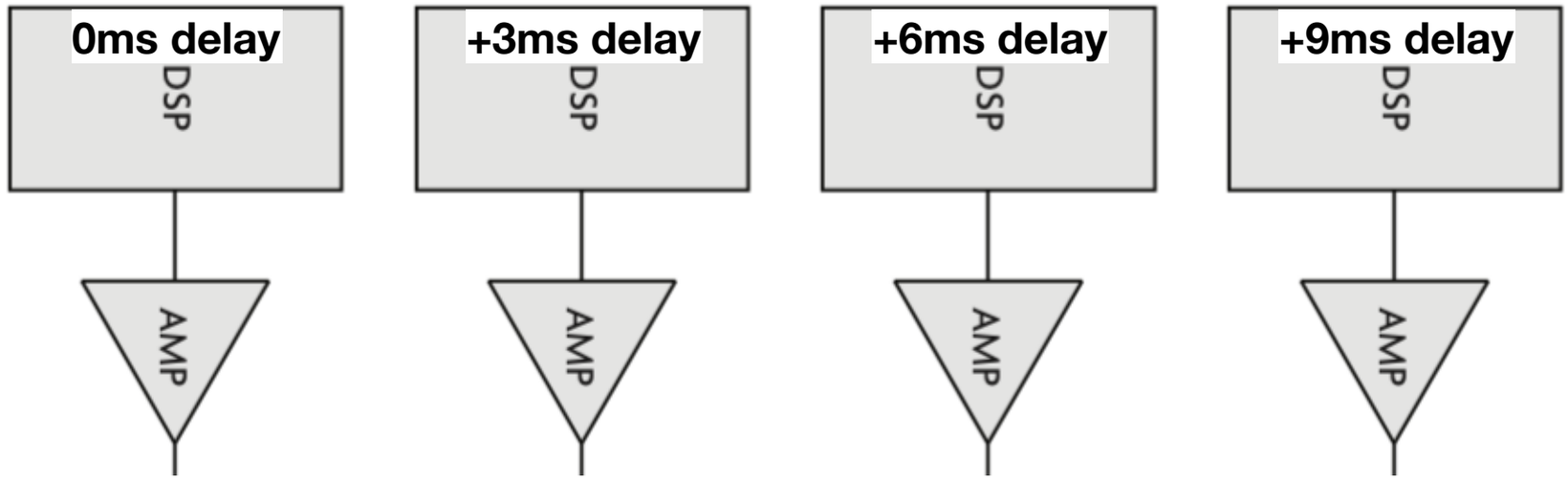
End Fired Sub Array

End Fired Sub Array



Sub 1
Time: 0ms

Sub 2
Time: 0ms

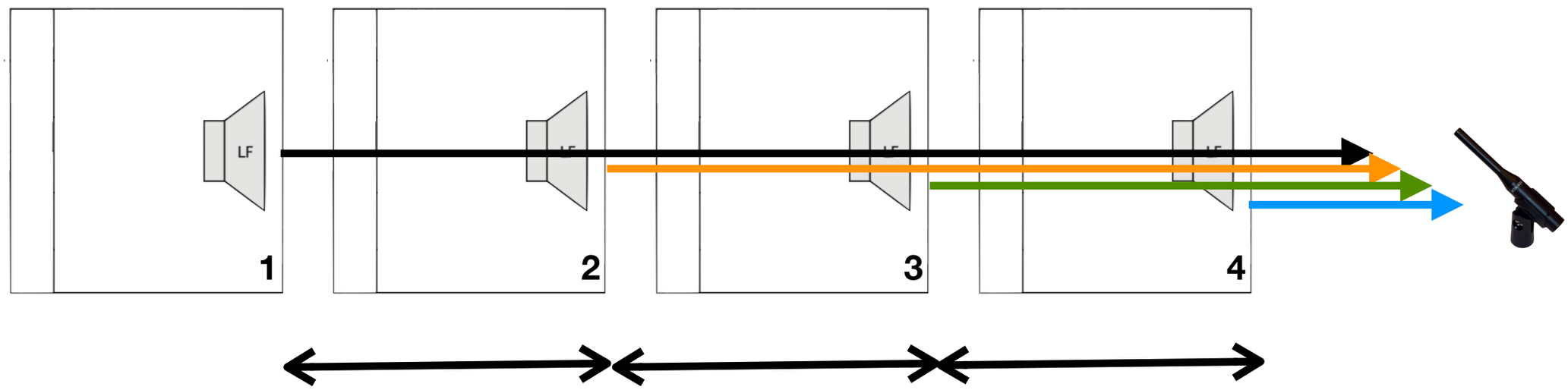
Sub 3
Time: 0ms

Sub 4
Time: 0ms

Ahead of sub1
measured at the front

Ahead of sub1
measured at the front

Ahead of sub1
measured at the front

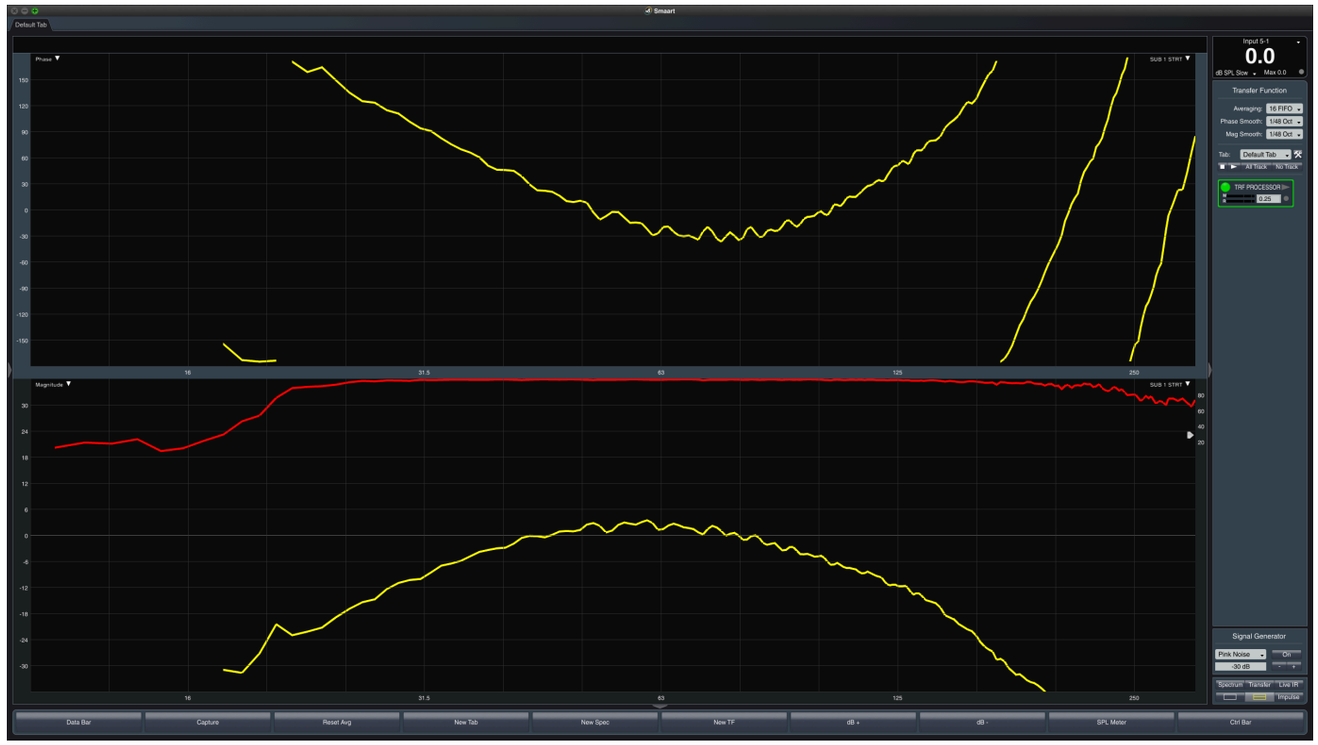


1mt

1mt

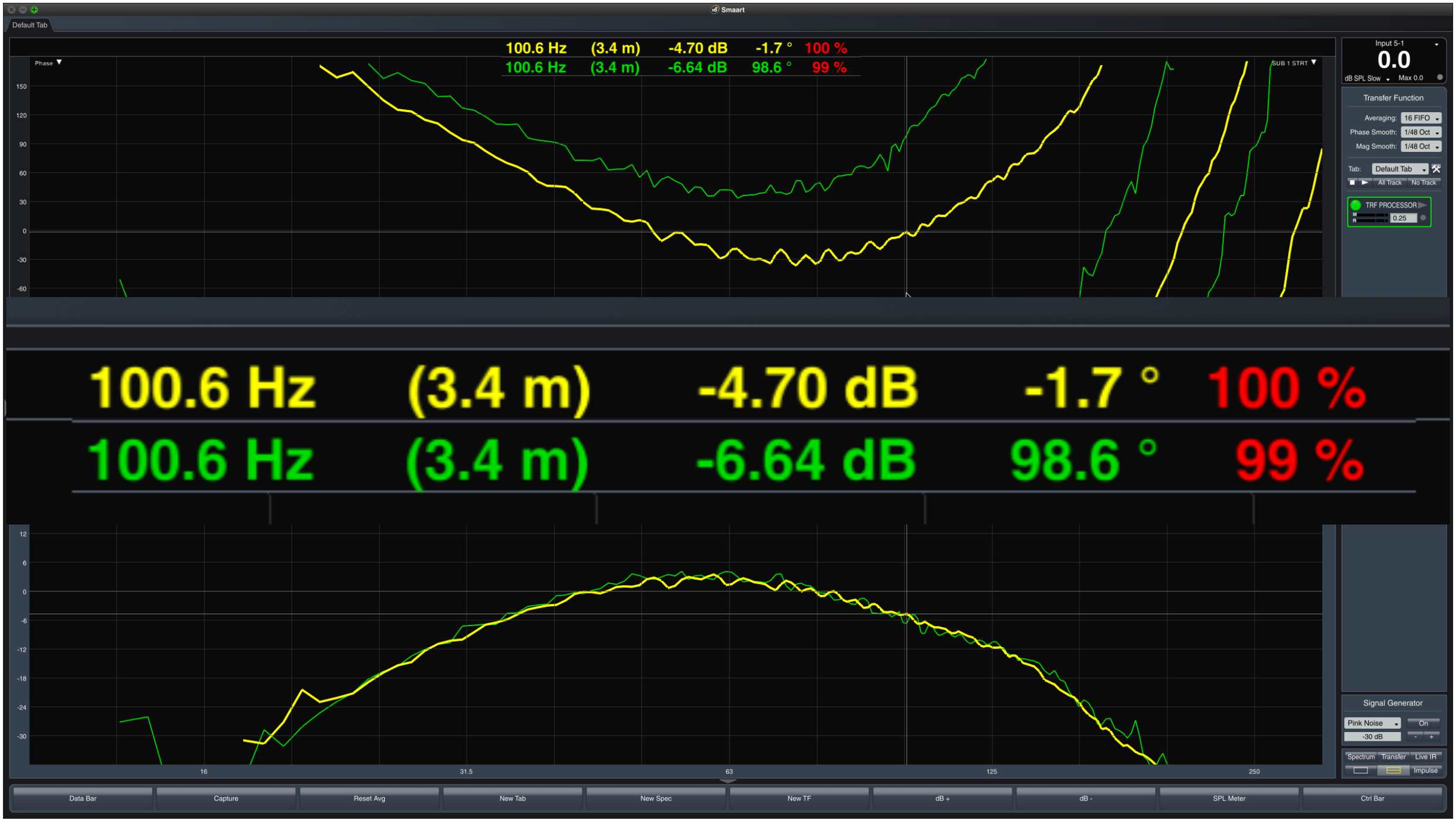
1mt

How does this “look” in Smaart?



