

**Involve audio DSP implementation test results.**  
**Tested May 2009**

## **Setup**

**DSP:** Texas Instruments TAS3108 on EVM2 platform.

**PC:** Athlon64 running Windows XP SP3 with  
ESI Juli@ pro audio card at 192khz / 24 bit

### **Test conditions:**

- Straight path in / out testing with Liberty Instruments Praxis.
- Linearity testing using CRO and Multimeter.

### **Sine wave separation test matrix:**

- Low band to mid band
- Mid band to high band
- Low band to high band

$V_s$

- Front left to front right
- Front left to rear left
- Front left to rear right.

### **Linearity test matrix:**

- Input signal balance sweep from 0.1 to 0.9 output levels, with total stereo output totalling 1.0, in 0.1 steps (9 tests per pair)

$V_s$

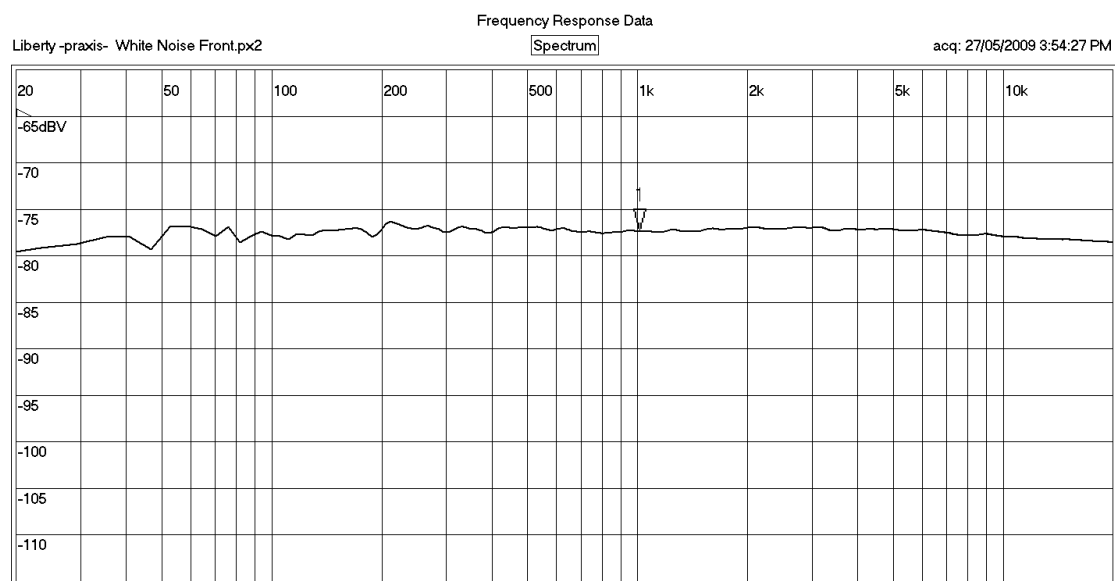
- Front left to front right
- Front left to rear left
- Front left to rear right.

**Frequency response front stereo pair and rear stereo pair.**

**THD front and rear.**

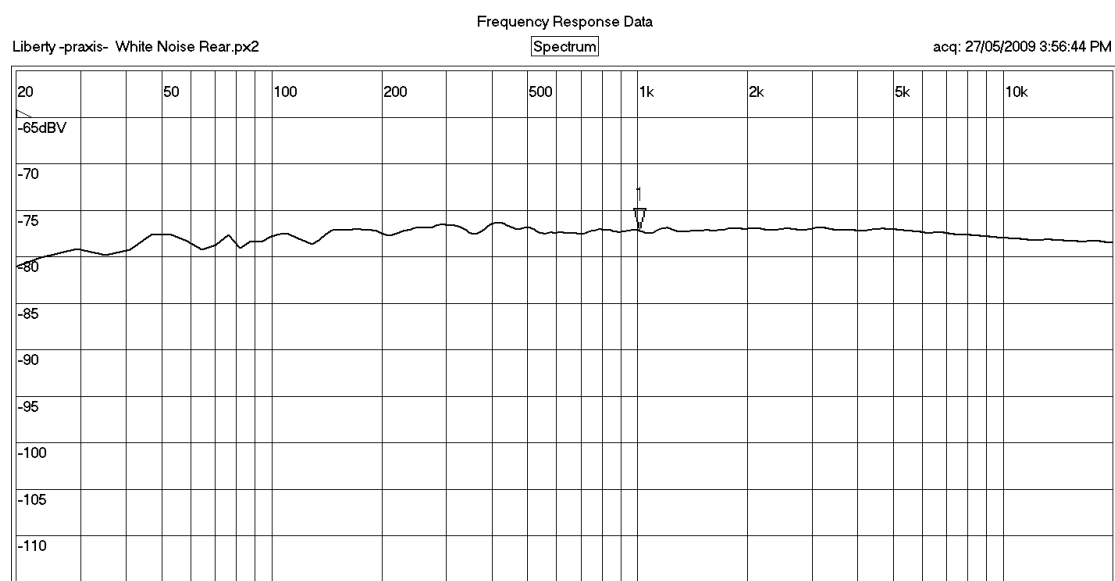
**Channel separation cross-talk tests.**

