PERFORMANCE EVALUATION FOR dbx 266 DUAL COMPRESSOR/GATE[1]

EQUIPMENT NEEDED:

1) Digital voltmeter, accurate to 0.1%
2) Dual trace, DC coupled oscilloscope.
3) Low distortion oscillator with a residual distortion below 0.002%
4) Audio voltmeter with an accuracy of 2%

PROCEDURE[2]:

1. POWER SUPPLY TEST

- Verify +l5vdc at TP3 and -l5vdc at TP5, ±750mv.
- Verify less than lOmv p-p ripple on both supply voltages.

2. FRONT PANEL, SETUP

- Compressor THRESHOLD CWW (+2OdB)
- Compressor RATIO CWW (1:1)
- ATTACK CCW (fast)
- RELEASE CCW (fast)
- OUTPUT GAIN at 12 o'clock (OdB)
- BYPASS switch OUT
- Expander THRESHOLD CCW (off)
- Expander RATIO CCW (min)
- STEREO COUPLE switch OUT

3. SIGNAL OUTPUT TEST[3]

- Center all trim pots.
- Feed INPUT with a lkHz sine wave, at OdBu.
- Verify an OUTPUT level of OdBu, ±ldB, with the OUTPUT GAIN pot at I2 0'ciock.
- Exercise the OUTPUT GAIN pot, and verify that the output matches the front panel markings, ±ldB. Return pot to 12 o'clock.
- Exercise the BYPASS switch. Verify that the LED lights, and there is no change in the output level, ±1dB.
- Load the OUTPUT with a 600 Ω resistor. Feed the INPUT with a lkHz sine wave, at +2ldBu.
- Verify the OUTPUT level is > +20dBu and is not clipped.

[1] Markup A, 9/25/97.
[2] Unless otherwise specified, use a balanced, low impedance signal source, load the 266 outputs with an unbalanced high impedance load, and set controls and switches as per step 2.
[3] Unless specified, all of the following tests are for one channel, but should also be performed on both..

4. RMS TRIM

- Feed the INPUT with a 1OOHz sine wave, at OdBu.
- Monitor TP1O1 (TP2O1), with an AC coupled scope, set to the smallest volts/div.
- Adjust VRl0l (VR2O1) for the most symmetrical SINE WAVE. (Verify that the signal is not a RECTIFIED sine wave)

5. VCA SYMMETRY TRIM / DISTORTION TEST

- Feed the INPUT with a 1kHz sine wave, at OdBu.
- Monitor the OUTPUT of unit with distortion analyzer.
- Adjust VR100 (VR200) for minimum distortion. This should be less than O.02%
- Reduce the INPUT signal frequency to l00Hz. Verify the distortion is less than 0.02%.

6. FREQUENCY RESPONSE TEST

- With all controls set as per step 2 and with OdBu applied to the INPUT, monitor the OUTPUT and verify a deviation of no more than +0, -O.1dB at any frequency between 20-2OkHz.

7. NOISE TEST

- With all controls set as per step ?, remove the signal from INPUT of unit and verify a residual noise level <= -93dB in a 20-20kHz bandwidth.

8. CMMRR TEST

- Feed both + (tip) and - (ring) of the INPUT jack with a l00Hz, OdBu sine wave.
- At pin 1 of IC100-A (IC200-A), verify a common-mode signal <= -45dBu.
- Verify the same reading at lkHz & lOkHz.

9. SIDECHAIN SHELF TEST

- Feed the SIDECHAIN INSERT with an unbalanced, lkHz, OdBu sine wave.
- Monitor TP1O1 (TP201) with dc coupled scope and note the dc level.
- Reduce the frequency to 4OHz and verify that TP101 (TP201) drops by 60mv, ±lOmv.

10. COMPRESSOR OPERATION TEST

- Set the compressor RATIO fully CW and all other controls as in step 2.
- Feed the INPUT with a 1kHz, OdBu sine wave. Verify the OUTPUT level is OdBu, ±ldBu.
- Rotate the compressor THRESHOLD fully CCW and verify at reading of -40dBu, ±5dbu at the OUTPUT.
- Rotate the compressor RATIO to 12 o'clock (2:1) position and verify -2OdBu, ±5dBu at the OUTPUT.
- Verify that GAIN REDUCTION LEDs reflect the amount of gain reduction measured above.
- Rotate the compressor RATIO fully CCW and verify an OUTPUT level of OdBu, ±ldBu.
- Rotate the compressor THRESH0LD to OdB and decrease the input level to -25dBu. Verify that the BELOW LED is ON and the OVEREASY & ABOVE LEDs are OFF.
- Increase the INPUT level to - lOdBu and verify that the OVEREASY LED is ON and the ABOVE & BELOW are OFF.
- Increase the INPUT level to +5dBu and verify that the ABOVE LED is ON and the BELOW & OVEREASY are OFF.

11. EXPAANDER/GATE OPERATION TEST

- Set expander RATIO full CW and all other controls as in step 2.
- Remove the signal from INPUT and verify that the ABOVE LED is ON, BELOW LED & GAIN REDUCTION LEDs are all OFF.
- Rotate the expander THRESHOLD to 12 o'clock (-35dBu).
- Feed the INPUT with lkHz, -5OdBu sine wave and verify an OUTPUT < -80dBu with GAIN REDUTCTION display fully lit.
- Increase the INPUT to -4OdBu and rotate the expander RATIO fully CWW.
- Verify that BELOW LED is ON, ABOVE & GAIN REDUCTION LEDs are all OFF , and OUTPUT level is -4OdBu, +1ldBu.
- Increase INPUT to -30dBu and verify that ABOVE LED is ON, BELOW & GAIN REDUCTION LEDs are all OFF.
- Increase INPUT to OdBu, rotate expand RATIO & THRESHOLD fully CW. Verify that OUTPUT is < -2OdBu.
- Increase INPUT to +12dBu and verify that OUTTPUT is +l2dBu, ±ldBu.

12. SIDECHAIN INSERT TEST

- Feed INPUT with lkHz, OdBu sine wave.
- Insert a balanced, l/4" phone plug in the SIDECHAIN INSERT jack.
- Short the tip and ring of the plug and verify that all the functions operate as above.
- Remove the short from the plug while sti11 inserted and verify that all functions no longer operate as above.

13. STEREO COUPLE TEST

- Feed INPUT of both channels with lkHz, OdBu sine wave.
- Depress STEREO COUTPLE switch, verify that STEREO COUPLE LED is ON and verify that all of channel's pots, switches and LED's become deactivated, except the GAIN REDUCTION bar graphs, which should follow channel 1's.
- Insert a dummy plug (as in step 1, but with tip, ring and sleeve disconnected) into channel 1's SIDECHAIN INSERT.
- Exercise channel 1's controls, and verify that both channel 1 & 2 OUTPUTS are affected identically.
- Move the dummy plug to channel 1's SIDE CHAIN INSERT, and verify that both OUTPUTS are still affected only by channel 1's controls.

14. GAIN REDUCTION DISTORTION TEST

- Feed INPUT with 1kHz, OdBu sine wave, and verify < 0.2% THD at any amount of COMPRESSOR gain reduction.
- Disable COMPRESSOR and verify < 1.0% THD at any amount of EXPANDER gain reduction.