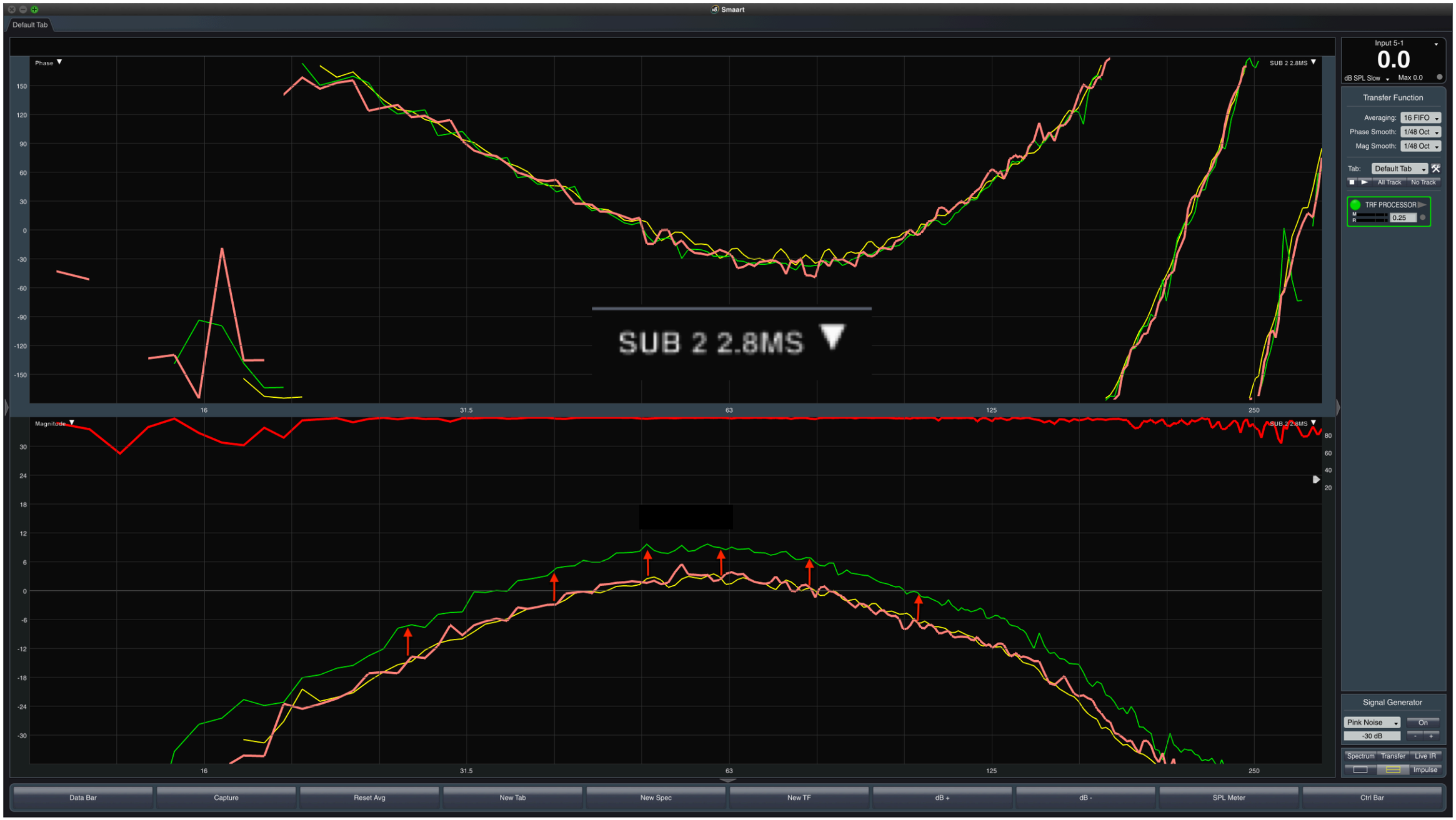
Sub 1 solo : 0ms

Sub 1 vs Sub 2 solo : 0ms



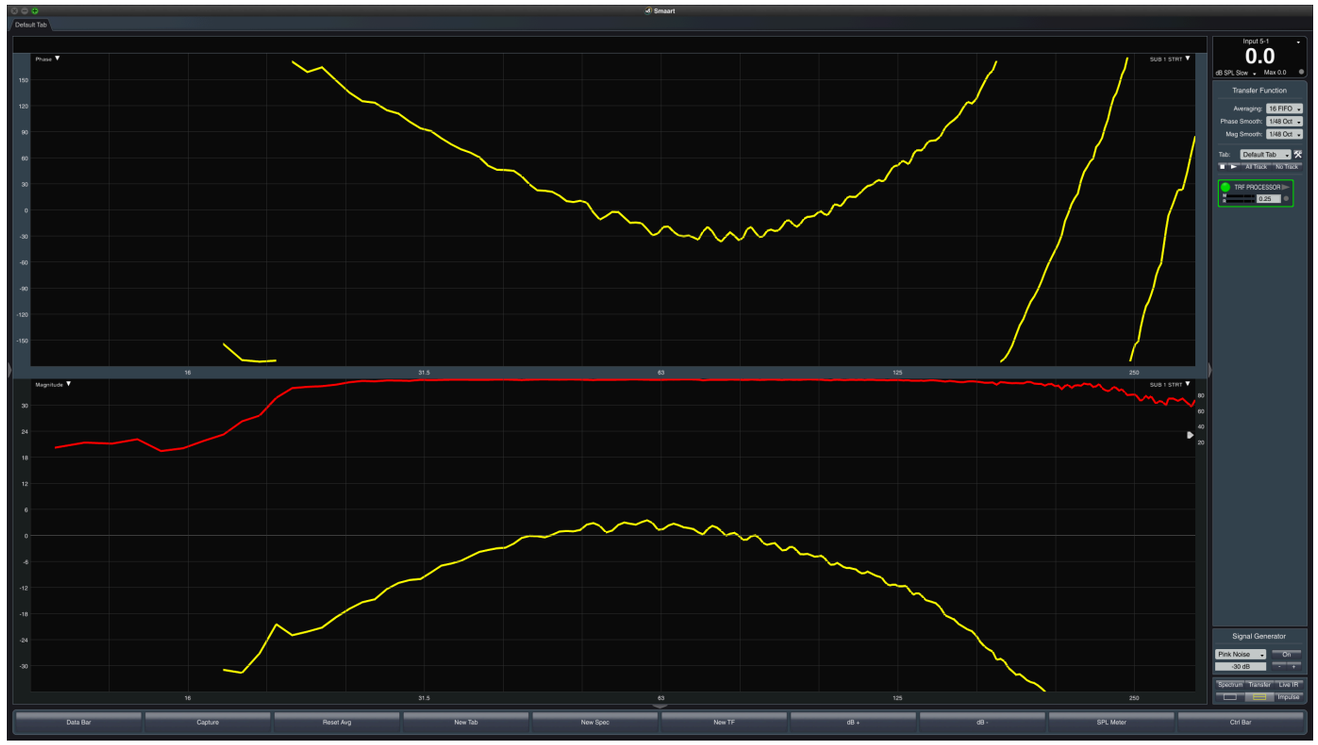
(Δphase/360º)xT(100.6Hz)=
(100.3º/360º)x(1000ms/100.6Hz)
0.279x9.94ms= 2.77ms

WTTRW: 2.8ms delay on Sub 2 match to Sub 1

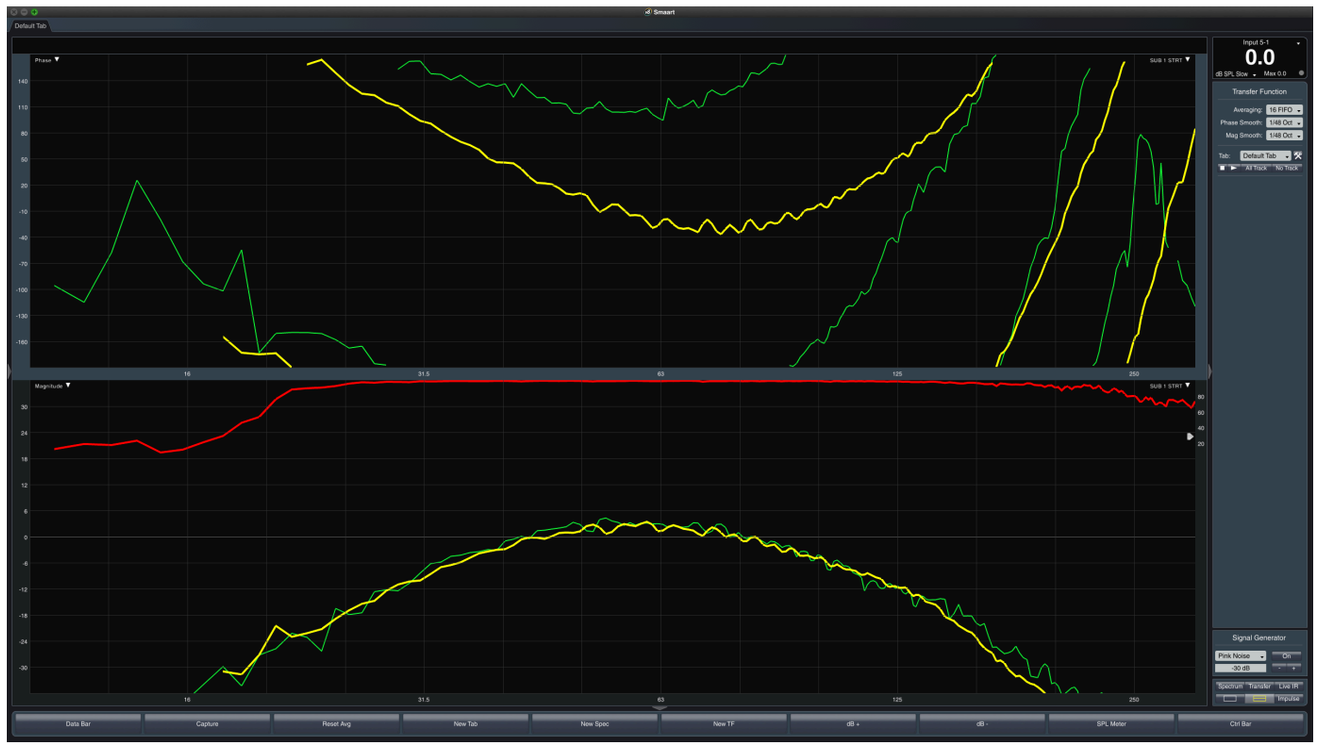


Sum Sub 1 + 2 Front Mic +6dB mic front @16mt

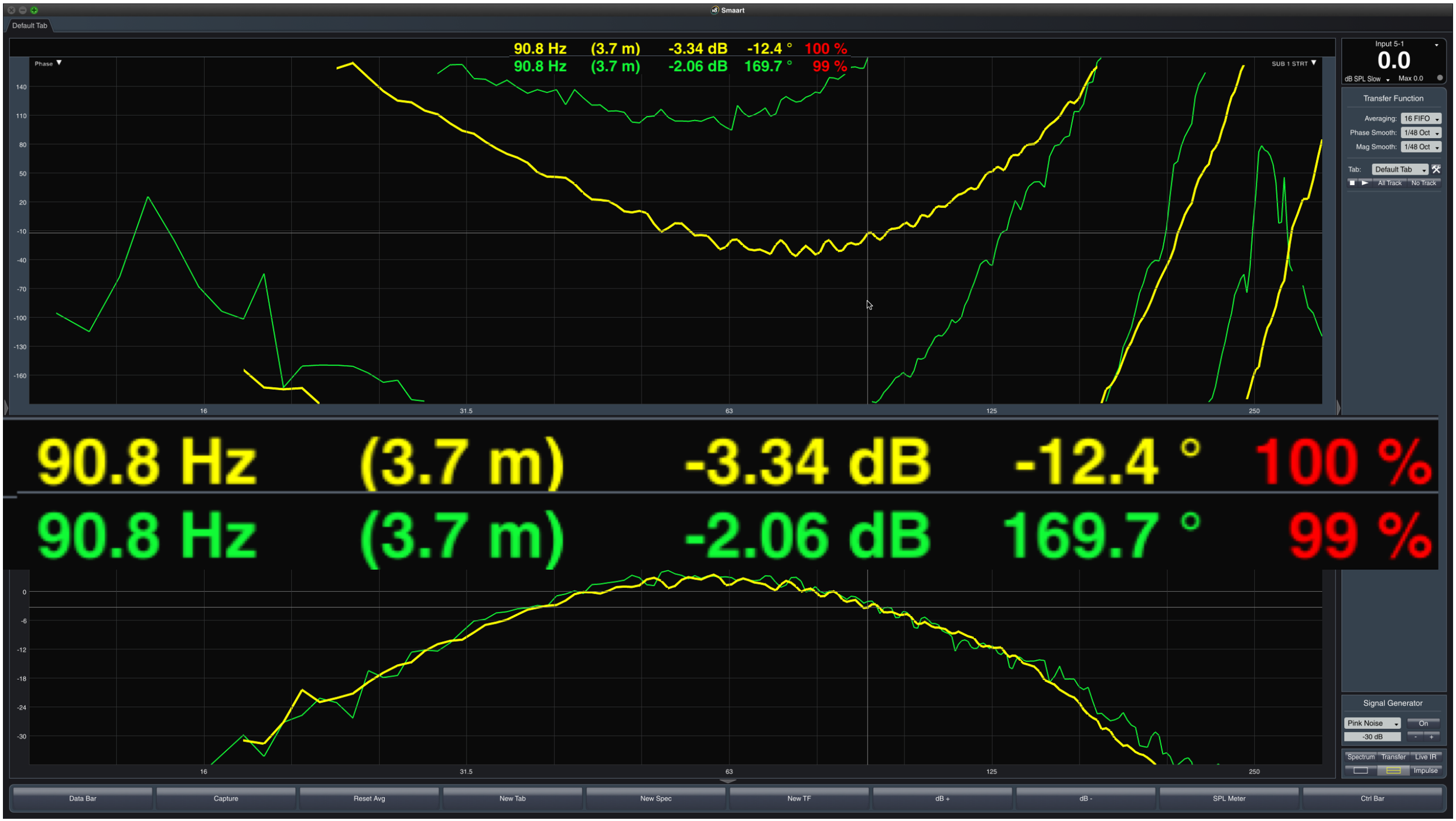
a little more then 6db due to inverse square law