# Frequency Response



Mkr 1  
1.014kHz  
-77.34038dBV

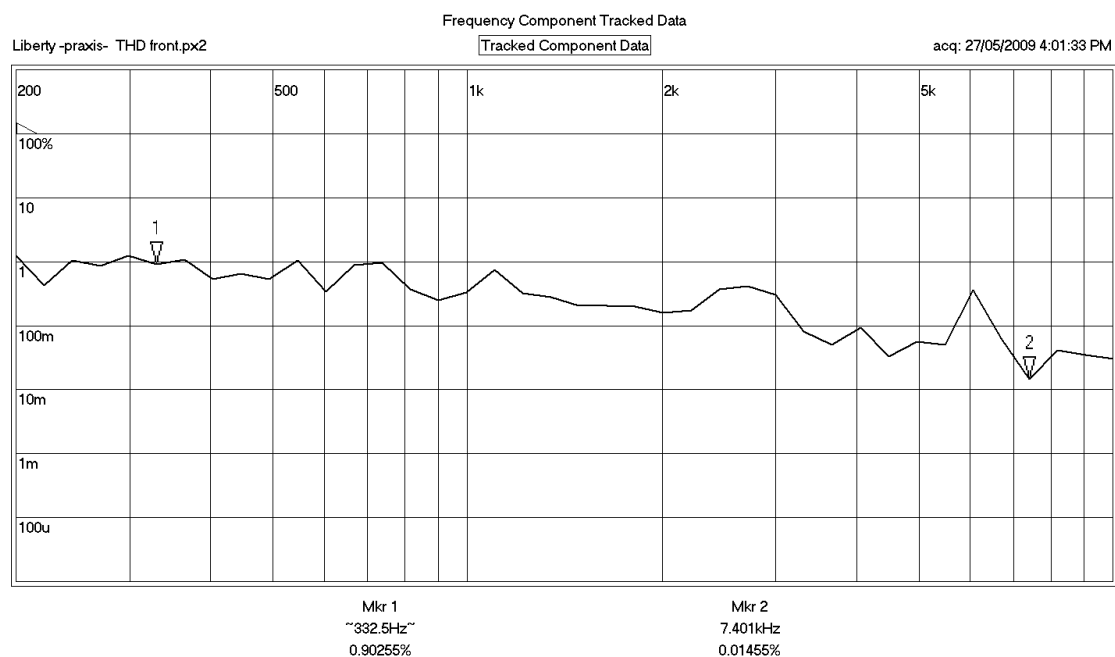
## Front Stereo pair



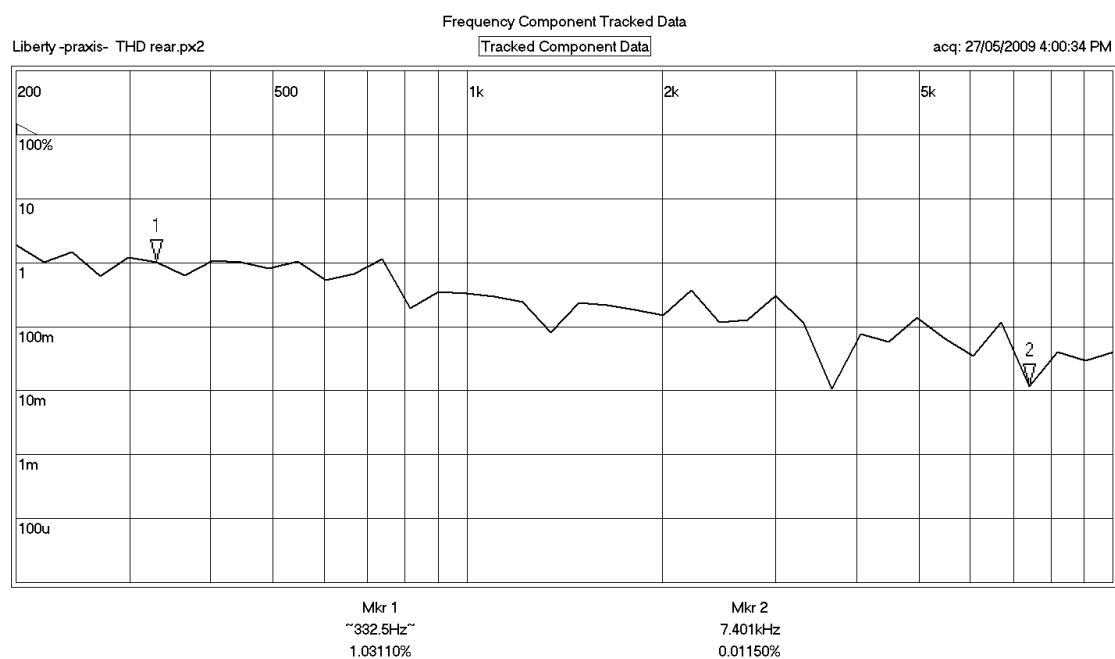
Mkr 1  
1.014kHz  
-77.22699dBV

## Rear Stereo pair

# T.H.D



## Front THD

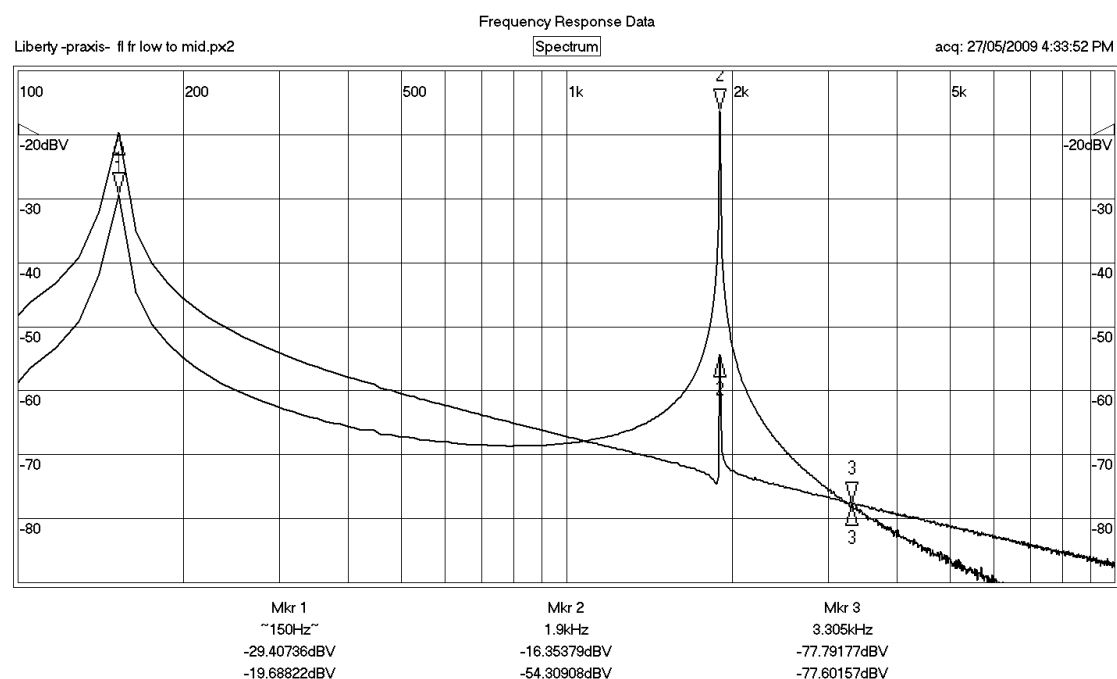


