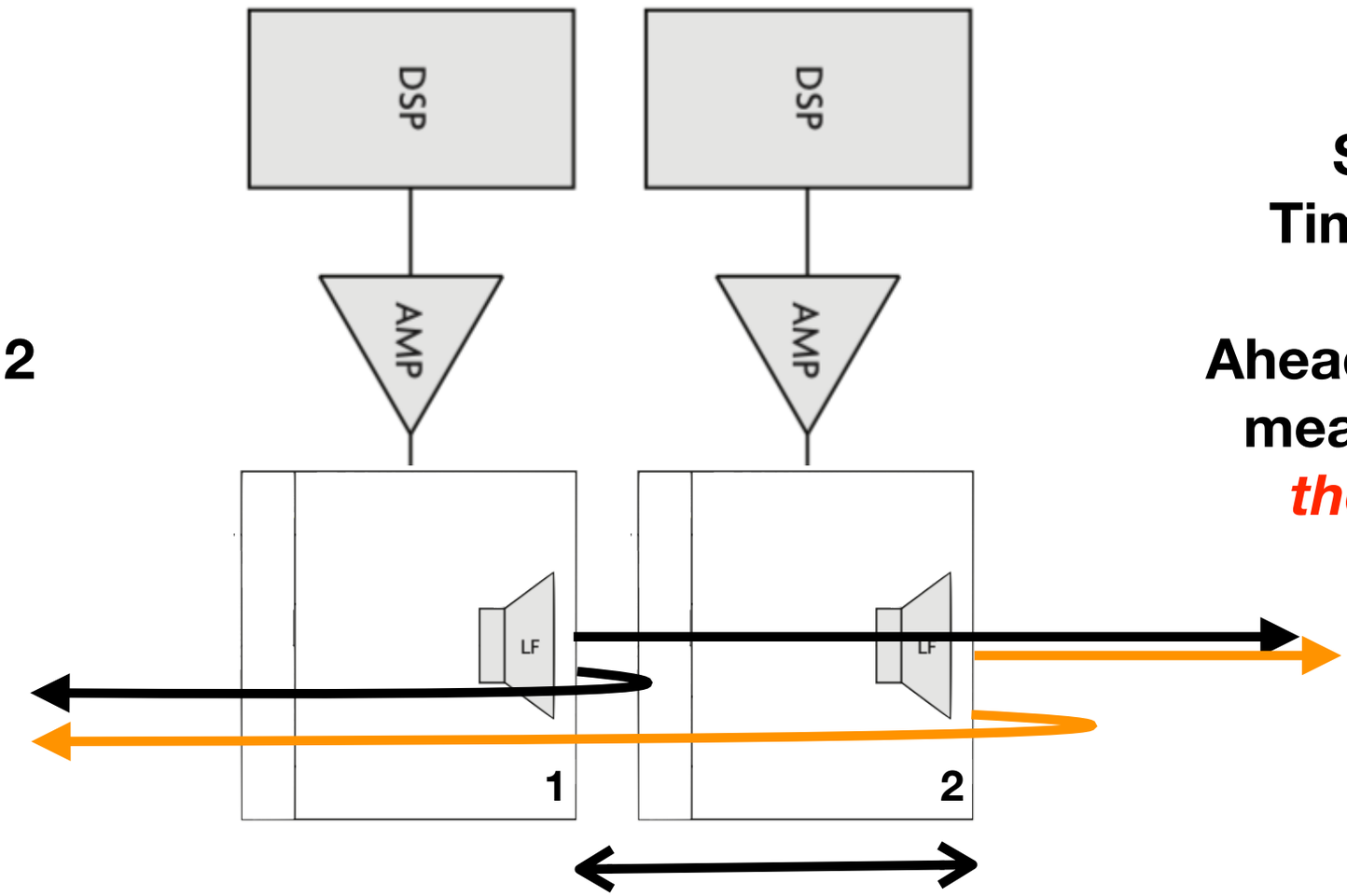
Gradient / Reversed End Fired

Gradient / Reversed End Fired

Sub 1
Time: 0ms

Ahead to sub 2
measured @
the back



1mt

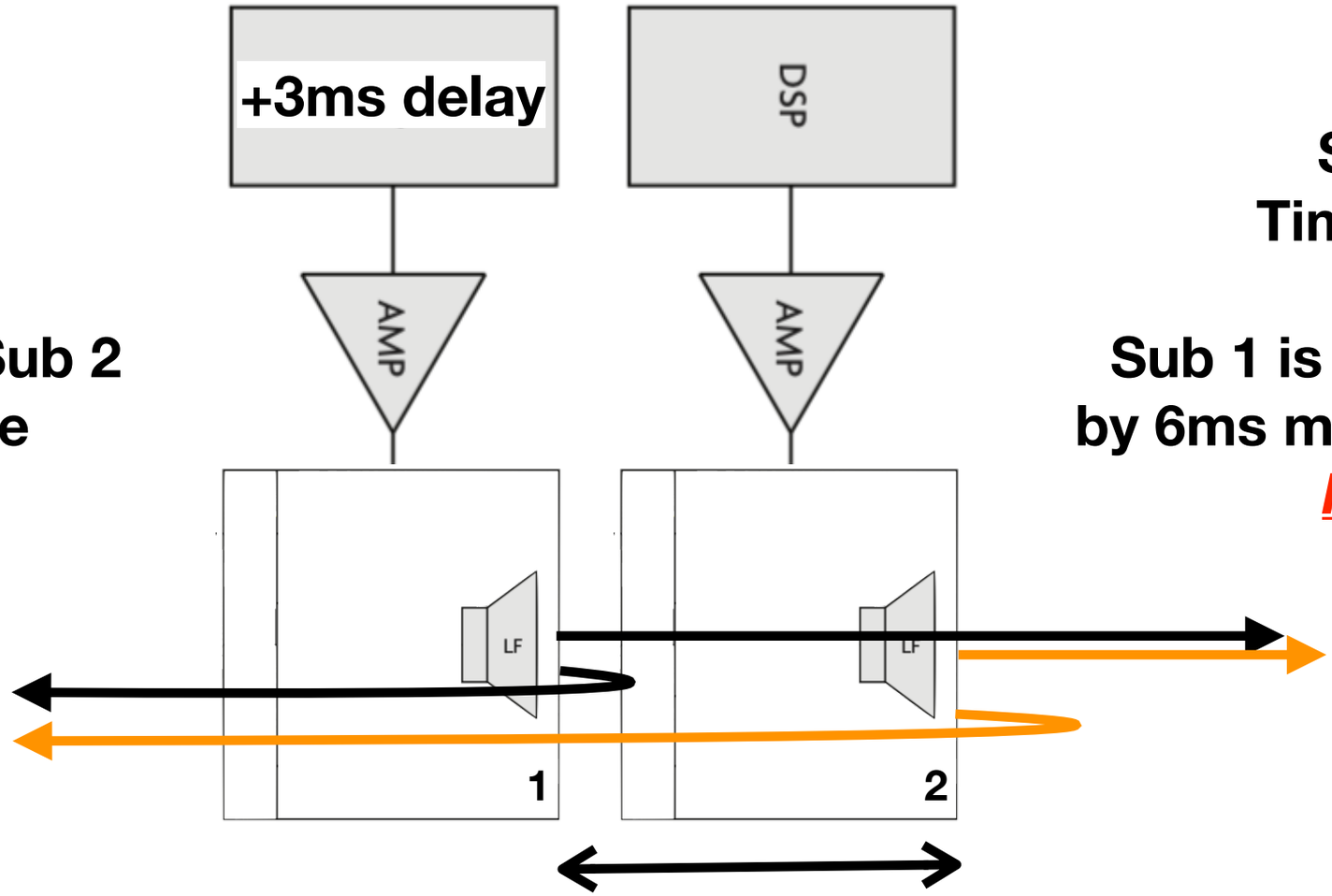
Sub 2
Time: 0ms

Ahead to sub 1
measured @
the front

Sub 1
Time: +3ms