Sub 1 solo : 0ms

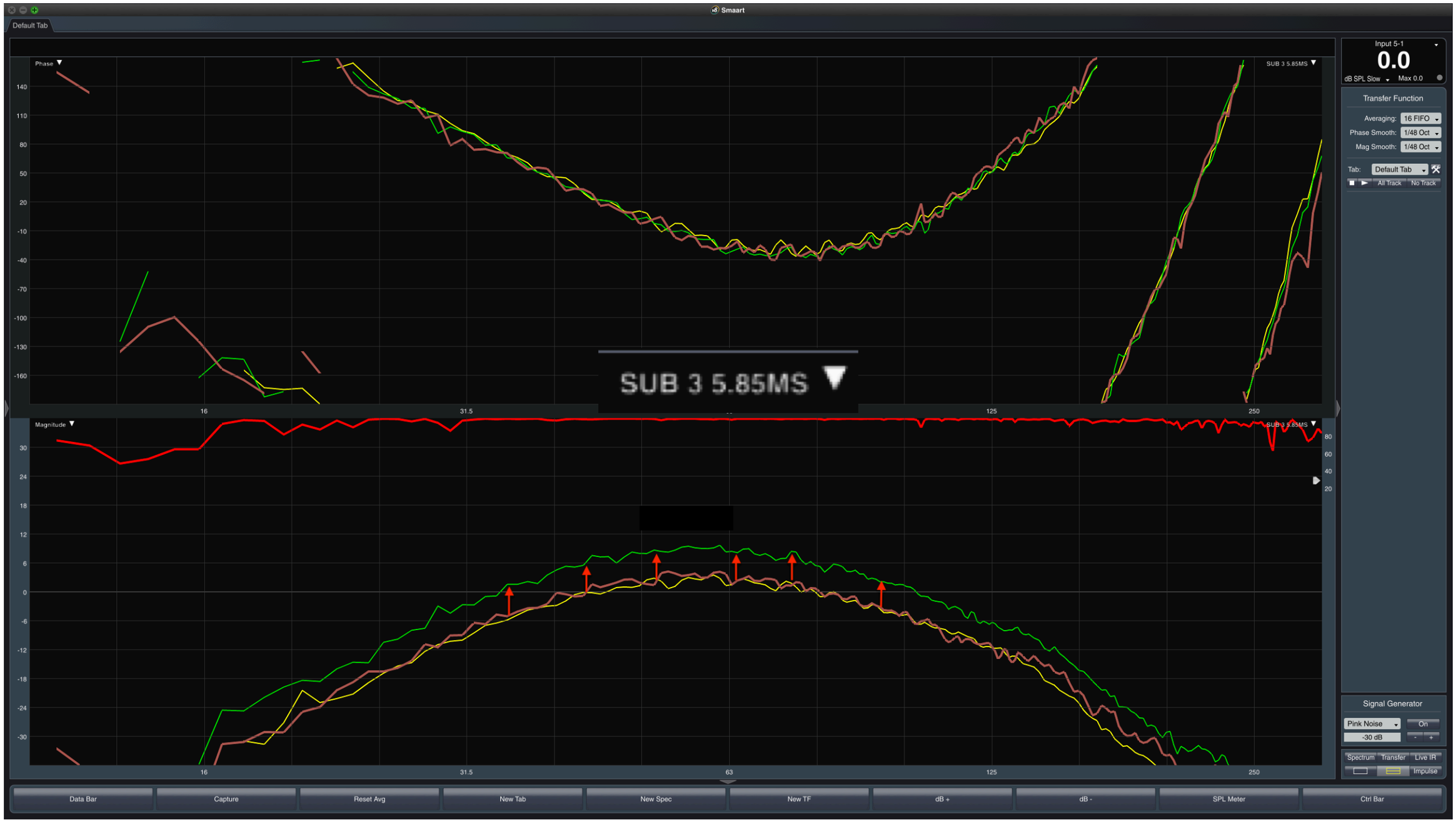


Sub 1 vs Sub 3 solo : 0ms



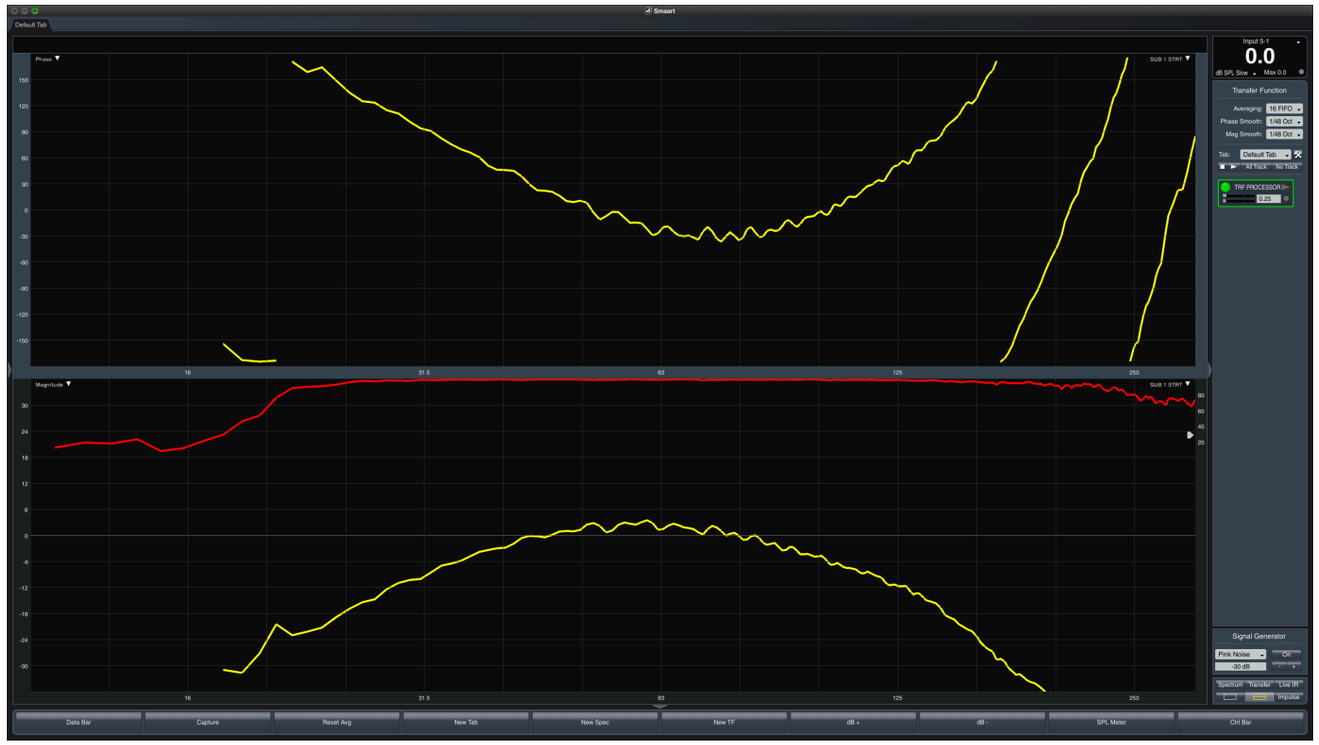
(Δphase/360º)xT(90.8Hz)=
(182.1º/360º)x(1000ms/90.8Hz)
0.506x11.01ms= 5.57ms