## Rear THD

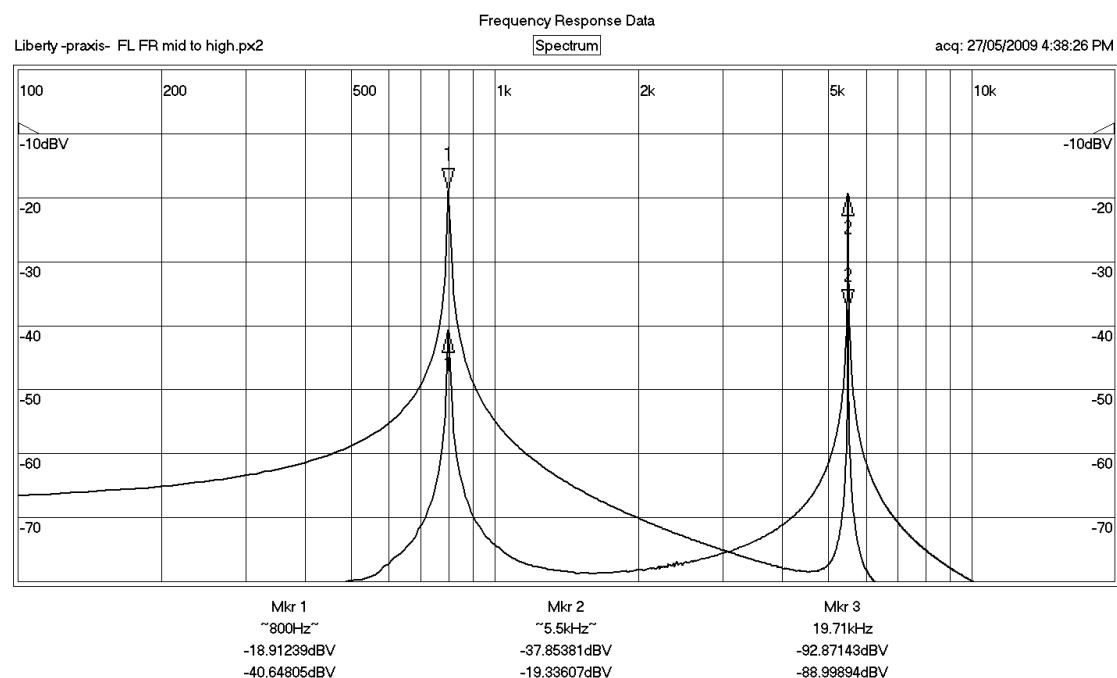
## Separation Results

**N.B:** The third marker in each graph is not used.

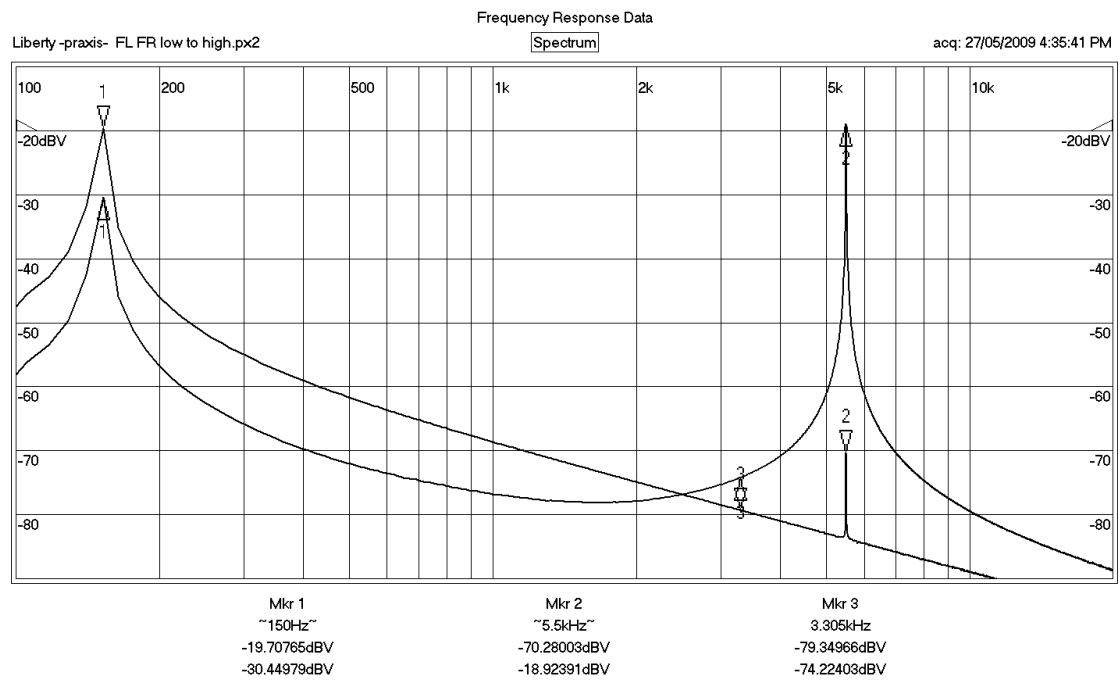
### Front left to Front right separation



