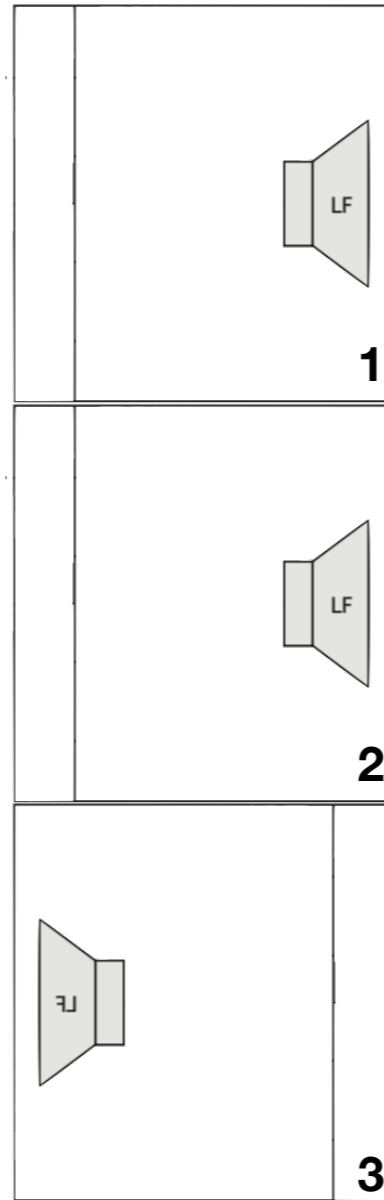


BACK FRONT FRONT / CSA

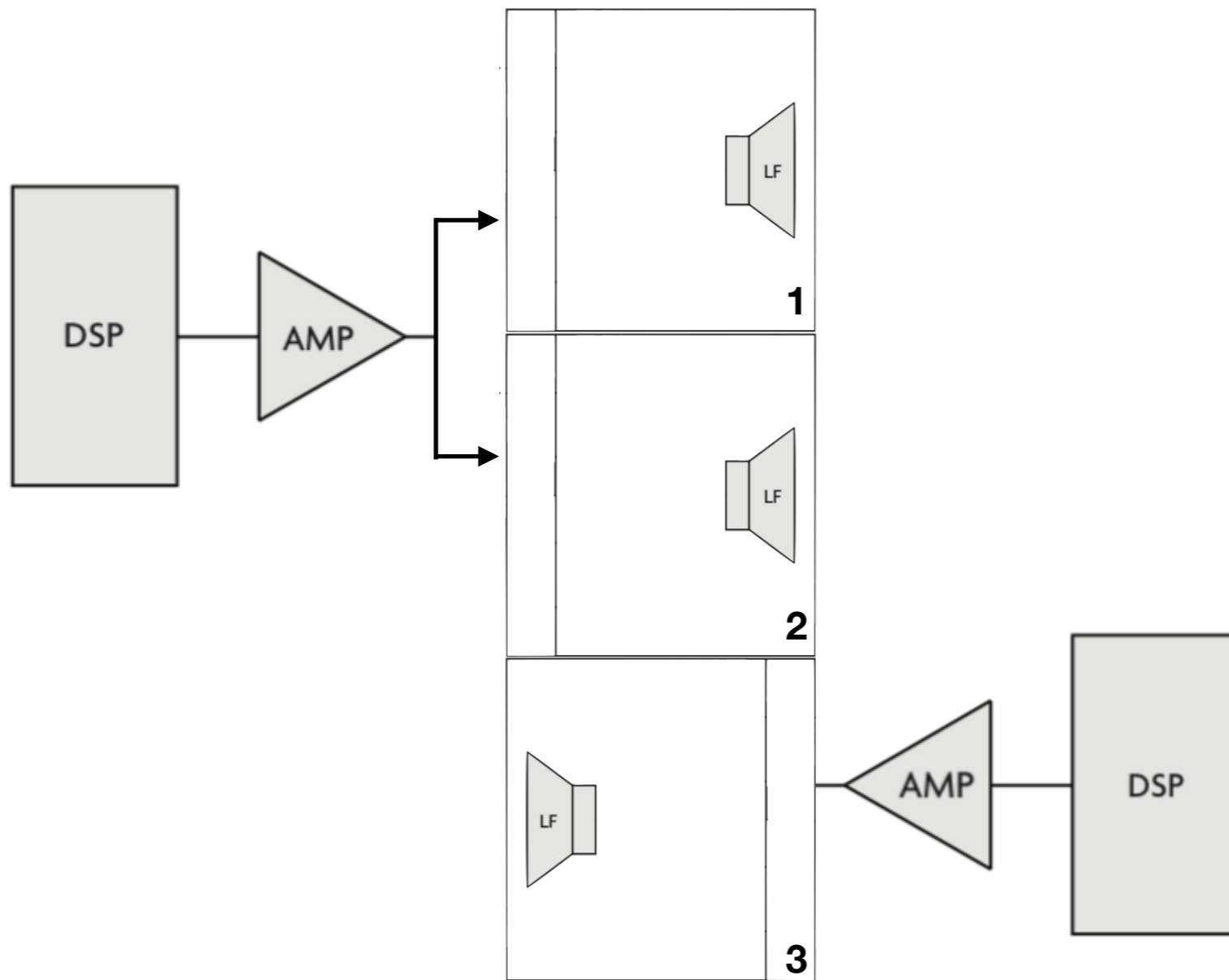