WTTRW: 5.85ms delay on Sub 3 match to Sub 1

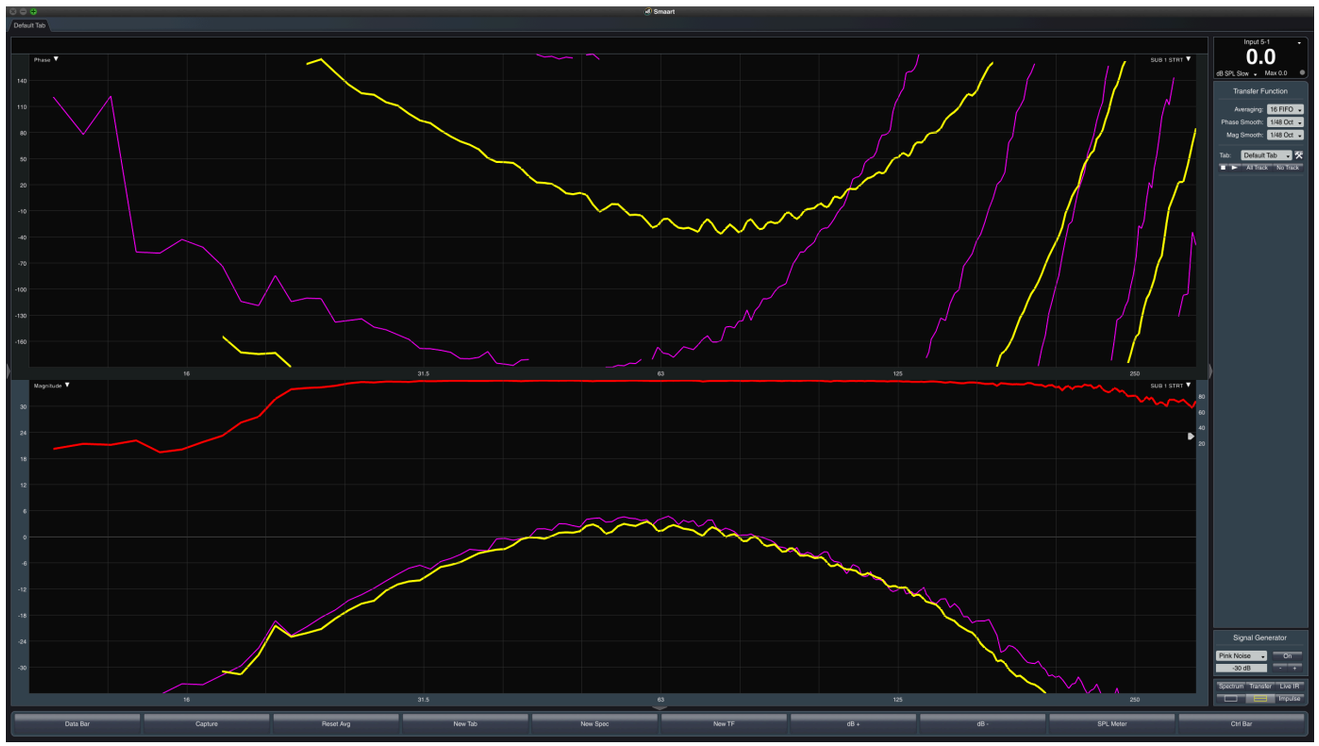


Sum Sub 1 + 3 Front Mic > +6dB mic front @16mt

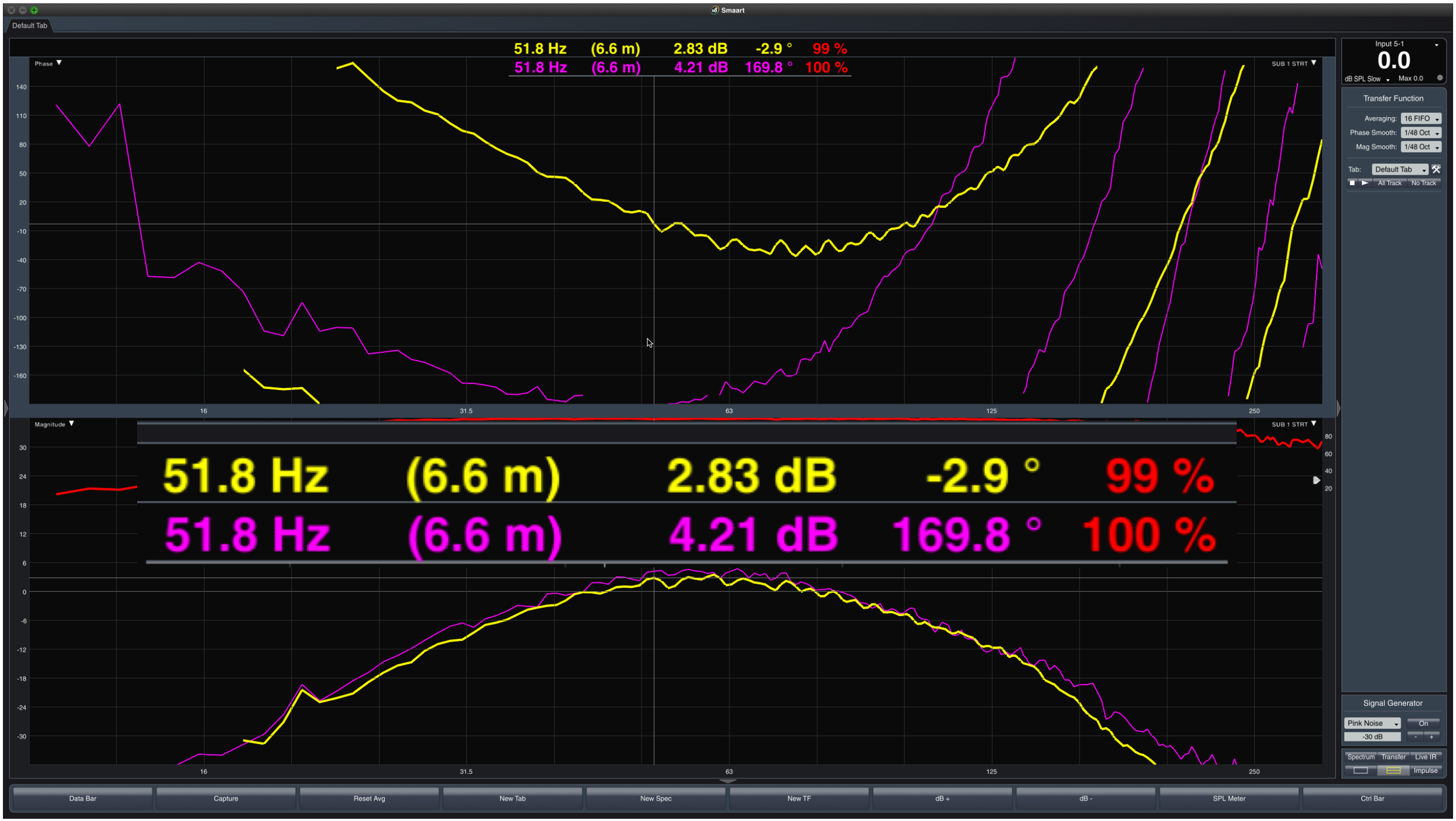
a little more then 6db due to inverse square law



Sub 1 solo : 0ms

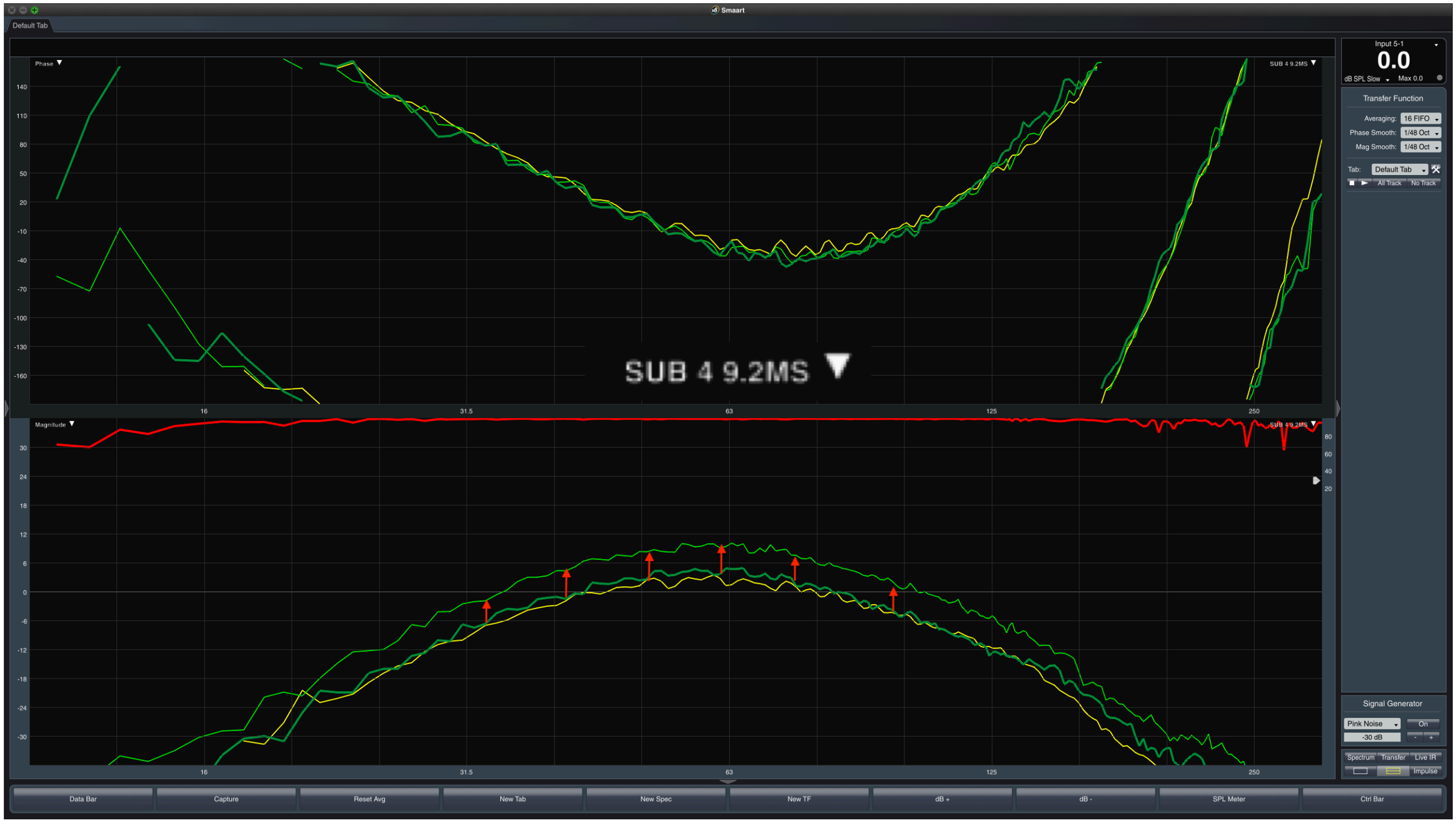


Sub 1 vs Sub 4 solo : 0ms



(Δphase/360º)xT(51.8Hz)=
(172.7º/360º)x(1000ms/51.8Hz)
0.48x19.31ms= 9.27ms

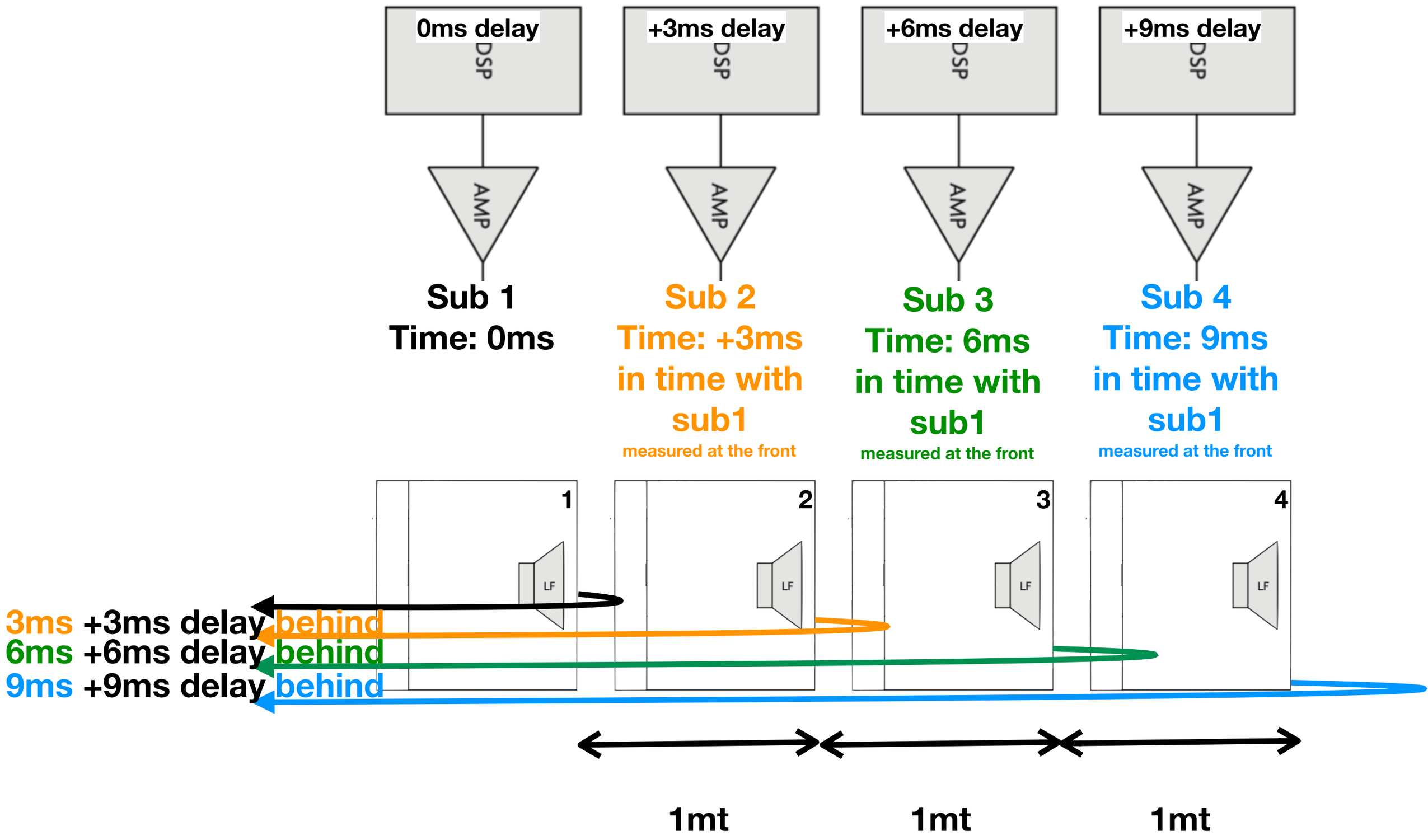
WTTRW: 9.2ms delay on Sub 4 match to Sub 1