Phase aligned to Sub 2
measured @ the
Back

+6db minimal

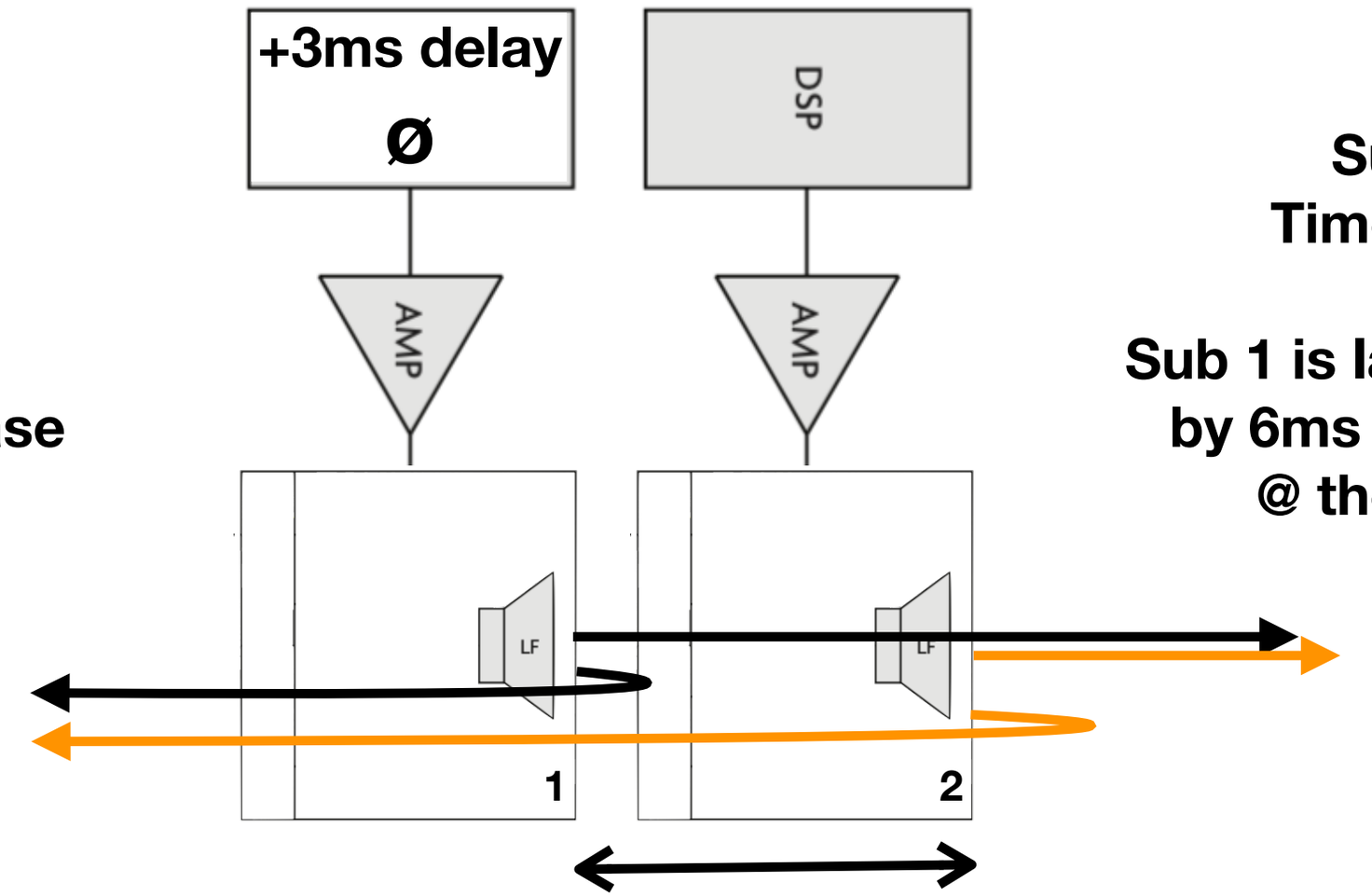


1mt

Sub 2
Time: 0ms

Sub 1 is late to Sub 2
by 6ms measured @ the
Front

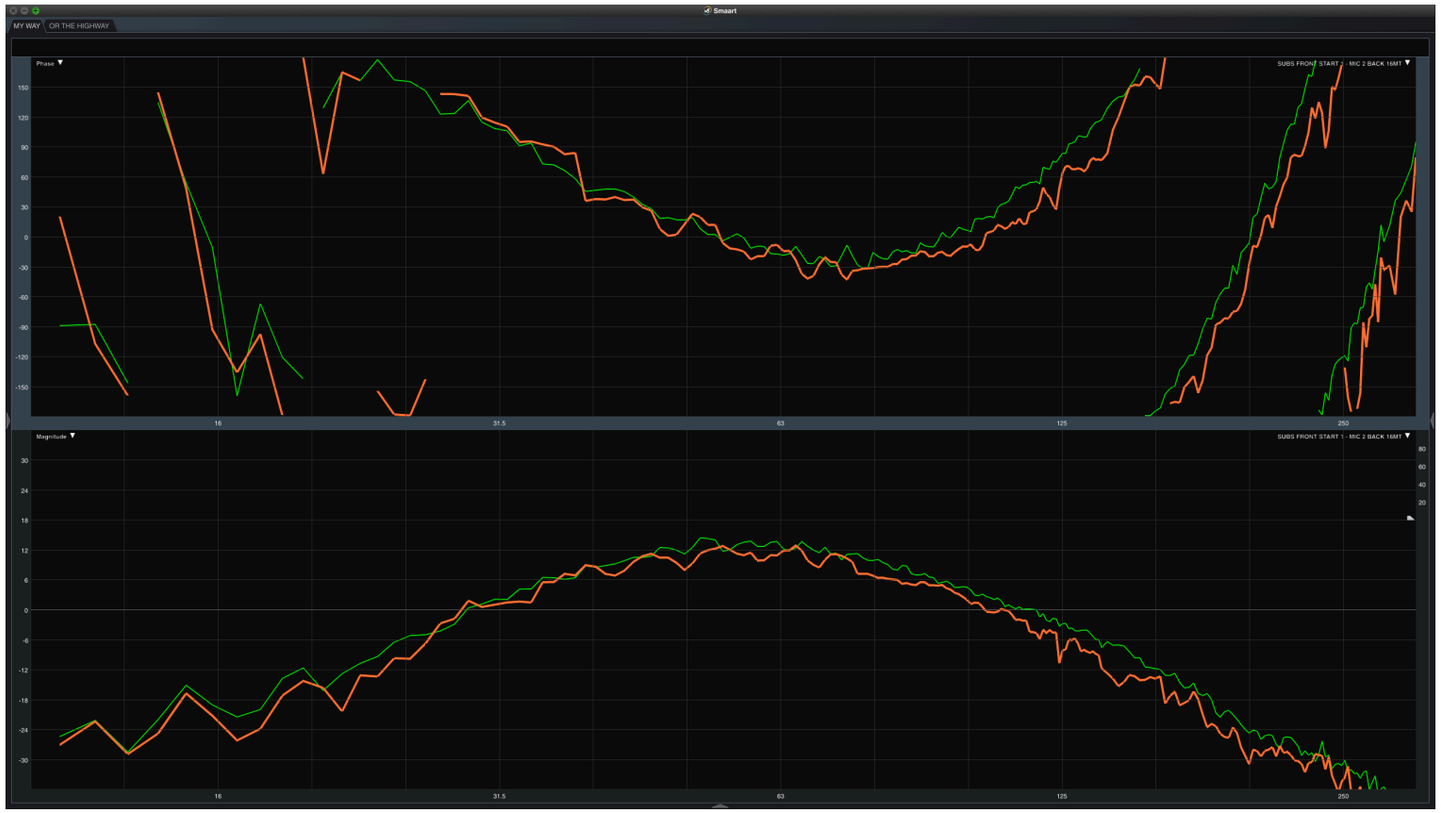
Sub 1
Time: +3ms
ø
in time but
180º out of phase
@ the *Back*



