack
- Front panel SUPERCRUNCH switch in 'OUT' position

FREQUENCY	CRUNCH CONTROLS FULLY CW
50Hz	−25.45
100Hz	−12.67
500Hz	−5.72
1KHz	−3.73
5KHz	5.50
10KHz	4.35
20KHz	−9.76

SUPER CRUNCH CHANNEL

CONDITIONS:-

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- Sine wave signal amplitude set to **-45dBV**
- SUPER CRUNCH channel selected (LED2 Lit, LED1, 3 & 4 Off)
- All voltages measured at the Effects Loop Send Jack
- Front panel SUPERCRUNCH switch in 'IN' position

FREQUENCY	SUPER CRUNCH Switch 'IN' CONTROLS FULLY CW
50Hz	−18.93
100Hz	−5.54
500Hz	−2.82
1KHz	−0.73
5KHz	6.86
10KHz	6.98
20KHz	0.06

OD1 CHANNEL

CONDITIONS:-

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- OD1 channel selected (LED3 Lit, LED1, 2 & 4 Off)
- All voltages measured at the Effects Loop Send Jack
- Sine wave signal set to **-45 dBV @1kHz**

FREQ-UENCY	ALL TONE CONTROLS FULLY CW (master Min)	BASS FULLY CCW	MIDDLE FULLY CCW	TREBLE FULLY CCW	ISF & MID FULLY CCW
500Hz	1.89	−1.02	−0.93	1.11	0.05
1kHz	3.71	2.58	0.48	0.95	4.54
5kHz	9.63	9.48	9.12	4.07	10.02
10kHz	7.20	7.17	7.07	1.29	7.34
15kHz	−1.67	−1.69	−1.74	−7.67	−1.59

- Sine wave signal set to **-20 dBV @1kHz(except BASS at -10dbV)**

FREQ-UENCY	ALL TONE CONTROLS FULLY CW (master Min)	BASS FULLY CCW (-10dbV)
50Hz	0.32	−15.23
100Hz	3.92	−12.59

Notes on above tests. *ISF Tests done with MID at min. 50Hz and 100Hz tests invalid with KIMASNSONEL measurement due to masking of signal by noise. BS gives more accurate figure. Alternatively set GEN to -40dBV for the 50Hz and 100Hz tests.*

OD2 CHANNEL

CONDITIONS:-

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- Sine wave signal set to **-50dBV @1kHz**
- OD2 channel selected (LED4 Lit, LED1, 2 & 3 Off)
- All voltages measured at the Effects Loop Send Jack

FREQUENCY	O.D2 CONTROLS FULLY CW
50Hz	−2.08
100Hz	3.02
500Hz	2.83
1KHz	3.83
5KHz	9.82
10KHz	6.42
15KHz	−2.32

EFFECTS LOOP SEND TEST

CONDITIONS:-

- **All front panel controls to maximum – fully CW(master control Min)**
- Sine wave signal source applied to Input Jack
- Sine wave signal amplitude set to **-30dBV**
- CLEAN BRIGHT channel selected (LED1 Lit, LED2-4 Off)
- All voltages measured at the Effects Loop Send Jack
- Effects Loop Switch in 'IN' position
- Front panel Warm/Bright switch in 'OUT' position

FREQ	SWITCH 'IN'
100Hz	**-18.64**
1kHz	**-6.44**
10kHz	3.91

EFFECTS LOOP RETURN TEST

CONDITIONS:-

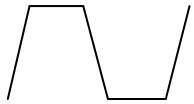
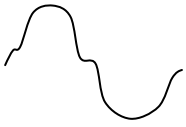
- **All front panel controls to maximum – fully CW**
- Sine wave signal source applied to Effects Return Jack
- Sine wave signal amplitude set to **-36dBV**
- OD1 channel selected (LED3 Lit, LED1,2 & 4 Off)
- All voltages measured at the Speaker Output Jack
- Shorting Input Jack plugged into front panel Input Jack Socket

FREQ	CLEAN Channel(LED 1)		OD1 Channel(LED 3)
	SWITCH 'OUT'	SWITCH 'IN'	SWITCH 'OUT'
100Hz	6.92	20.00	9.26
1kHz	7.30	20.32	7.91
10kHz	9.82	23.28	10.13

DPR VOLUME TEST

CONDITIONS:-

- All front panel controls to maximum – fully CW
- Sine wave signal source applied to Effects Return Jack
- Sine wave signal set to **-13dBV @1kHz**
- Effect Loop Switch in 'OUT' position
- All voltages measured at the Speaker Output Jack
- Bias Current measured at CON1 on OPV Board.
- Shorting Input Jack plugged into front panel Input Jack Socket

	Output	Bias	Waveform
DPR Full – CW	32.31dBV	580mV	
DPR Min – CCW	21.29dBV	169mV	

EMULATED OUTPUT TEST

CONDITIONS:-

- **All front panel controls to maximum – fully CW(MASTER control Min)**
- Sine wave signal source applied to Effects Return Jack
- Effect Loop Switch in 'OUT' position
- Sine wave signal amplitude set to **-0dBV**
- CLEAN channel selected (LED1 Lit, LED2-4 Off)
- Front panel Warm/Bright switch in 'OUT' position
- Shorting Input Jack plugged into front panel Input Jack Socket
- All voltages measured at the XLR, MONO Jack

FREQUENCY	XLR JACK	MONO JACK
50Hz	−6.51	DNM
100Hz	9.04	8.82
500Hz	2.89	DNM
1KHz	4.71	4.80
5KHz	−1.77	DNM
10KHz	−24.52	−24.49
20KHz	−36.45	DNM

4 Ω-16 Ω SPEAKER OUTPUT TEST

CONDITIONS:-

- All front panel controls to maximum – fully CW
- Shorting Input Jack plugged into front panel Input Jack Socket
- Effects Loop Switch in 'OUT' position
- 1kHz Sine wave signal applied to Effects Return Jack
- Sine wave signal amplitude -20dBV
- CLEAN channel selected (LED1 Lit, LED2-4 Off)
- All voltages measured at the Speaker Output Jack
- Adjust the Impedance setting and measure the amplitude

Impedance Switch Setting	Amplitude
8 Ohm	24.44
16 Ohm	**22.05**
4 Ohm	26.91

NOISE TEST

CONDITIONS:-

- All front panel controls to maximum – fully CW
- Shorting Input Jack plugged into front panel Input Jack Socket
- Effects Loop Switch in 'OUT' position
- All voltages measured at the Speaker Output Jack
- Measure the noise for each channel

Channel	Noise dBV
Clean (Warm Bright switch 'OUT')	-14.47
Clean (Warm Bright Switch 'IN')	-14.28
Crunch(Super Crunch Switch 'OUT')	-3.55
Super Crunch (Super Crunch Switch 'IN')	0.71