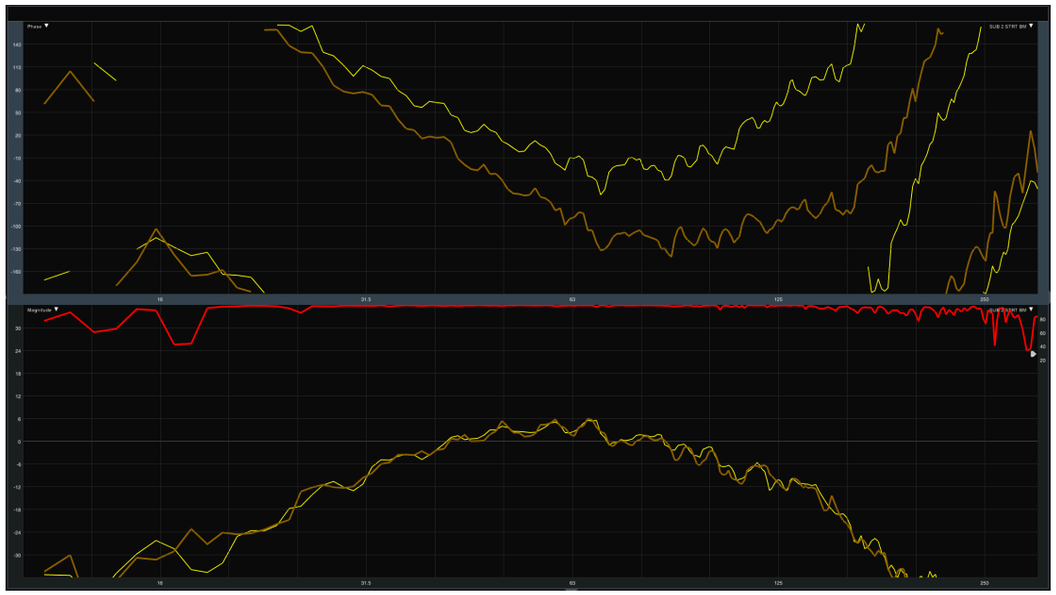


Sum Sub 1 + 3 Front Mic > +6dB mic front @16mt

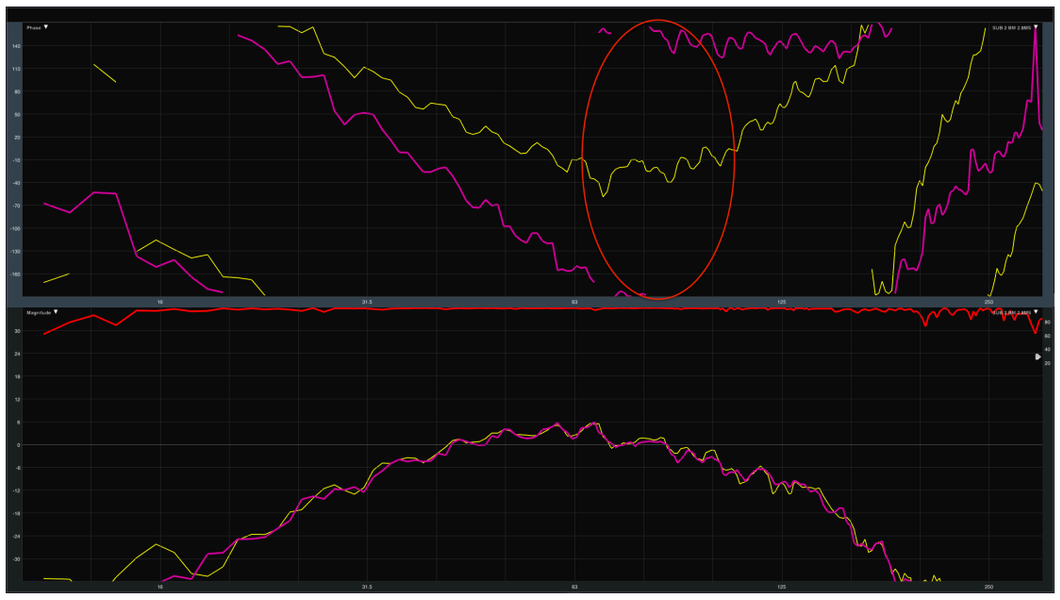
a little more then 6db due to inverse square law

So what's happening at the back of a End Fired Array

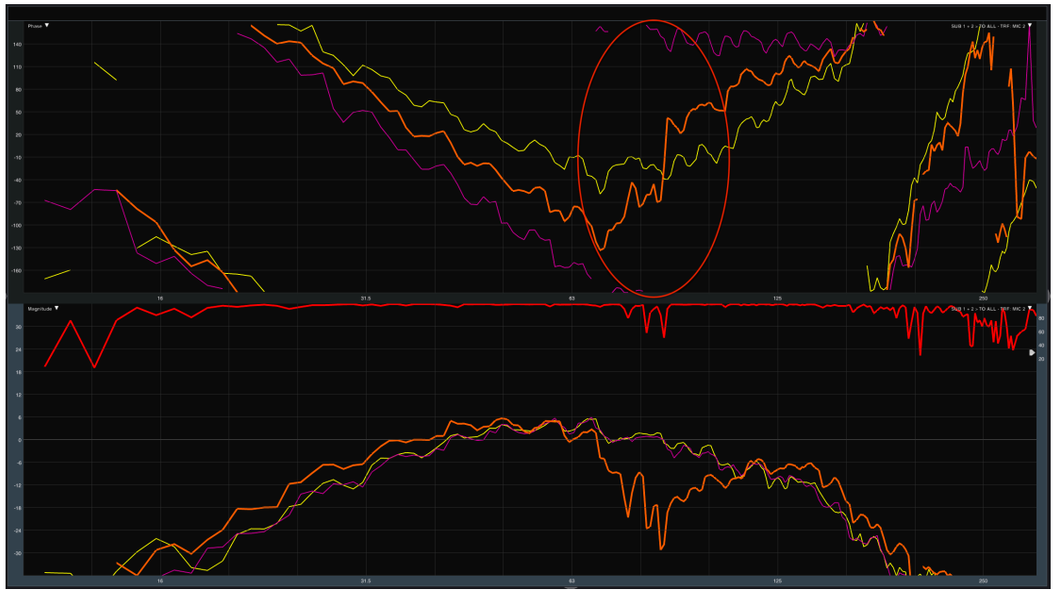

0ms delay
DSP
AMP
Sub 1
Time: 0ms
+3ms delay
DSP
AMP
Sub 2
Time: +3ms
in time with sub1
measured at the front
+6ms delay
DSP
AMP
Sub 3
Time: 6ms
in time with sub1
measured at the front
+9ms delay
DSP
AMP
Sub 4
Time: 9ms
in time with sub1
measured at the front
1
2
3
4
LF
LF
LF
LF
3ms +3ms delay behind
6ms +6ms delay behind
9ms +9ms delay behind
1mt
1mt
1mt



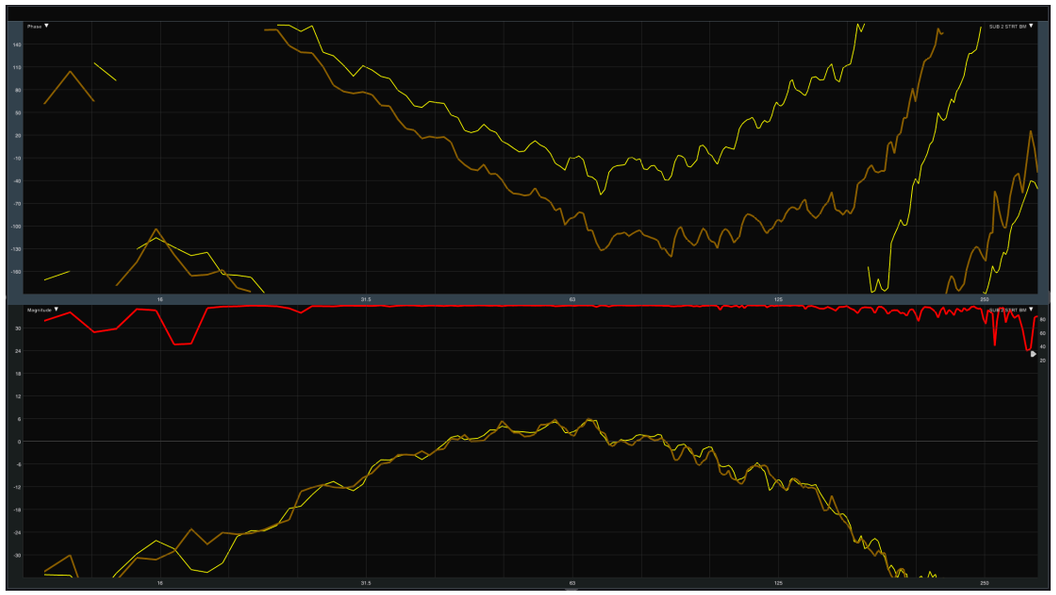
Sub 1 reference (Yellow) vs Sub 2 0ms



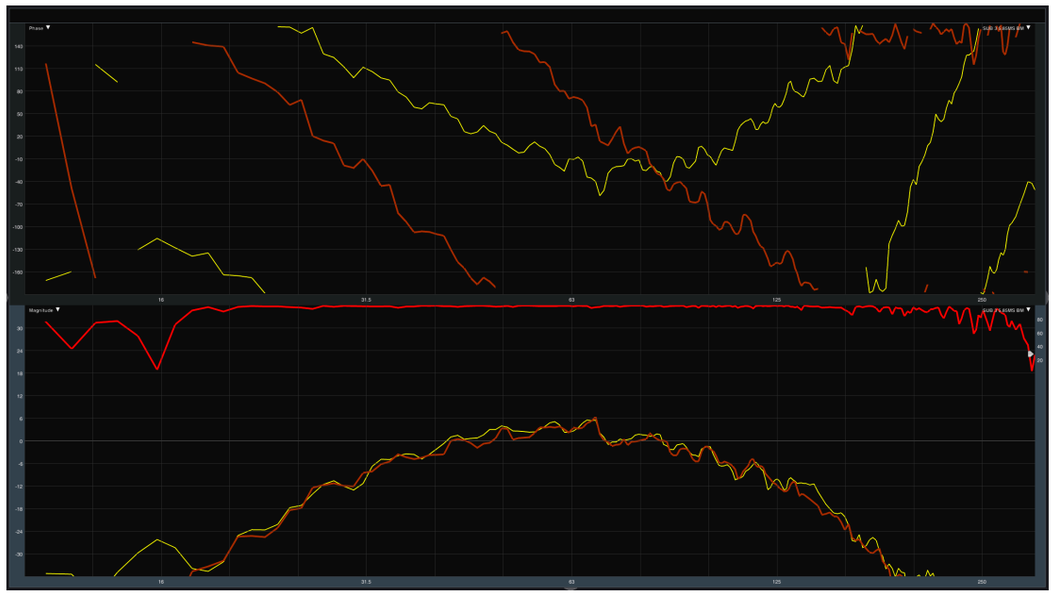
Sub 1 reference (Yellow) vs Sub 2 > 2.8ms delay



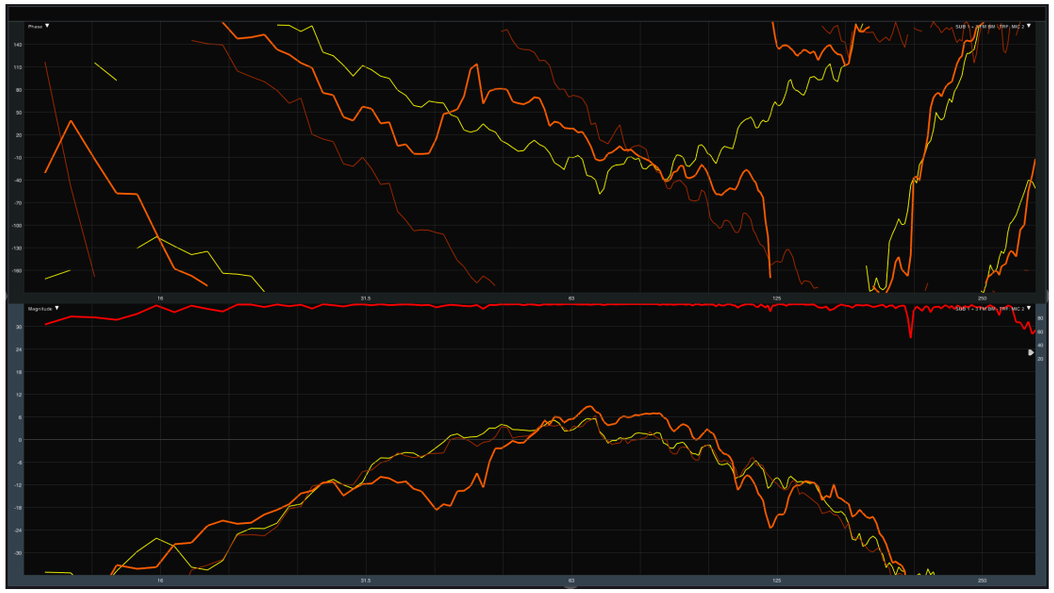
Sub 1 reference (Yellow) vs Sub 2 > 2.8ms delay
Sum Sub 1 + Sub 2 (2.8ms) Orange