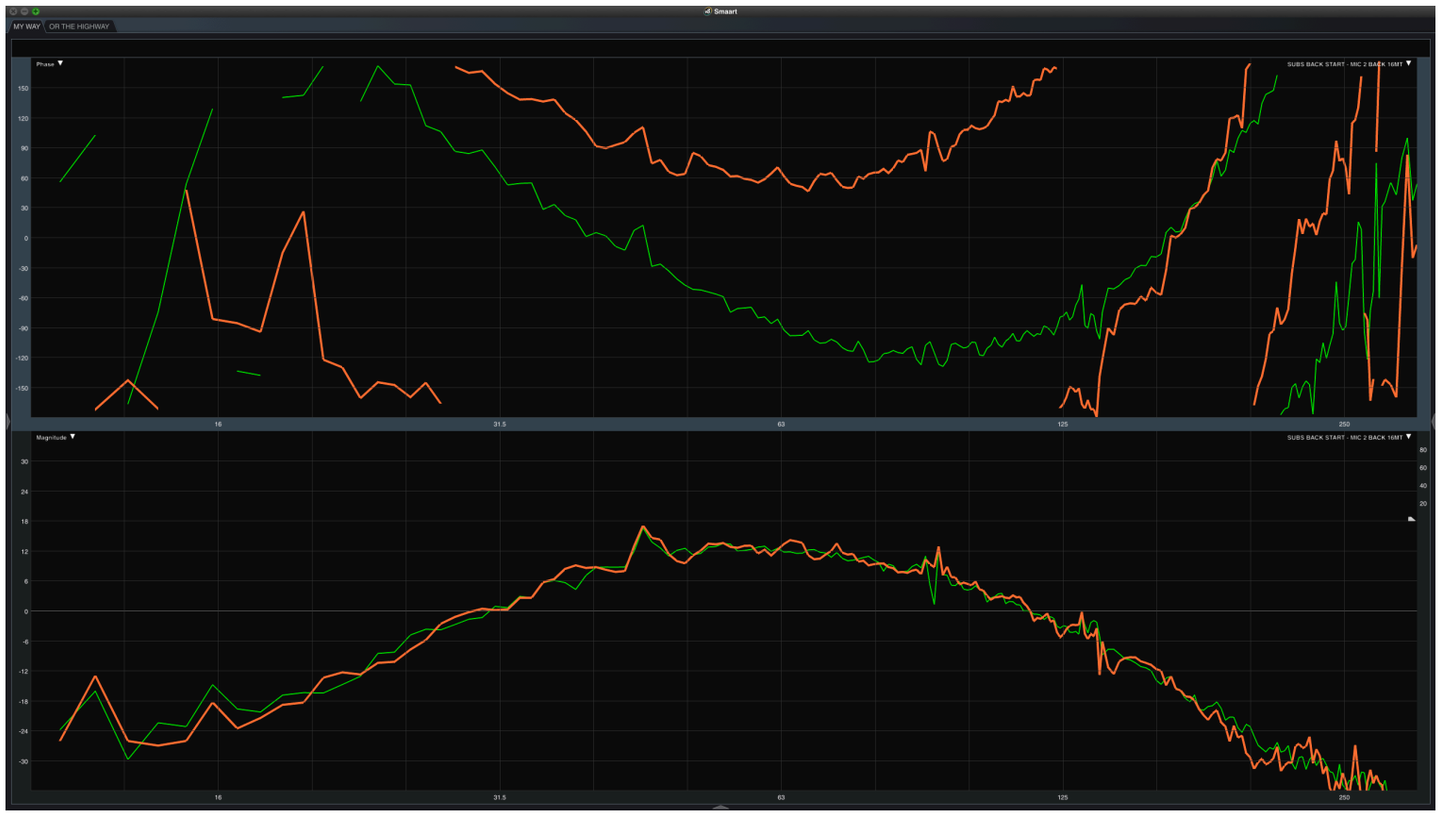
1mt

Sub 2
Time: 0ms

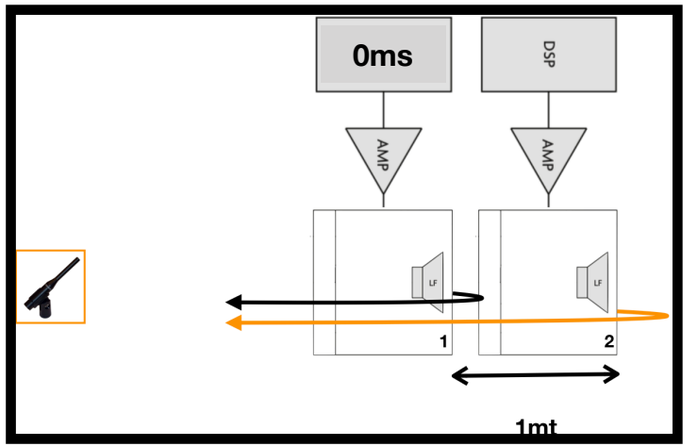
Sub 1 is late to Sub 2
by 6ms measured
@ the *Front*