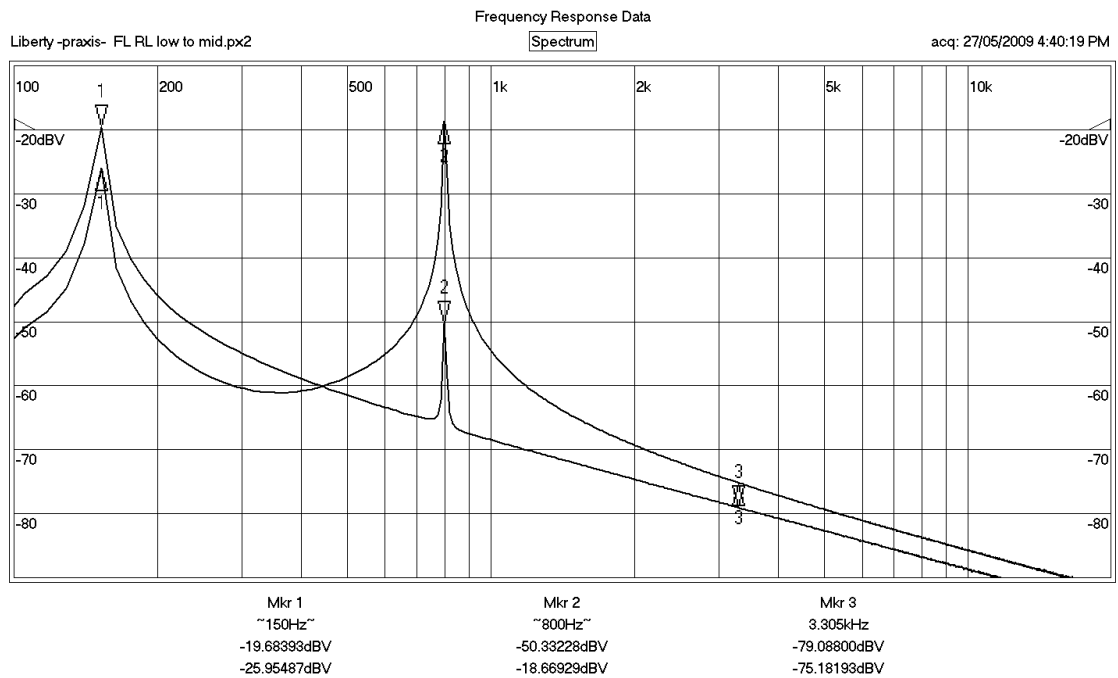
### *Low to Mid band*



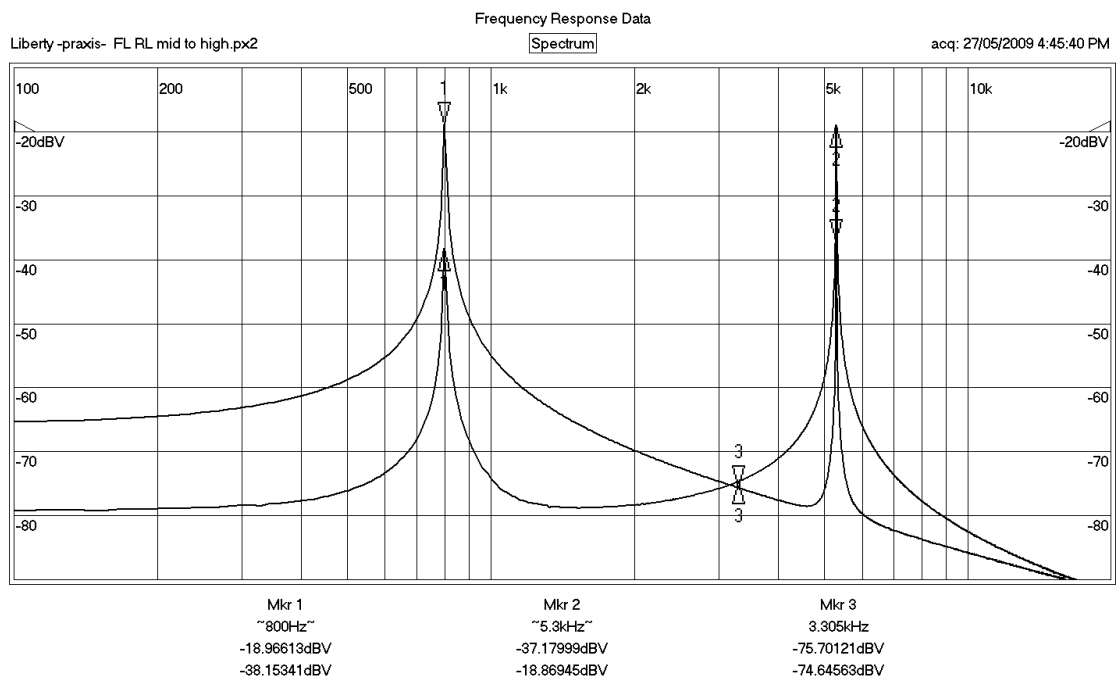