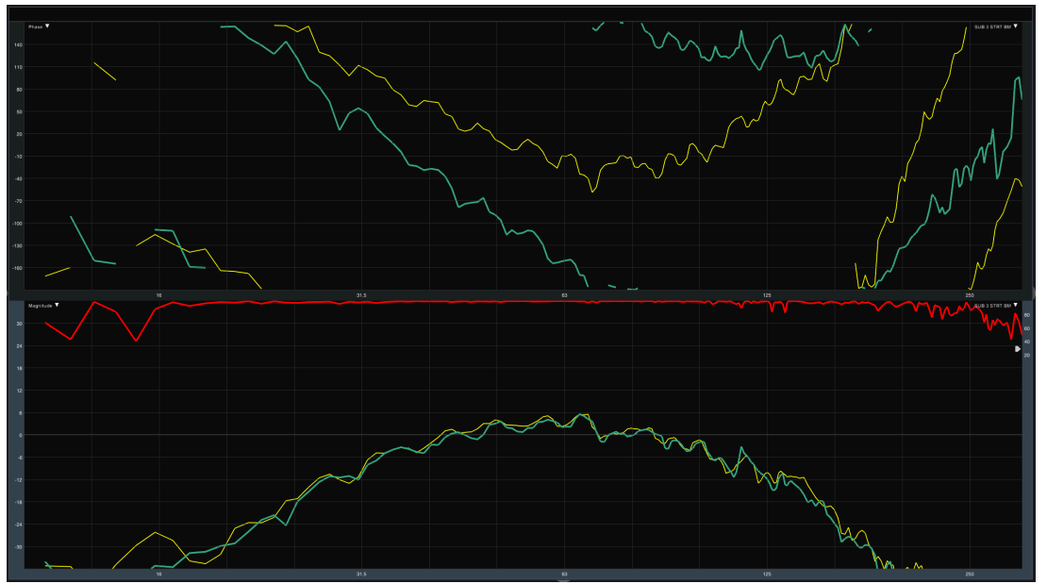
Sub 1 reference (Yellow) vs Sub 3 0ms



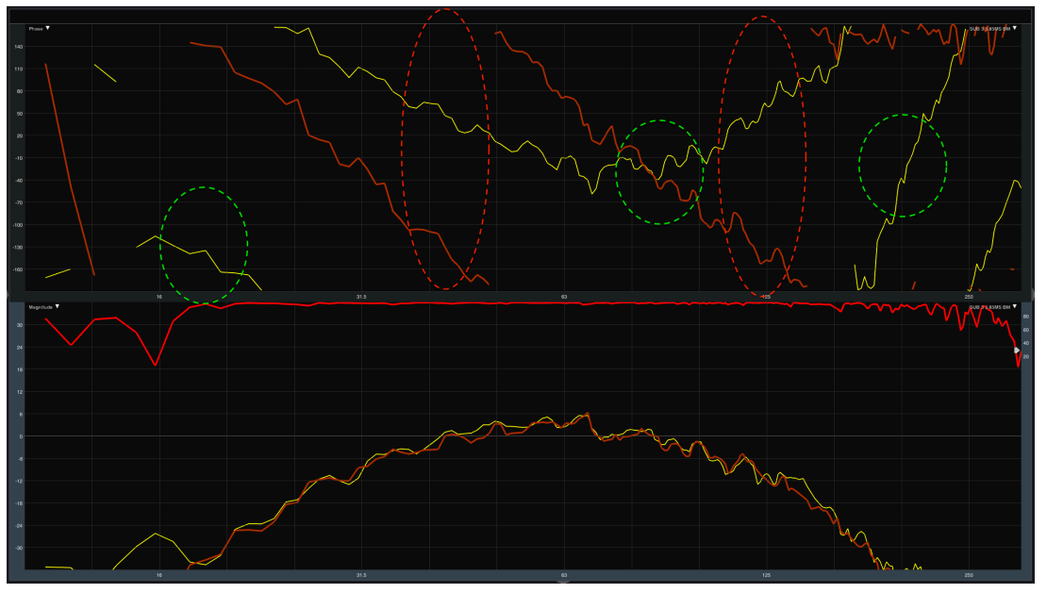
Sub 1 reference (Yellow) vs Sub 3 > 5.85ms delay



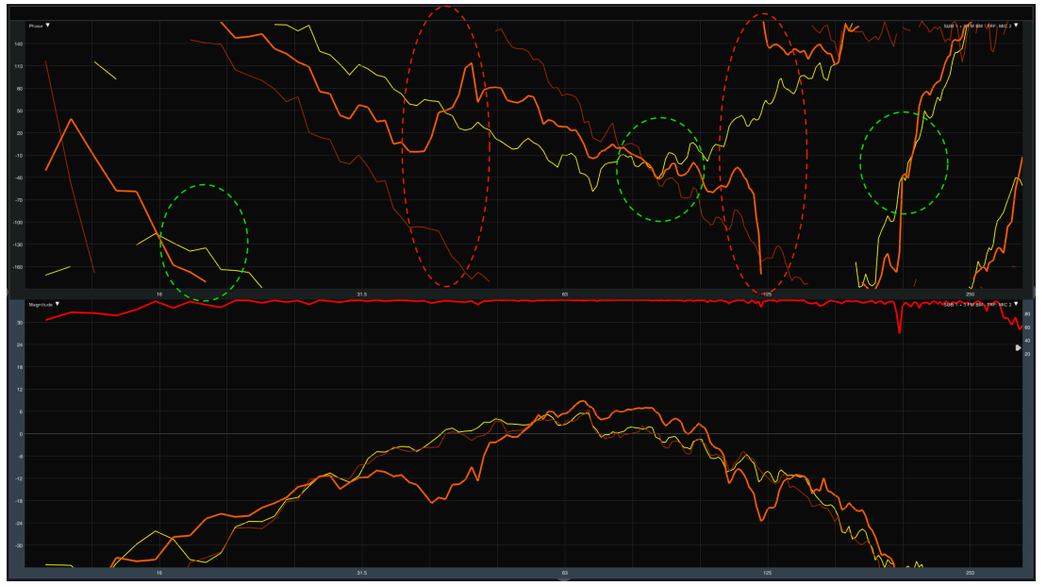
Sub 1 reference (Yellow) vs Sub 3 > 5.85ms delay
Sum Sub 1 + Sub 3 (2.8ms) Orange



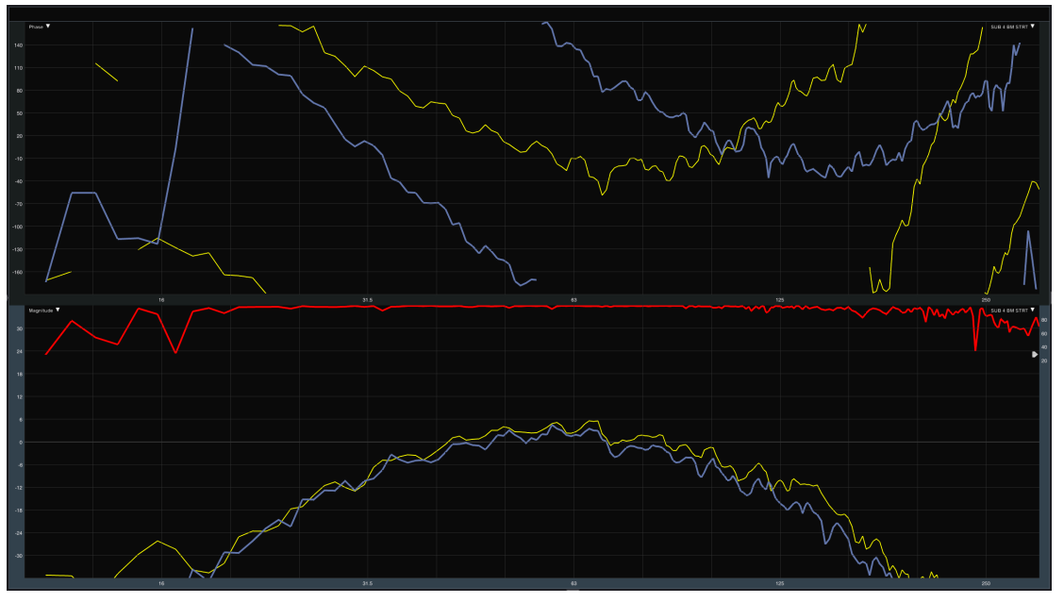
Sub 1 reference (Yellow) vs Sub 3 0ms



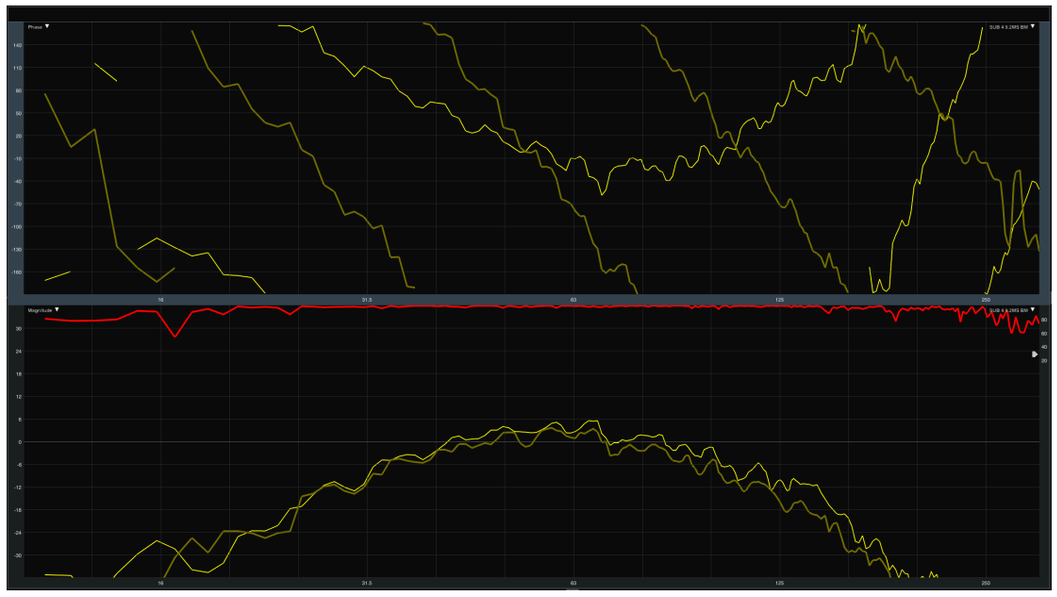
Sub 1 reference (Yellow) vs Sub 3 > 5.85ms delay



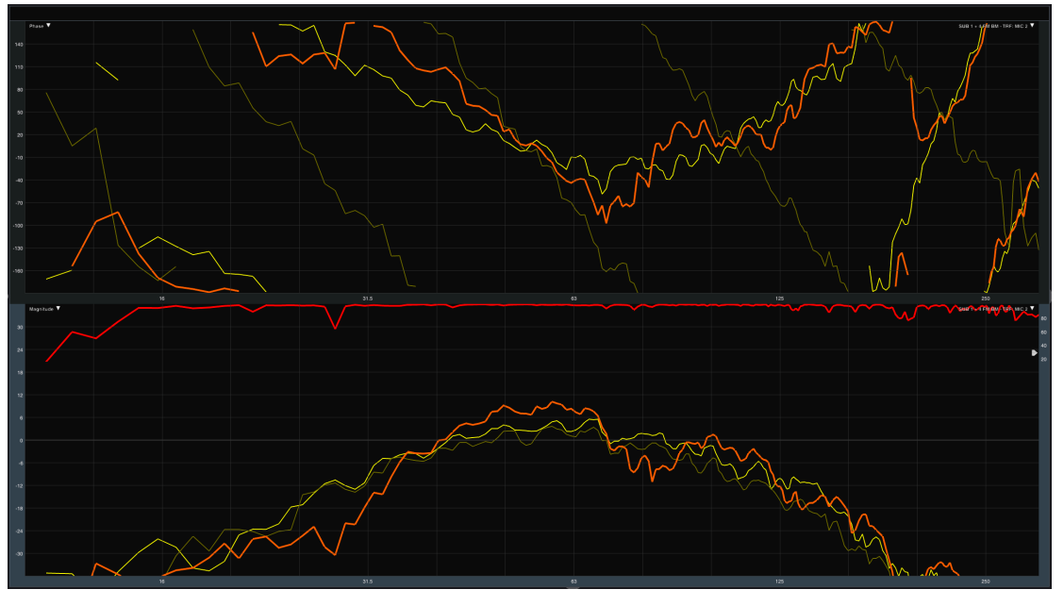
Sub 1 reference (Yellow) vs Sub 3 > 5.85ms delay
Som Sub 1 + Sub 3 (2.8ms) Orange