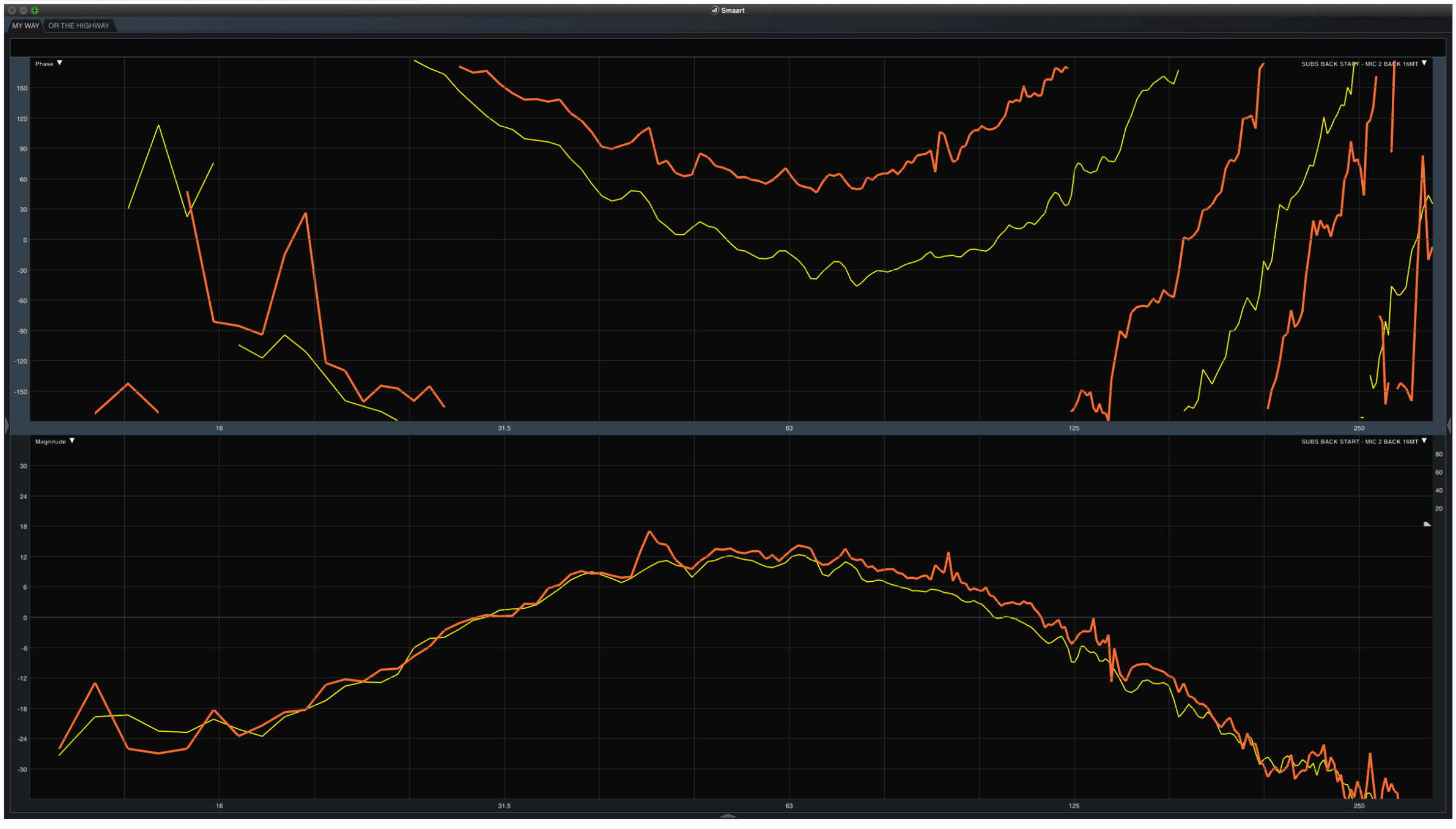
SUBS FRONT START
FRONT MIC Green @16MT
BACK MIC Orange @16MT

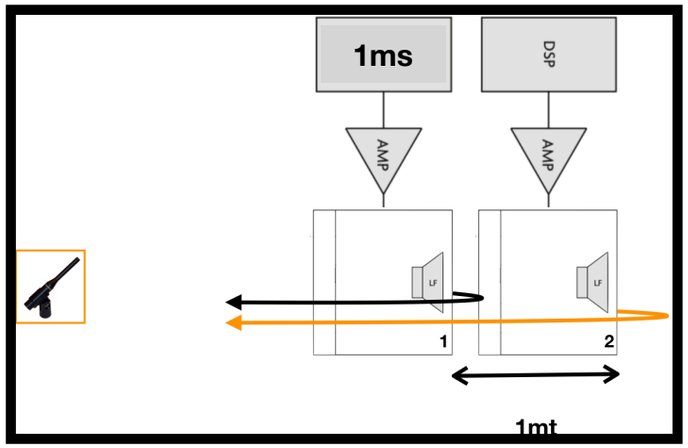


SUBS BACK START
FRONT MIC Green @16MT
BACK MIC Orange @16MT



SUB FRONT 2 (Yellow) vs SUB BACK 1 (Orange) BACK MIC
SUB BACK 1 Needs to be phase aligned via delay to SUB 2
measured at the back of the array