### *Mid to High band*



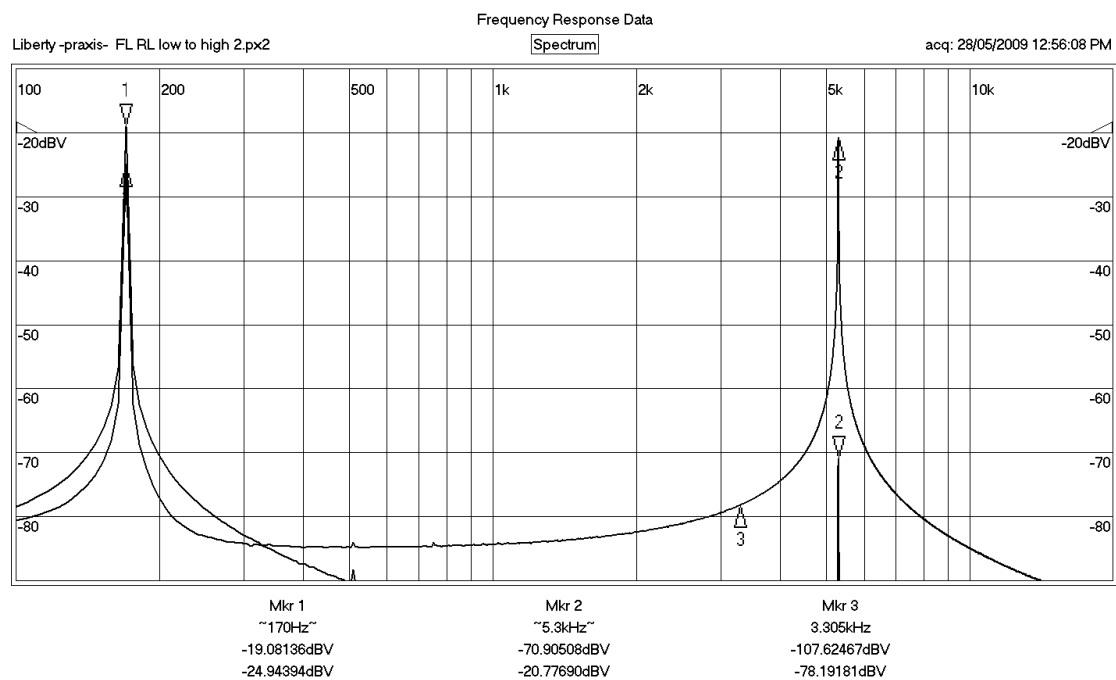
## Front left to Rear Left separation.