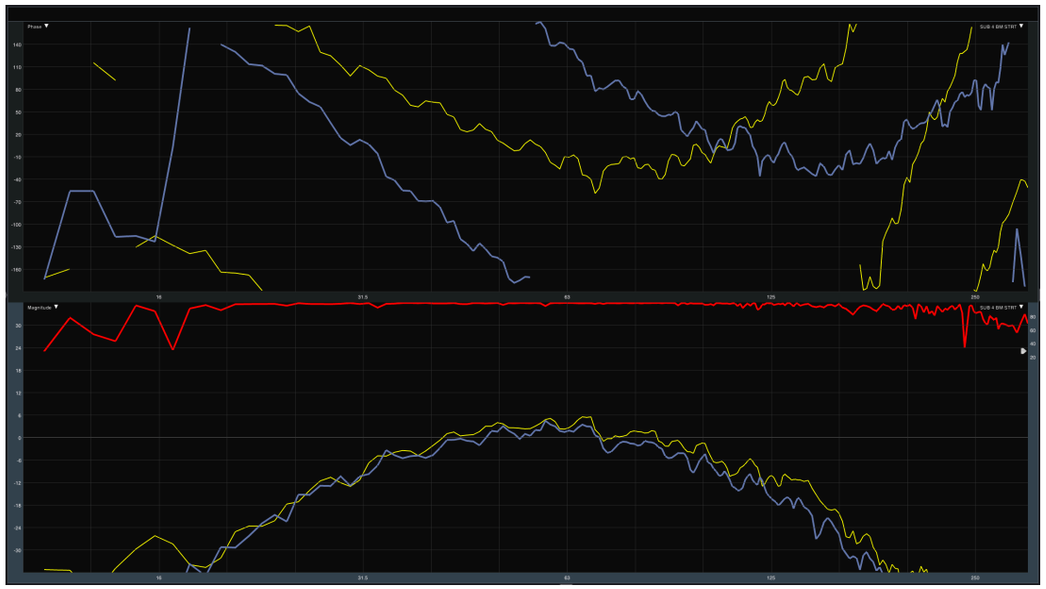
Sub 1 reference (Yellow) vs Sub 4 0ms



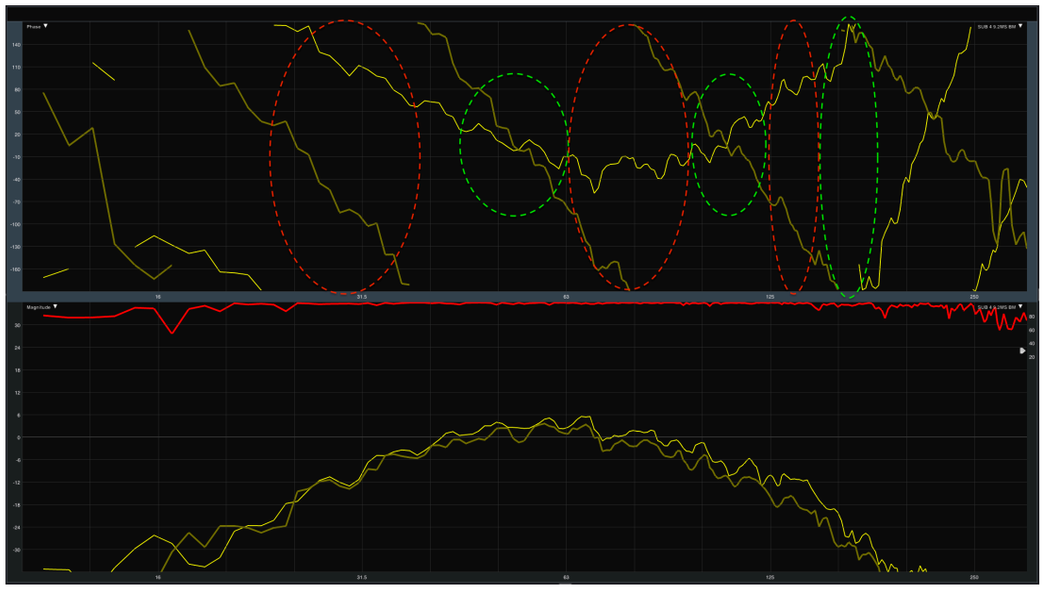
Sub 1 reference (Yellow) vs Sub 4 > 9.2ms delay



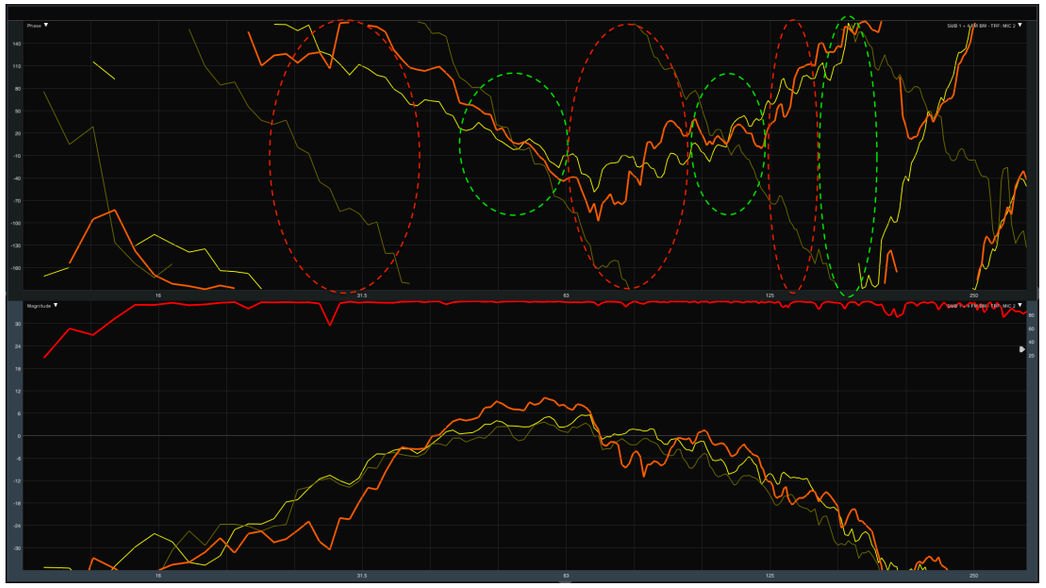
Sub 1 reference (Yellow) vs Sub 4 > 9.2ms delay
Som Sub 1 + Sub 4 (2.8ms) Orange