SUB BACK 1 (Orange) + 1ms vs SUB FRONT 2 (Yellow) BACK MIC

Smaart

MY WAY | OR THE HIGHWAY

Phase

SUB BACK 1MS - MIC 2 BACK 16MT

150 120 90 60 30 0 -30 -60 -90 -120 -150

16 31.5 63 125 250

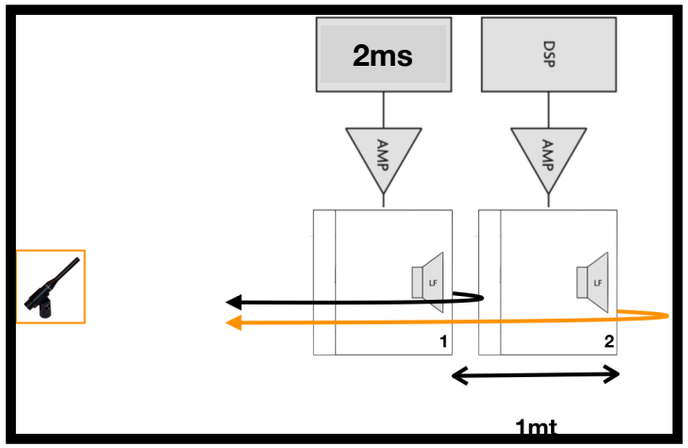
Magnitude

SUB BACK 1MS - MIC 2 BACK 16MT

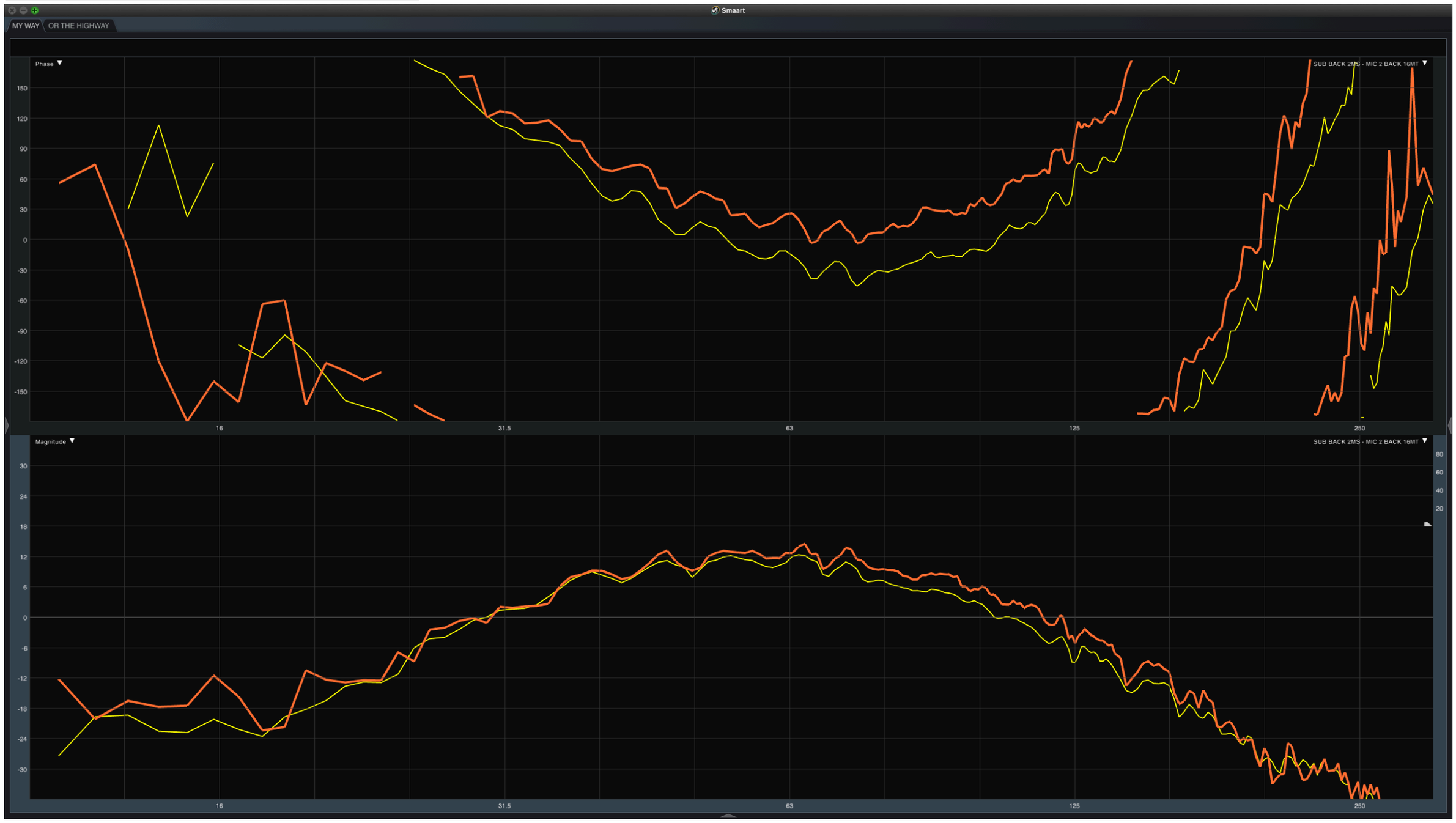
30 24 18 12 6 0 -6 -12 -18 -24 -30

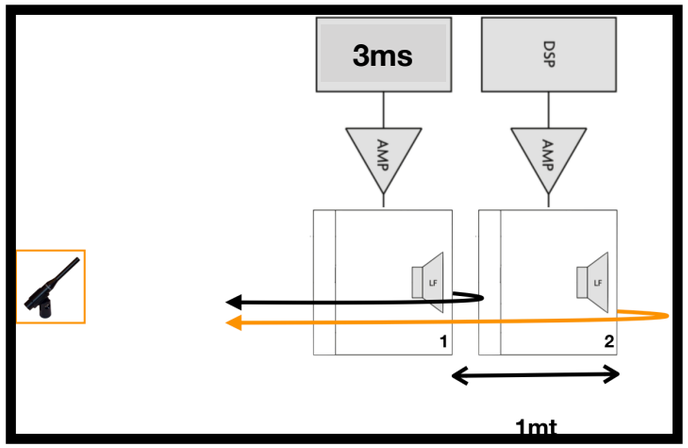
80 60 40 20

16 31.5 63 125 250

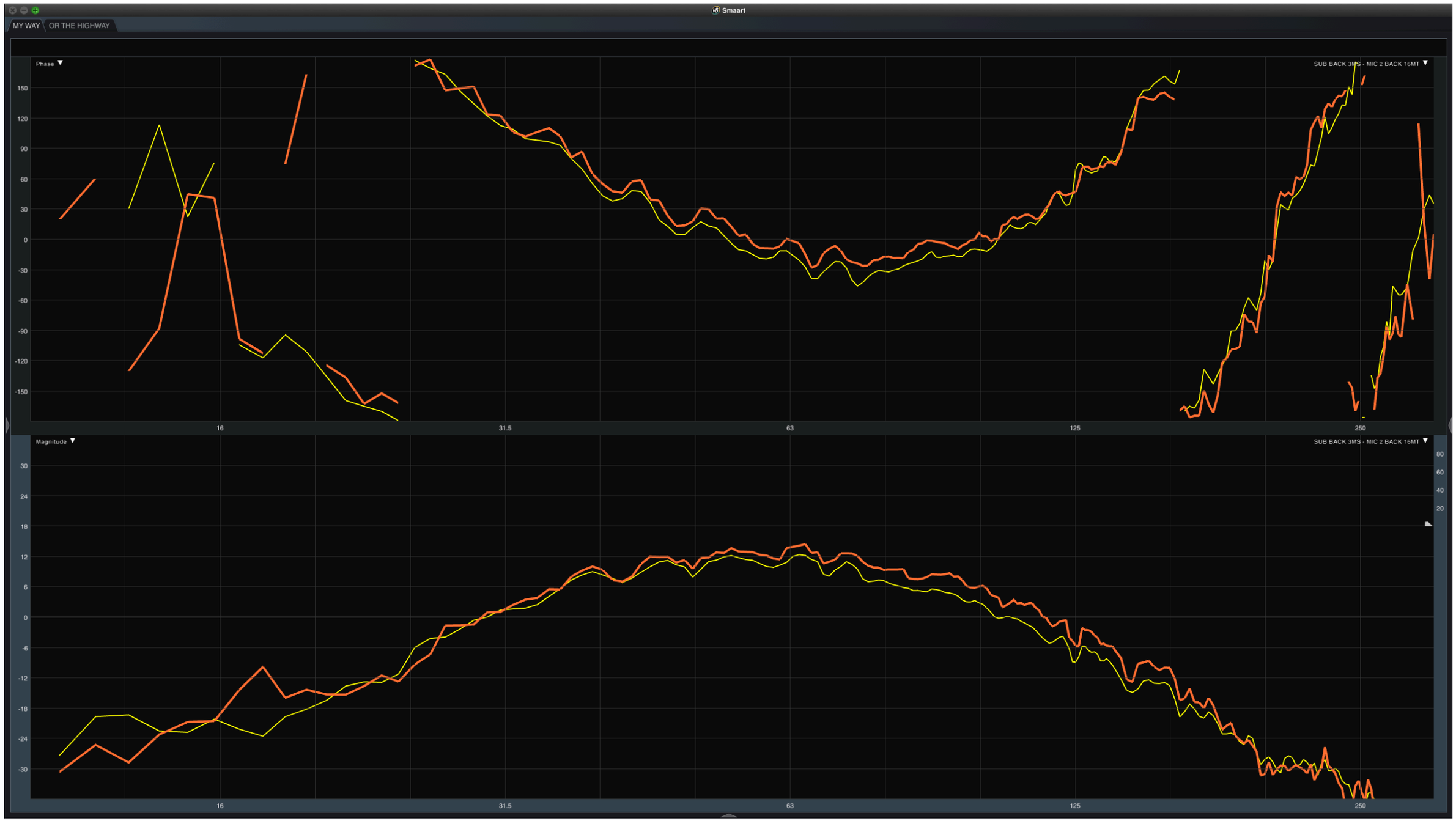


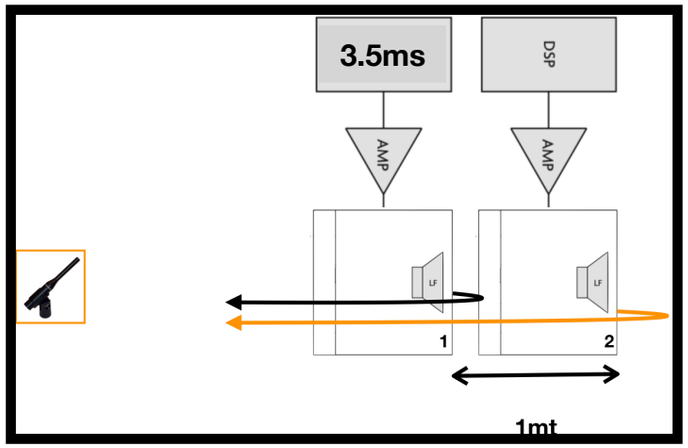
SUB BACK 1 (Orange) + 2ms vs SUB FRONT 2 (Yellow) BACK MIC