*Low to Mid band*



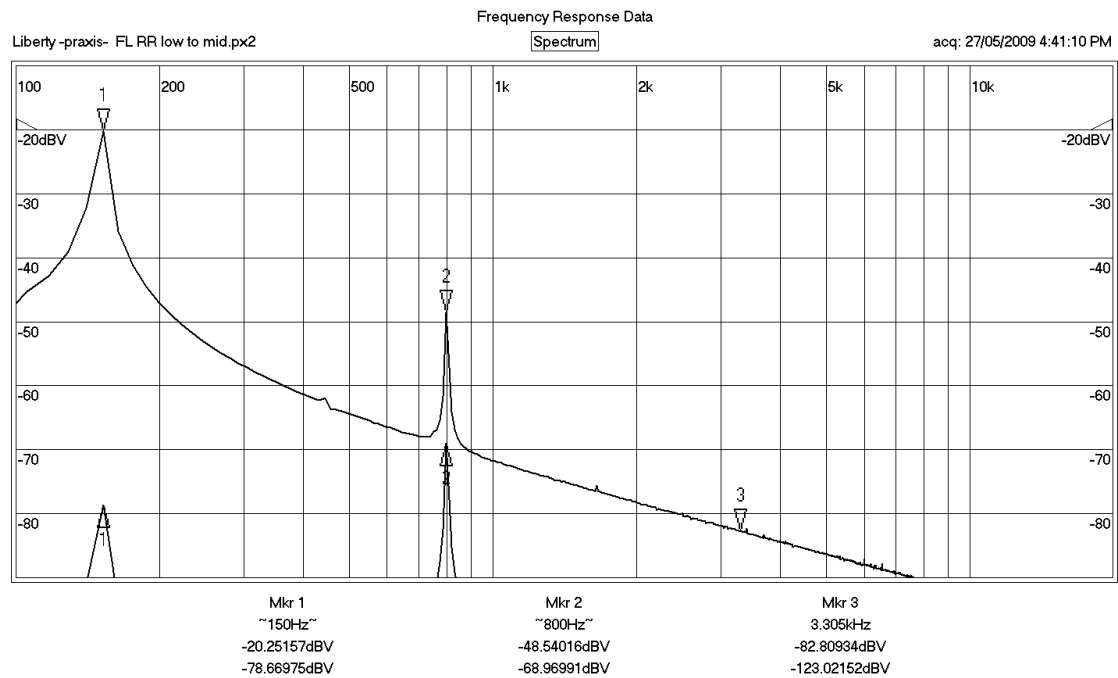
*Mid to High band*



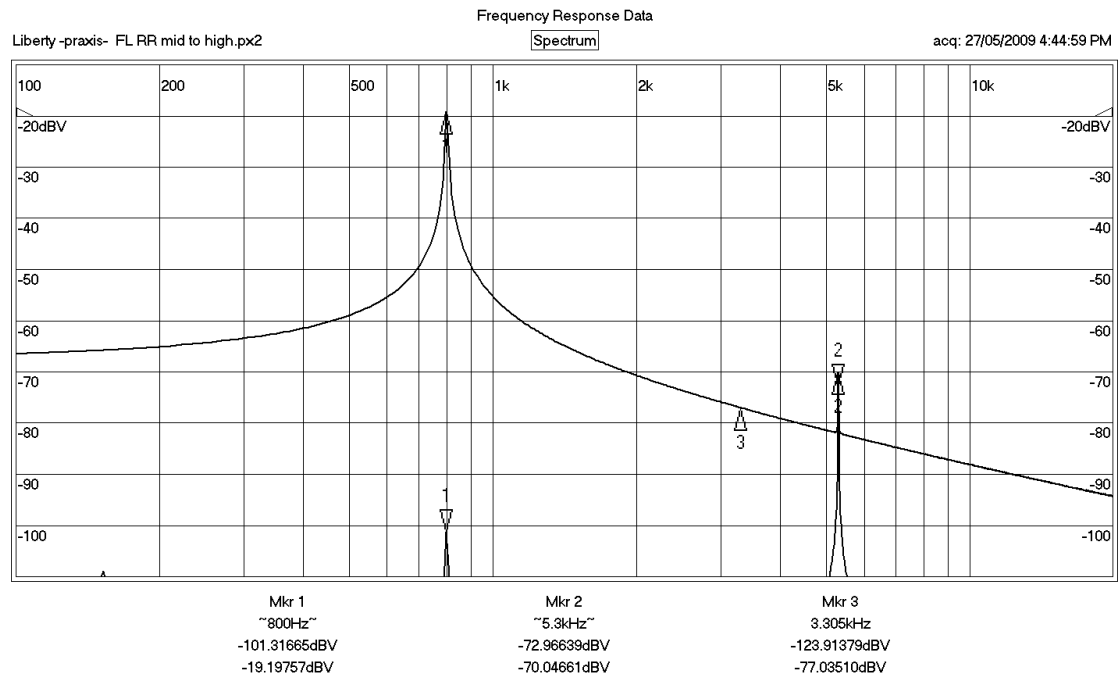
*Low to High band*



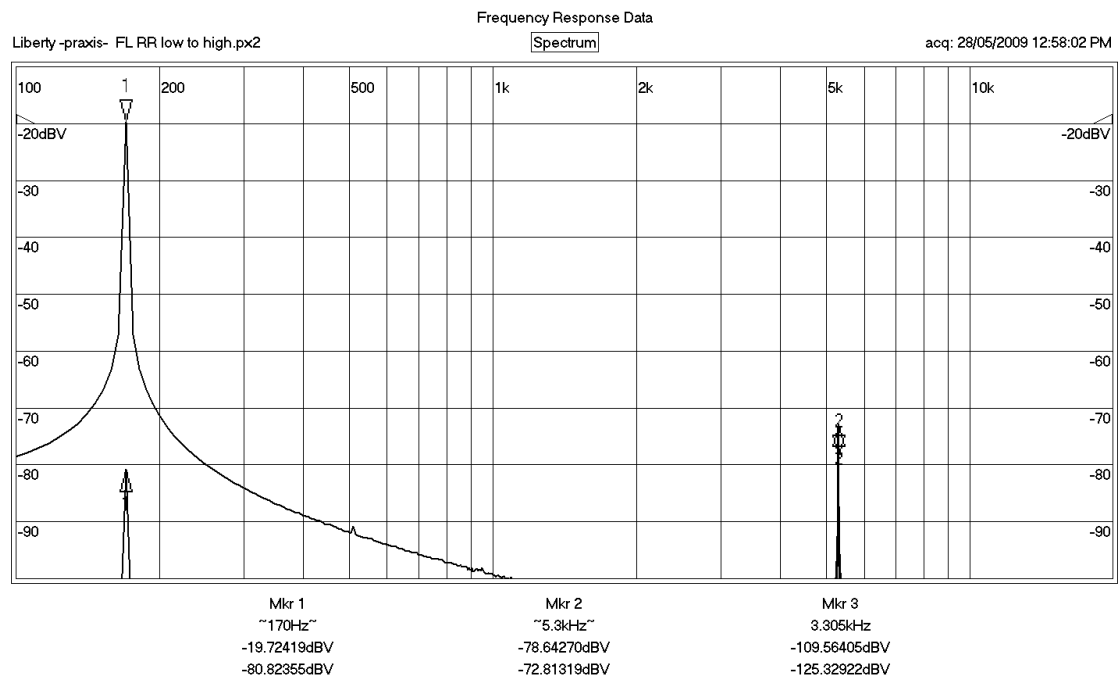
## Front left to Rear Right Separation



### *Low to Mid Band*



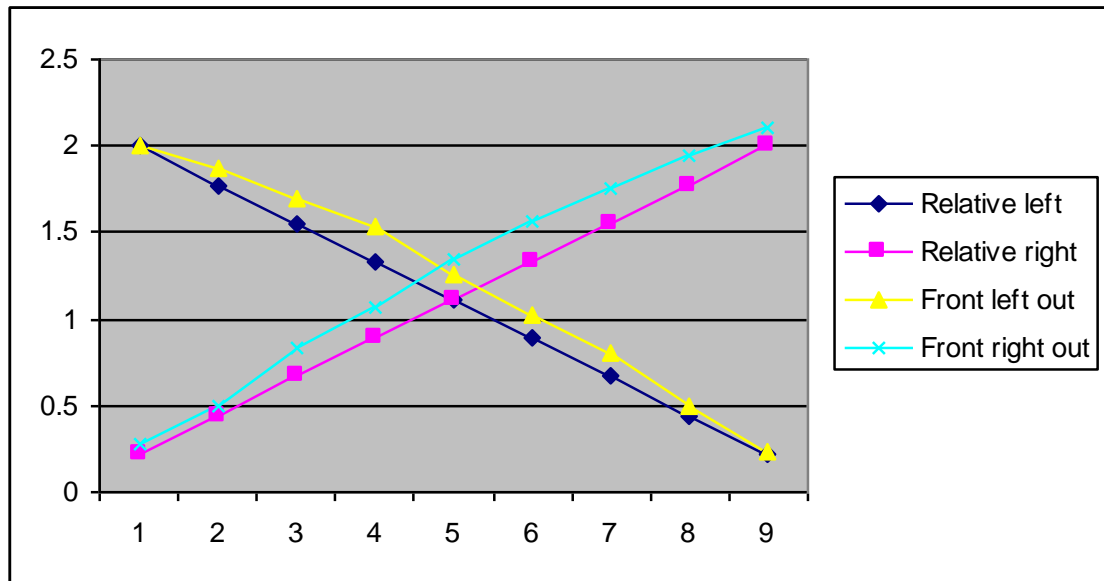
### *Mid to High Band*



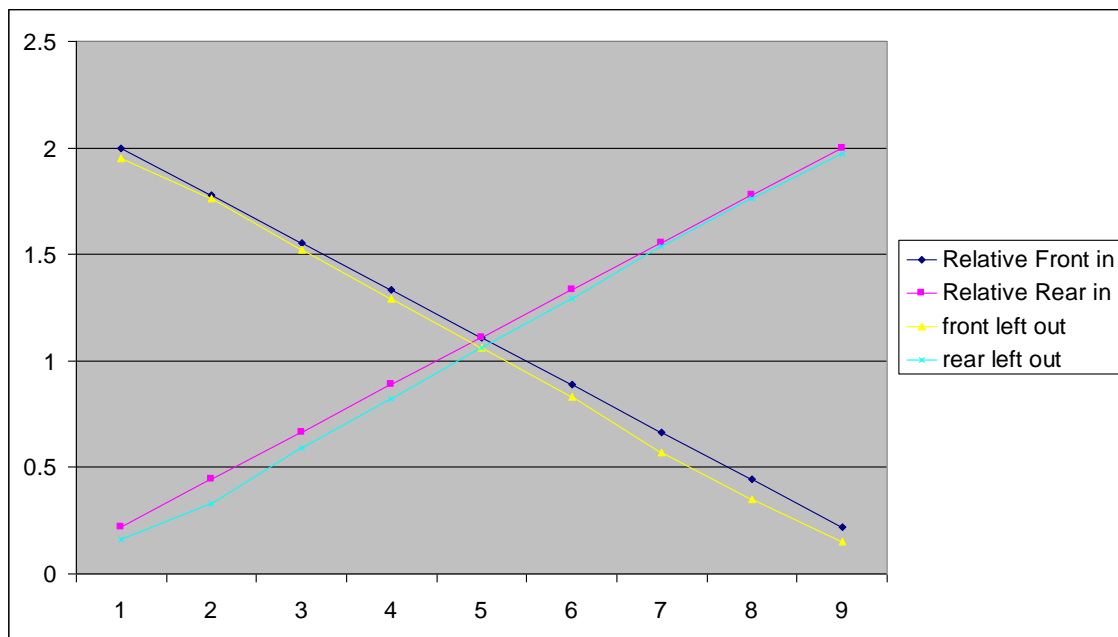