Sub 1 reference (Yellow) vs Sub 4 0ms

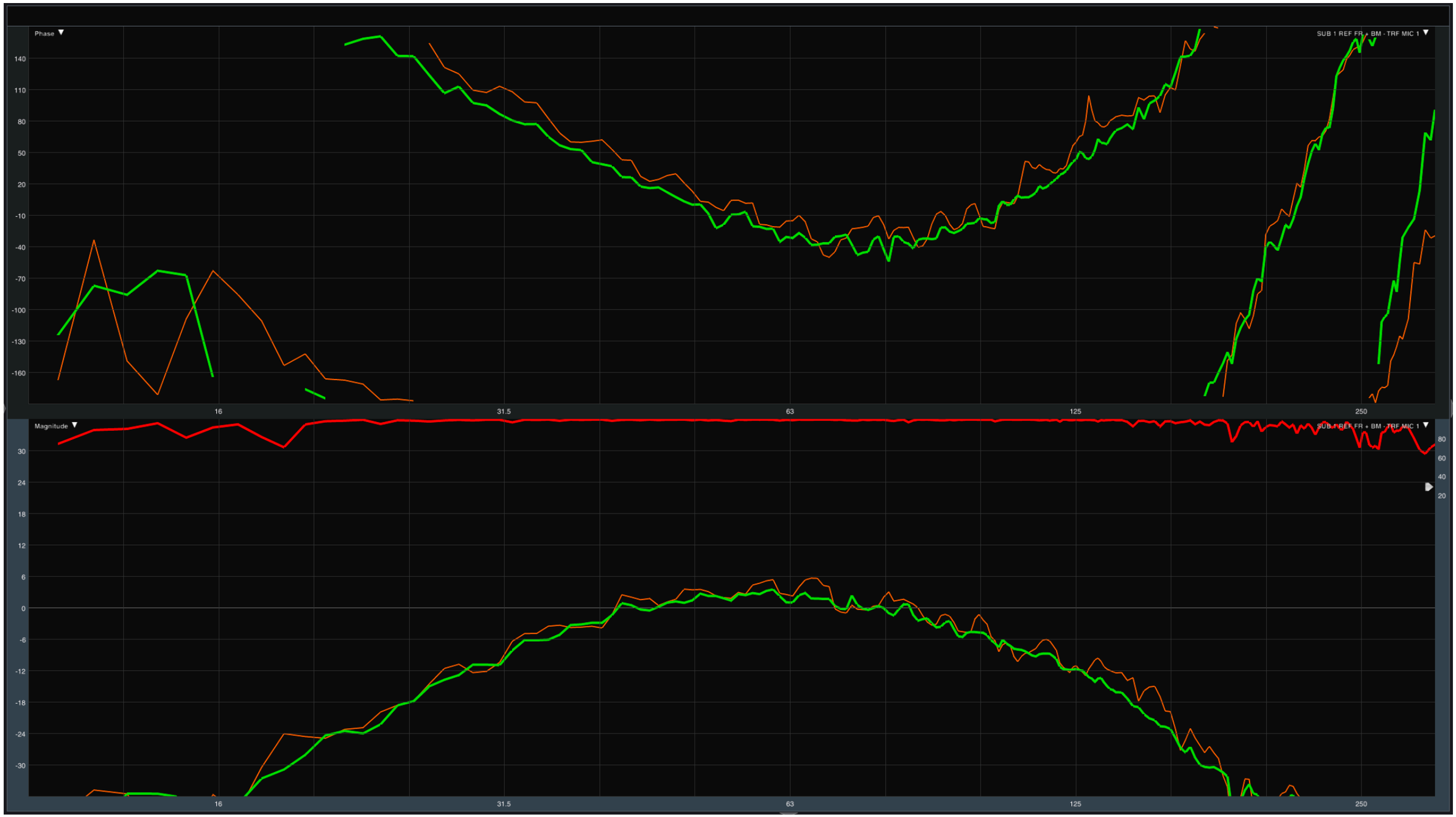


Sub 1 reference (Yellow) vs Sub 4 > 9.2ms delay

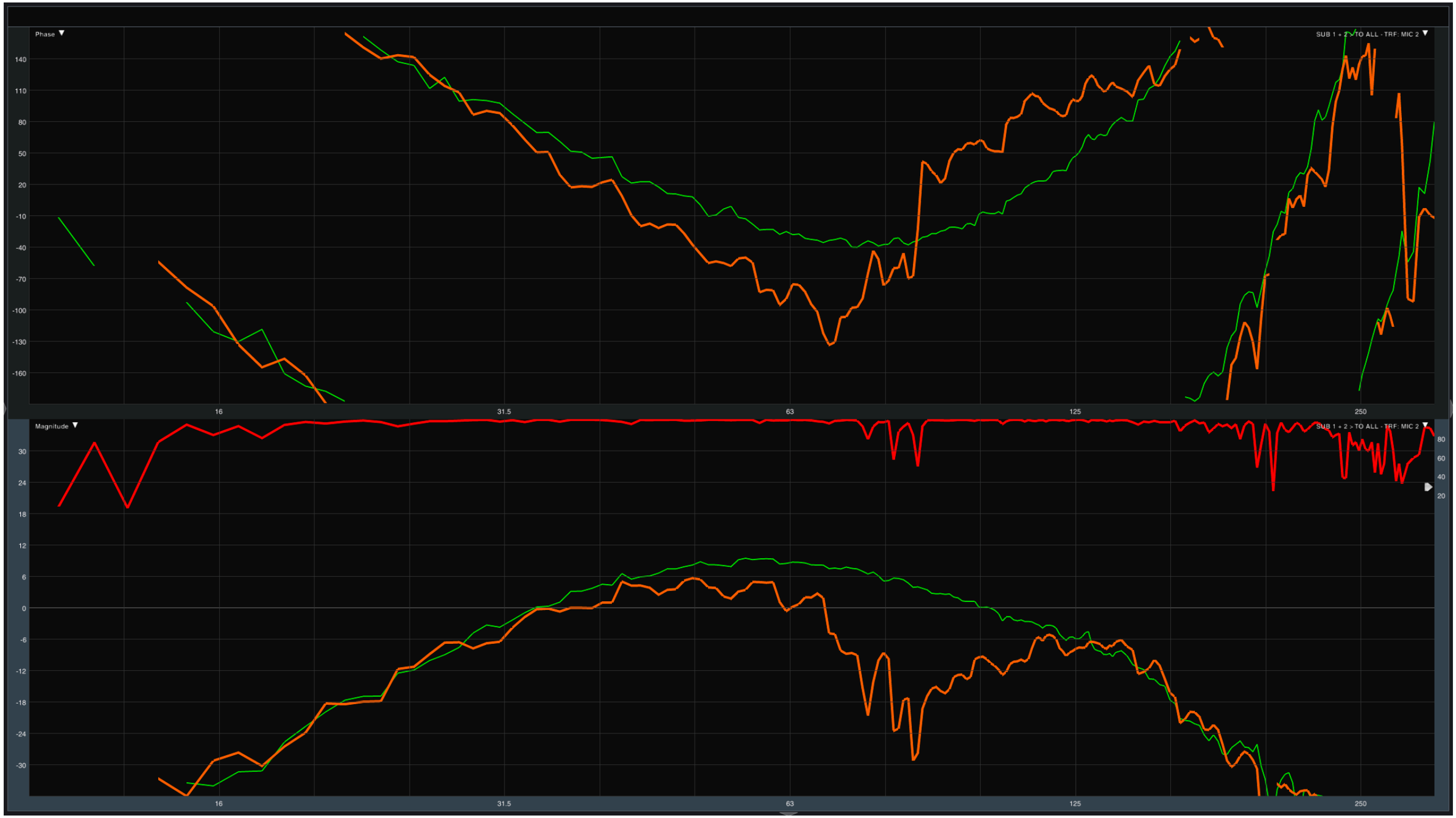


Sub 1 reference (Yellow) vs Sub 4 > 9.2ms delay
Som Sub 1 + Sub 4 (9.2ms) Orange

Sub 1 solo Front mic Green Back mic Orange

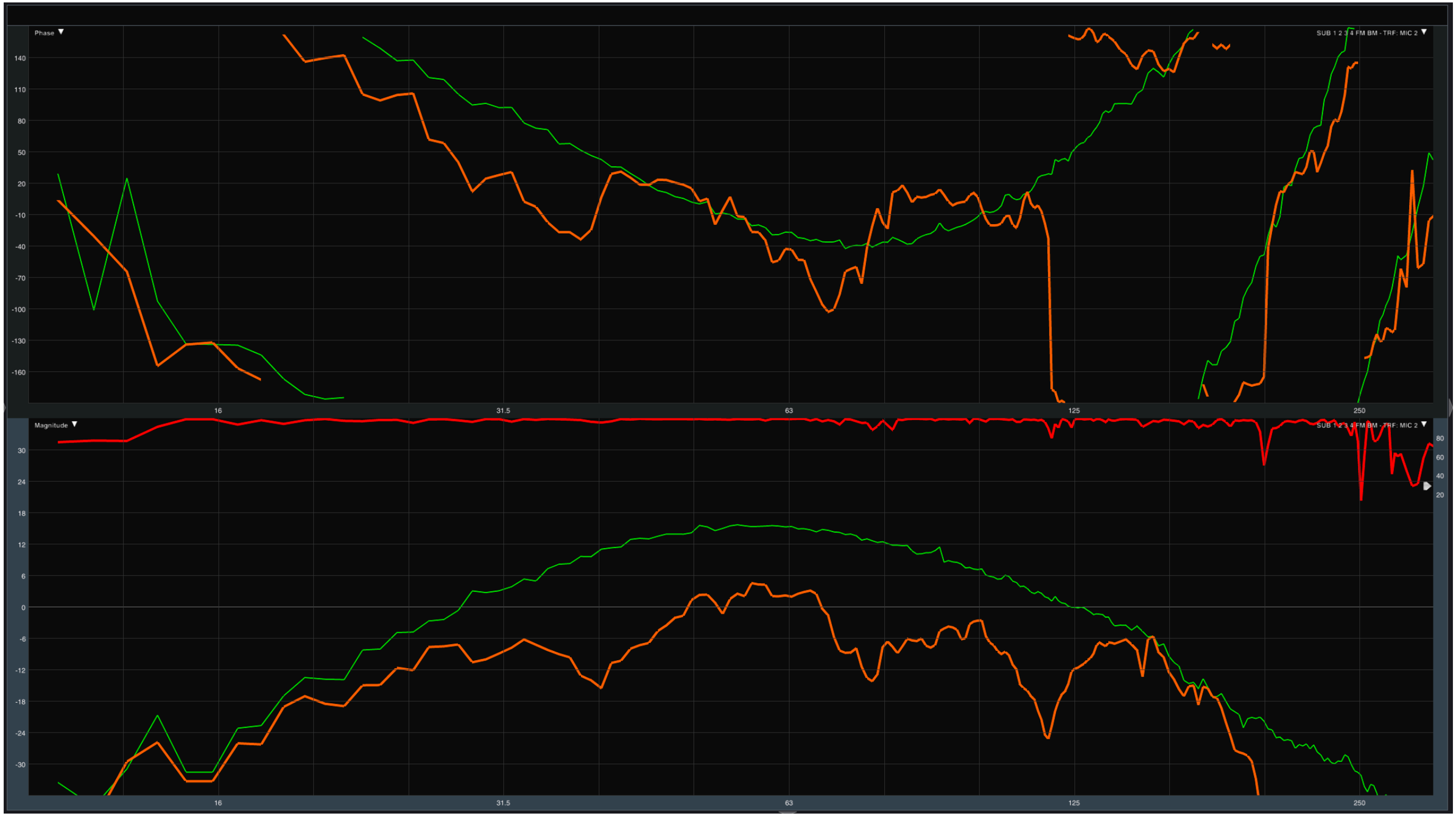


SUM Sub 1 + 2 Front mic Green Back mic Orange

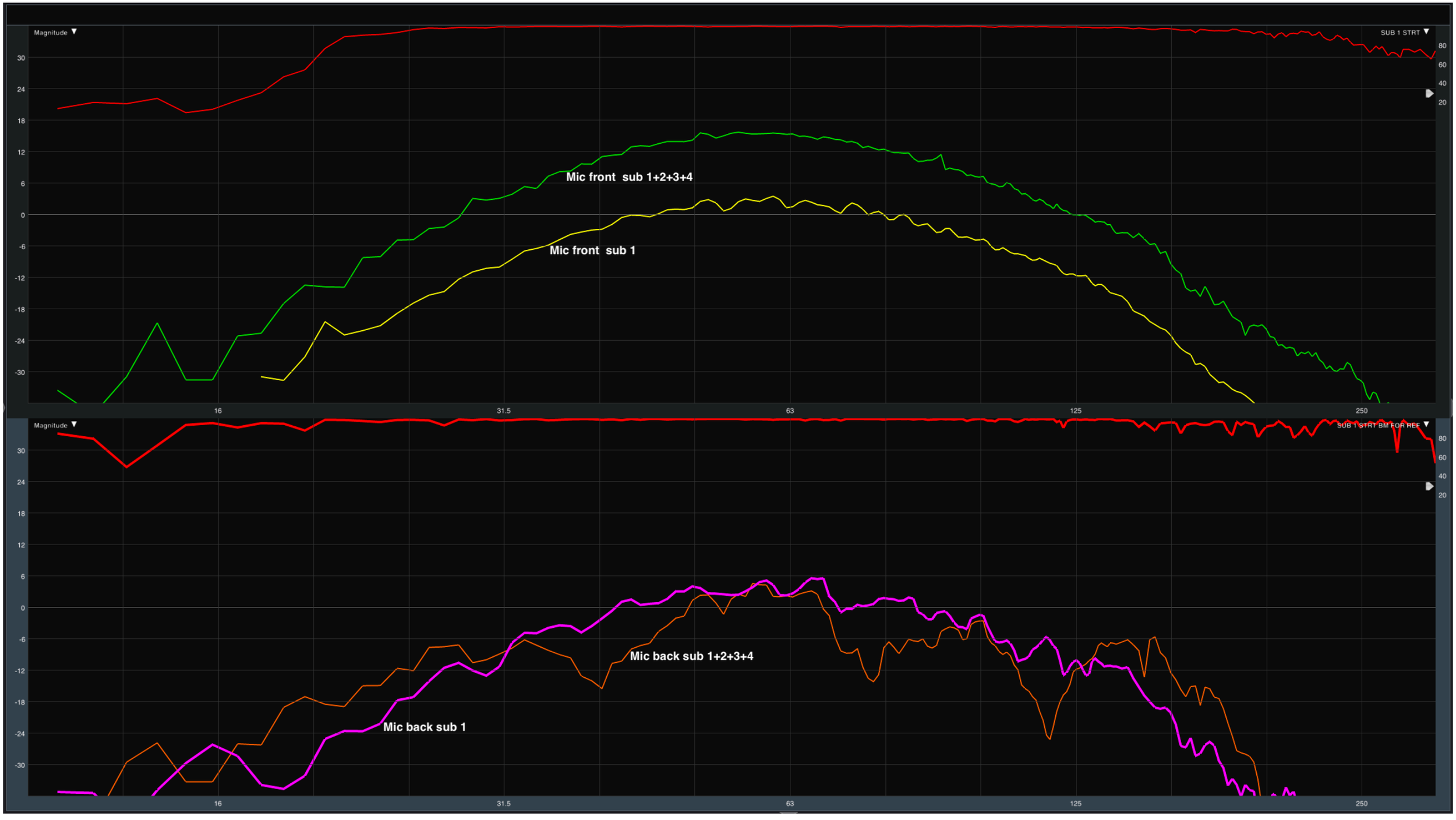
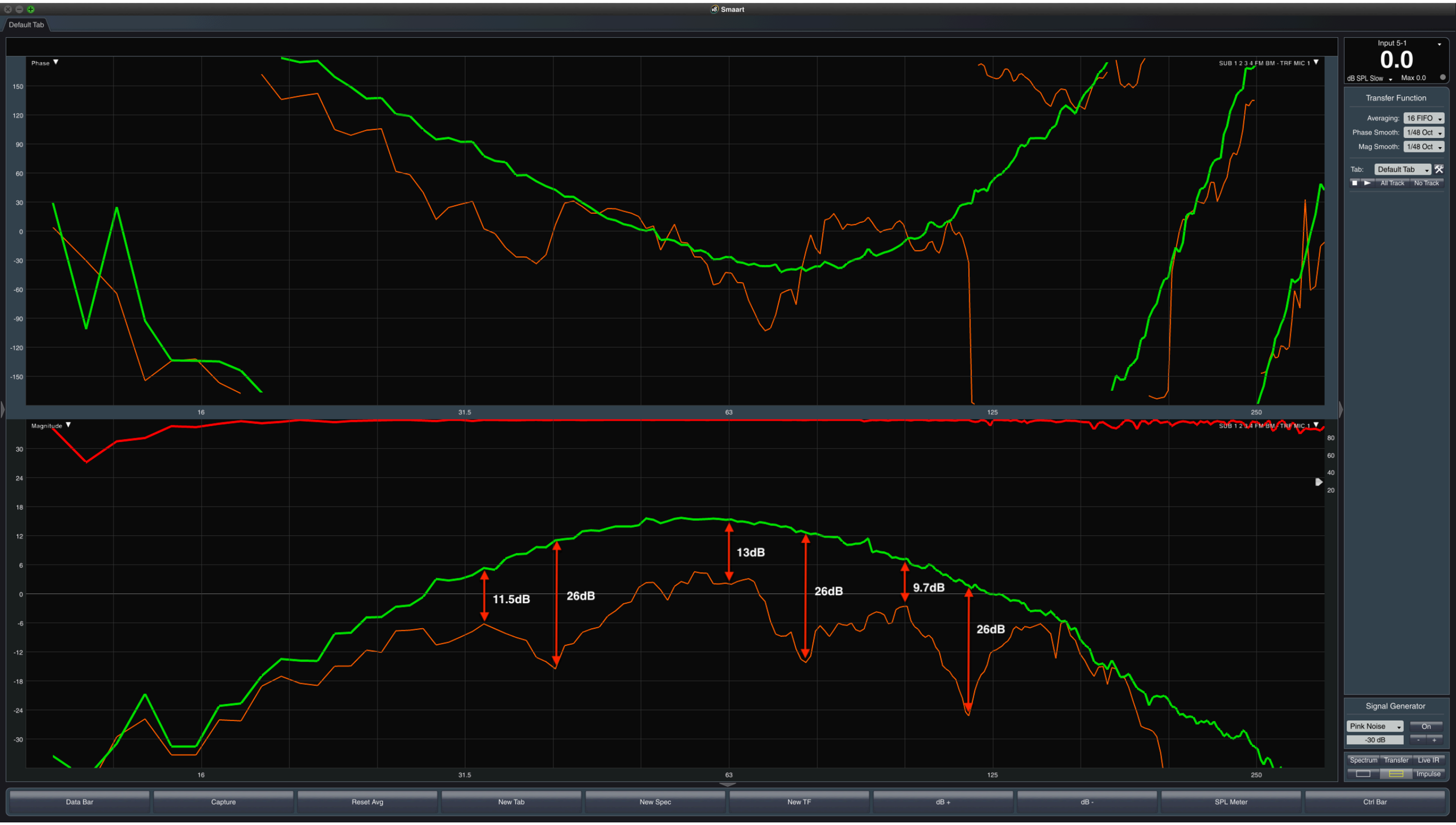


SUM Sub 1 + 2 + 3 Front mic Green Back mic Orange

SUM Sub 1 + 2 + 3 + 4 Front mic Green Back mic Orange



Yellow Sub 1 solo front mic @16mt from Sub 4
Green Sum Sub 1 2 3 4 front mic @16mt from Sub 4
Pink Sub 1 solo back mic @16mt from back Sub 1
Orange Sum Sun 1 2 3 4 back mic @16mt from back Sub 1



Green Sum Sub 1 2 3 4 front mic @16mt van front Sub 4
Orange Sum Sub 1 2 3 4 back mic @16mt van back Sub 1