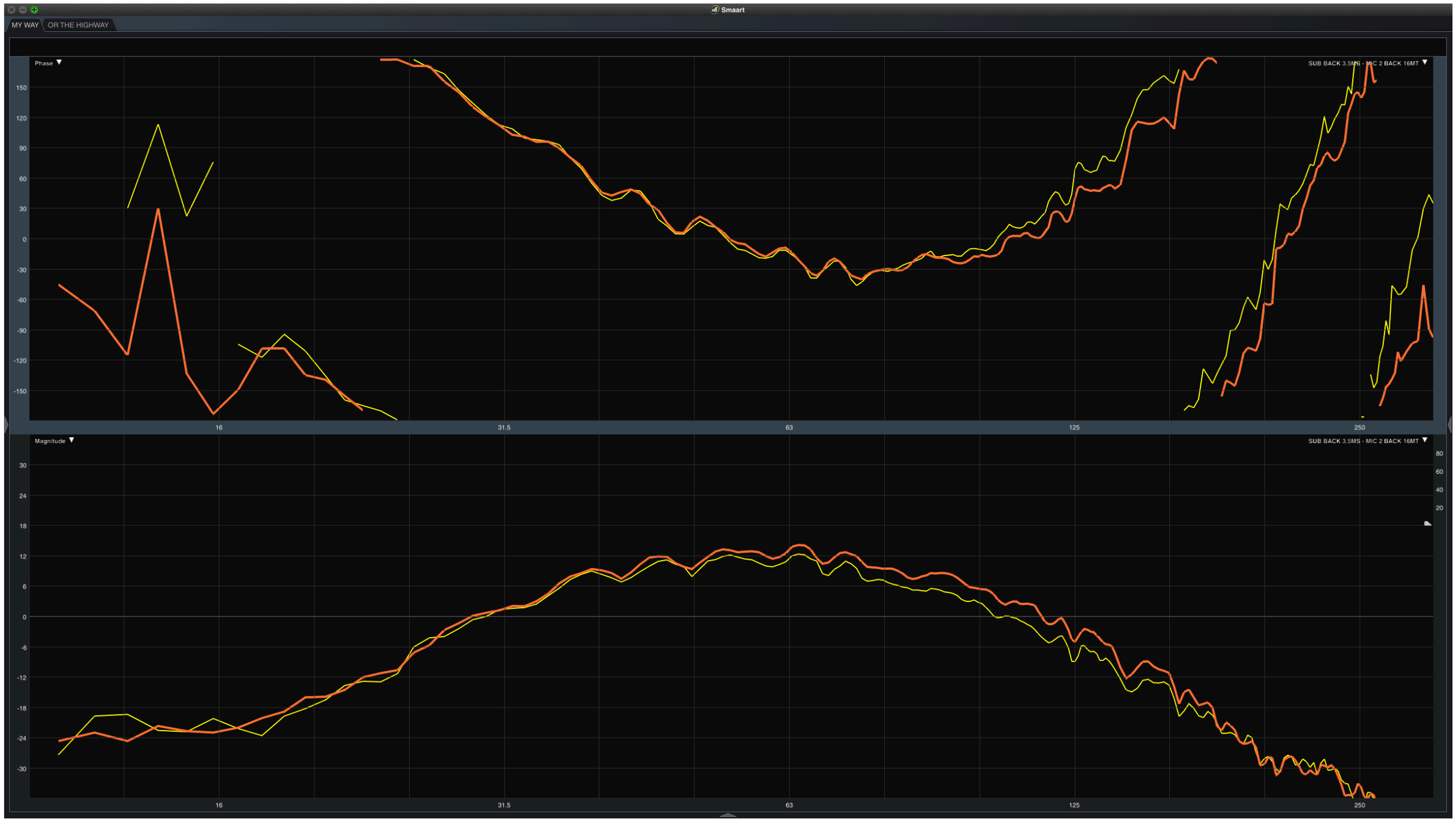


SUB BACK 1 (Orange) + 3ms vs SUB FRONT 2 (Yellow) BACK MIC

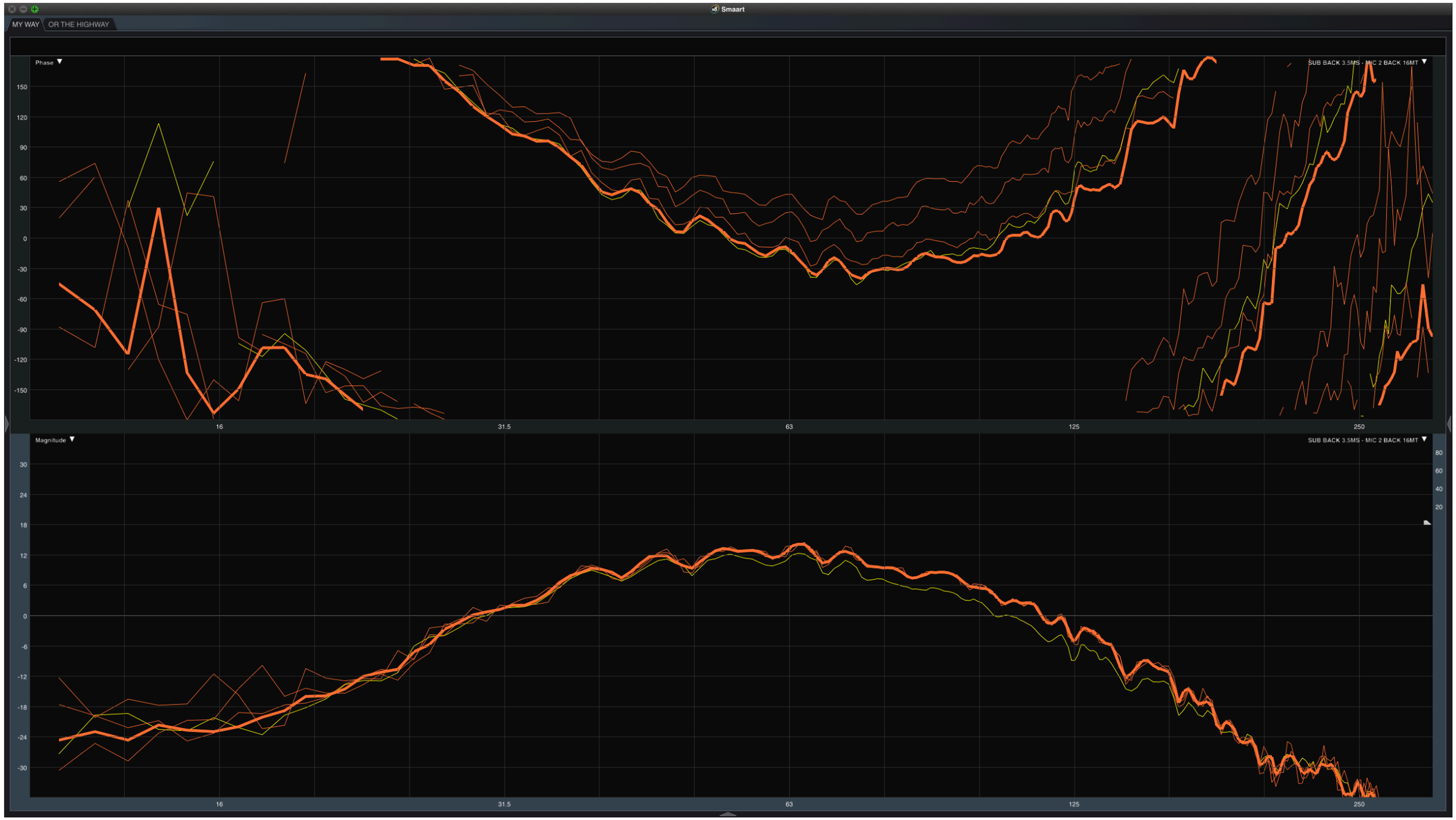


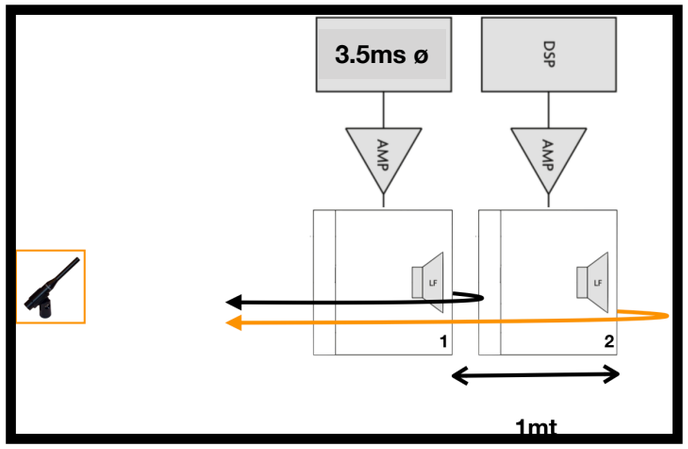


SUB BACK 1 (Orange) + 3.5ms vs SUB FRONT 2 (Yellow) BACK MIC

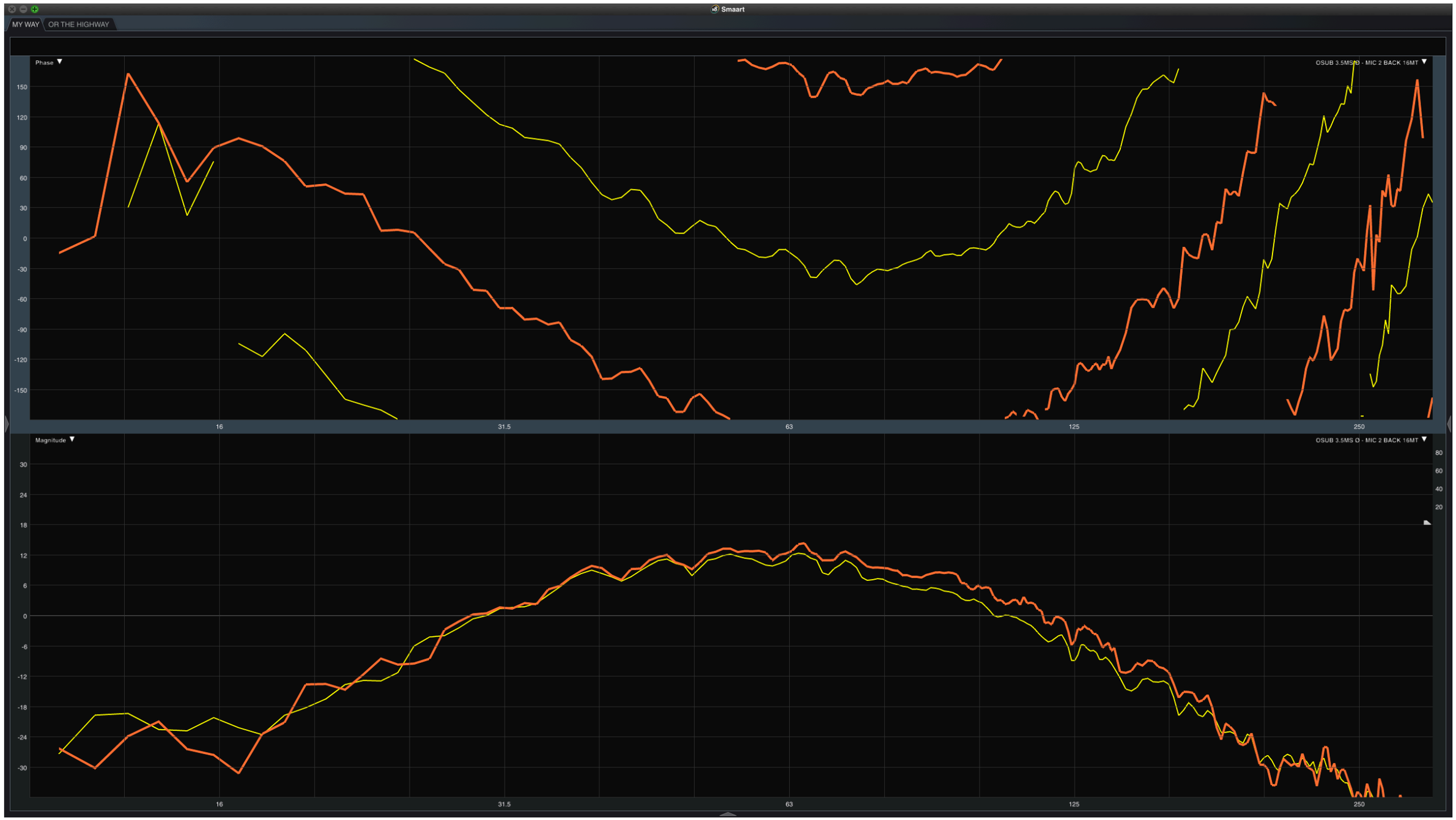


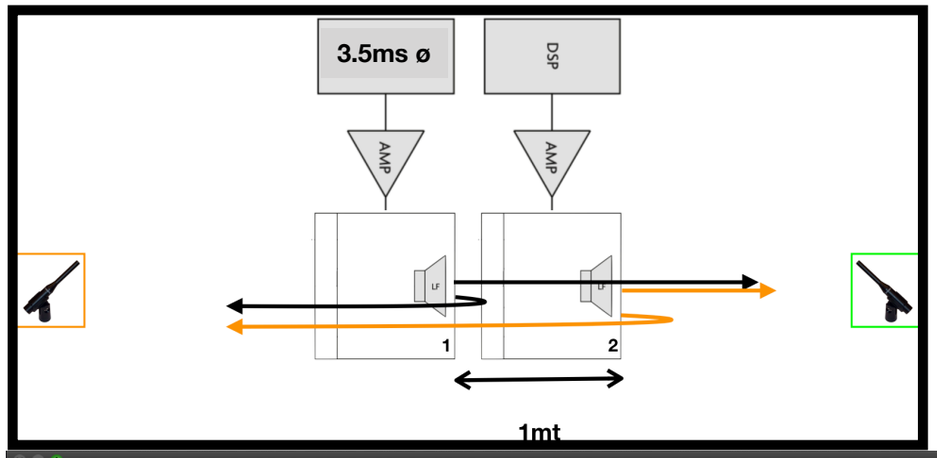
SUB BACK 1 (Orange) ALL TRACES WITH DELAY ADDED
vs SUB FRONT 1 (Yellow)
BACK MIC





SUB BACK 1 (Orange) + 3.5ms Ø
vs SUB FRONT 2 (Yellow)
BACK MIC





ALL SUBS SUMMED