*Low to High Band*

### Linearity Results

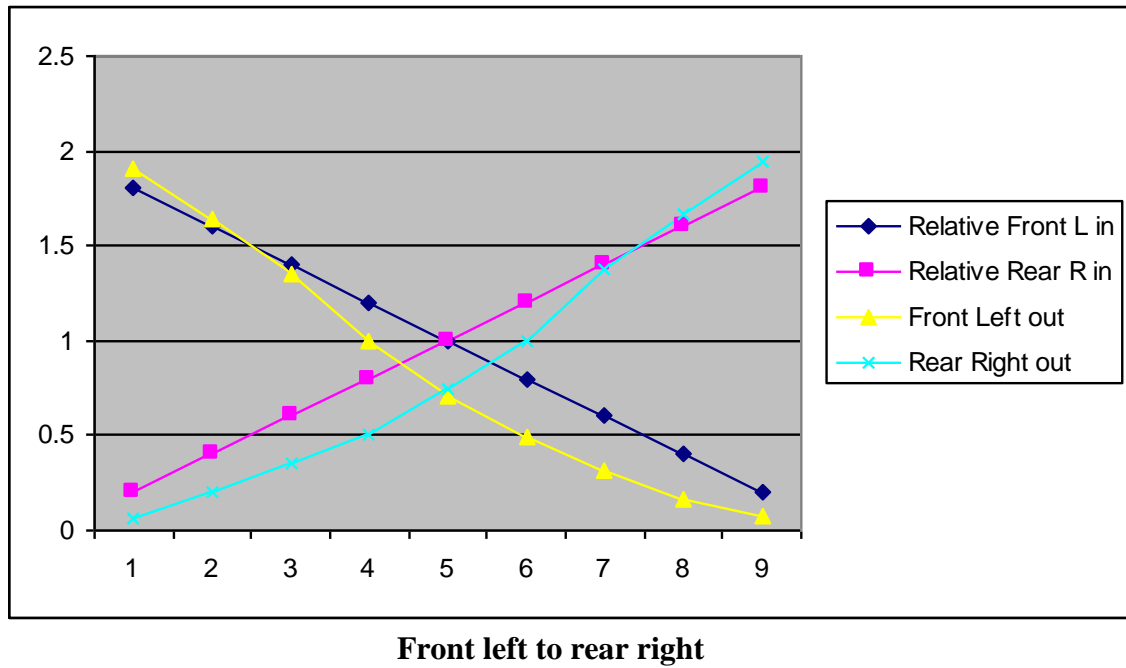
**NB: Input levels are uniformly scaled to be relative to output. Slight experimental error is assumed in measurement.**



**Front left to Front Right**



**Front left to Rear Left**



### **Channel separation cross-talk tests.**

**(Input to Involve Encoder (4 / 5 to 2 channel) and out through Involve decoder to 4 channel)**

	<b>Output</b>	Front Left	Front Right	Rear Left	Rear Right
<b>Input</b>					
Front left		0	-37.832607	-34.0728	-38.202275
Front Right		-43.5663	0	-35.21554	-36.302696
Rear left		-36.4471	-33.568967	0	-41.868434
Rear Right		-34.9732	-33.302235	-39.32283	0

*All results are in dB and referenced to zero on relevant channel.*