FRONT MIC Green
BACK MIC Orange

Smaart

MY WAY | OR THE HIGHWAY

Phase

SUB FRONT + BACK FINAL FM BM - MIC FRONT 16MT

150 120 90 60 30 0 -30 -60 -90 -120 -150

16 31.5 63 125 250

Magnitude

SUB FRONT + BACK FINAL FM BM - MIC FRONT 16MT

30 24 18 12 6 0 -6 -12 -18 -24 -30

80 60 40 20

16 31.5 63 125 250

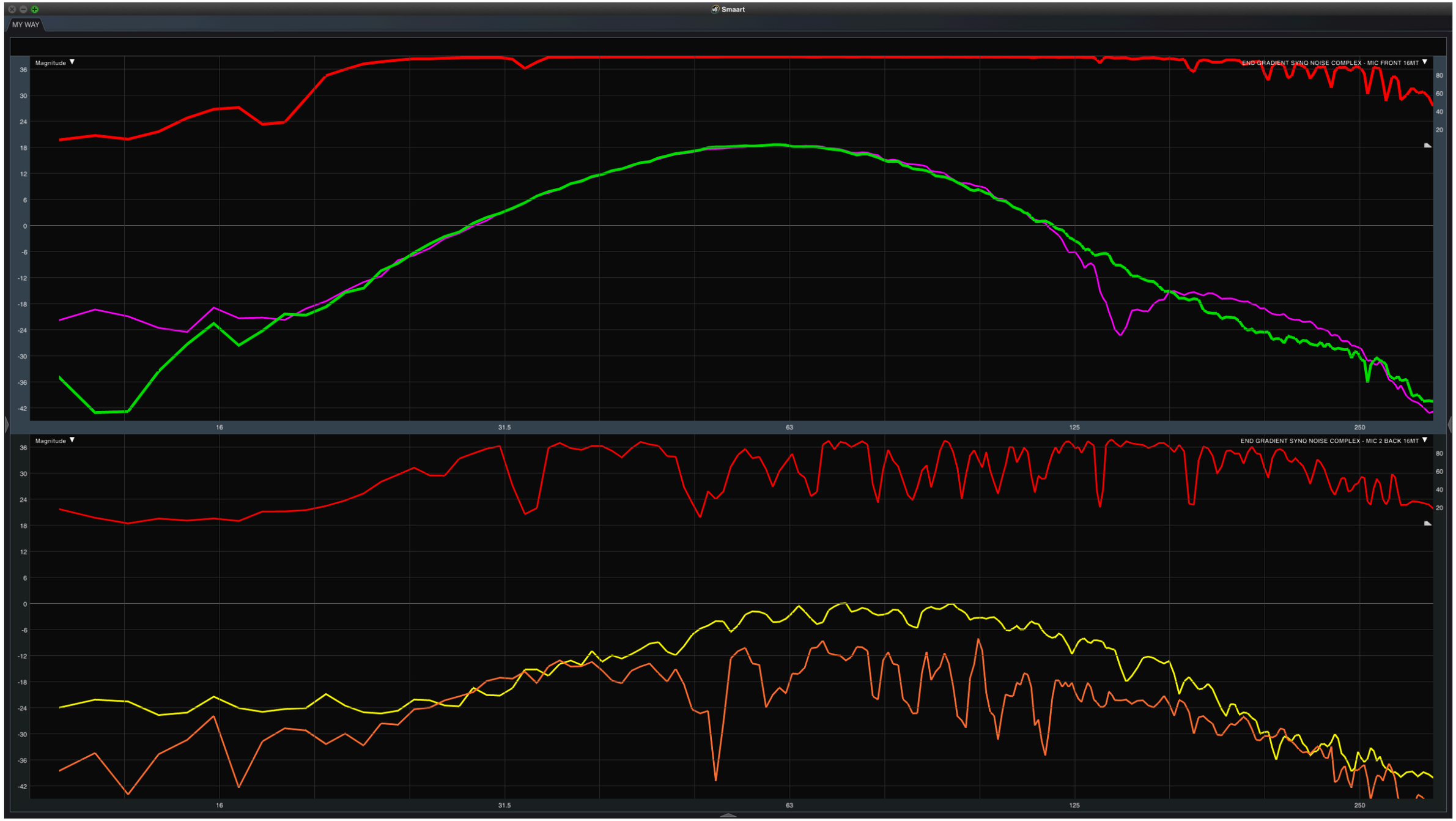
Is there a better way? (read different).

Yes
A word of caution though:
It can only be done via measurements
and keep away from the limiters to avoid “cardioid implosion”

By introducing a little time offset (1ms) / gain (0.7dB) / EQ and a filter combination you can get more reduction at the back.

I only explain this during a sub woofer training sorry ;-)

Green : Gradient Freak Show Front mic
Pink : Gradient delay version Front mic
Orange : Gradient Freak Show Back mic
Yellow : Gradient delay version Back mic



Green : Gradient Freak Show Front mic
Pink : Gradient delay version Front mic
Orange : Gradient Freak Show Back mic
Yellow : Gradient delay version Back mic