Back

Front/audience

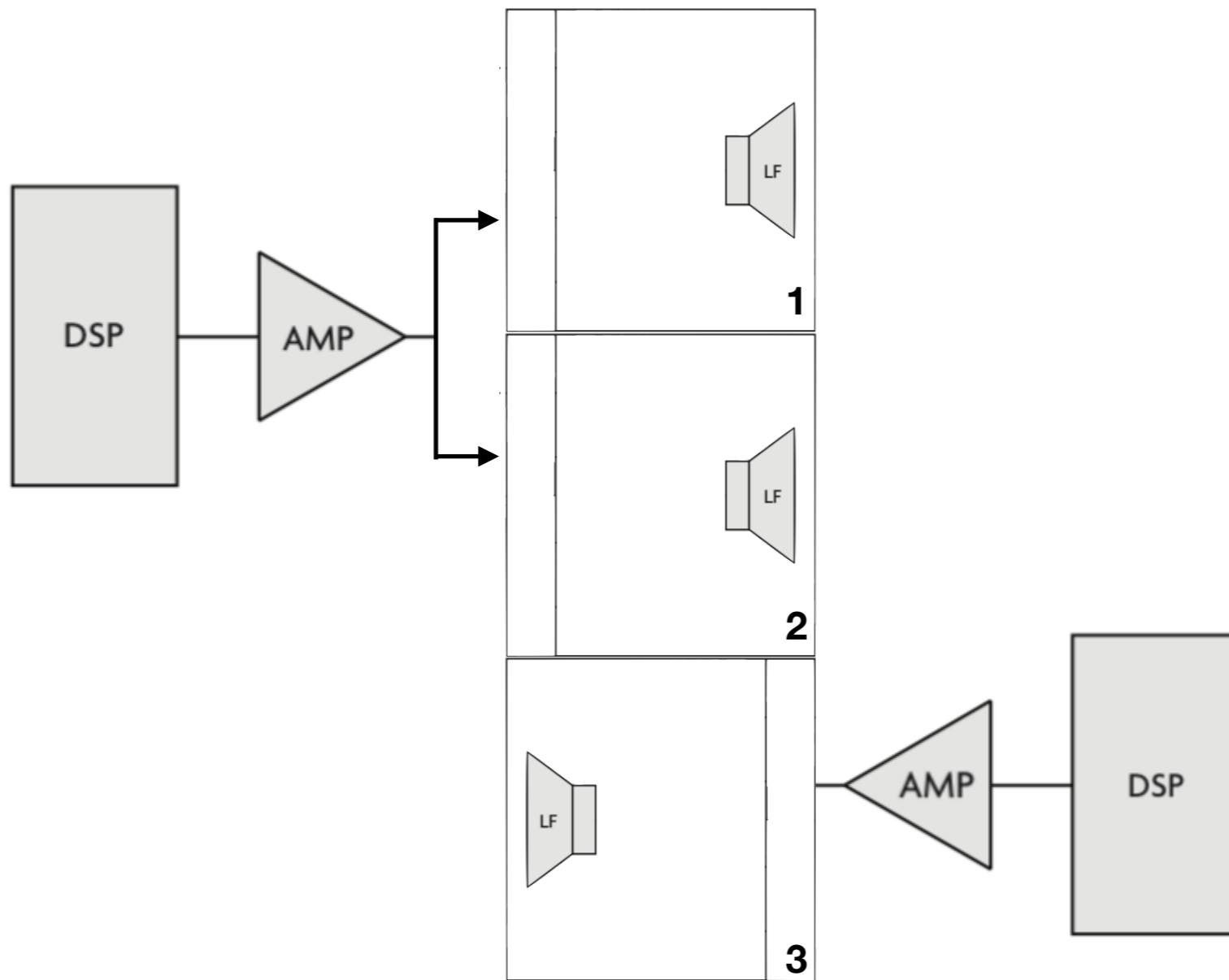


Back



Front/audience

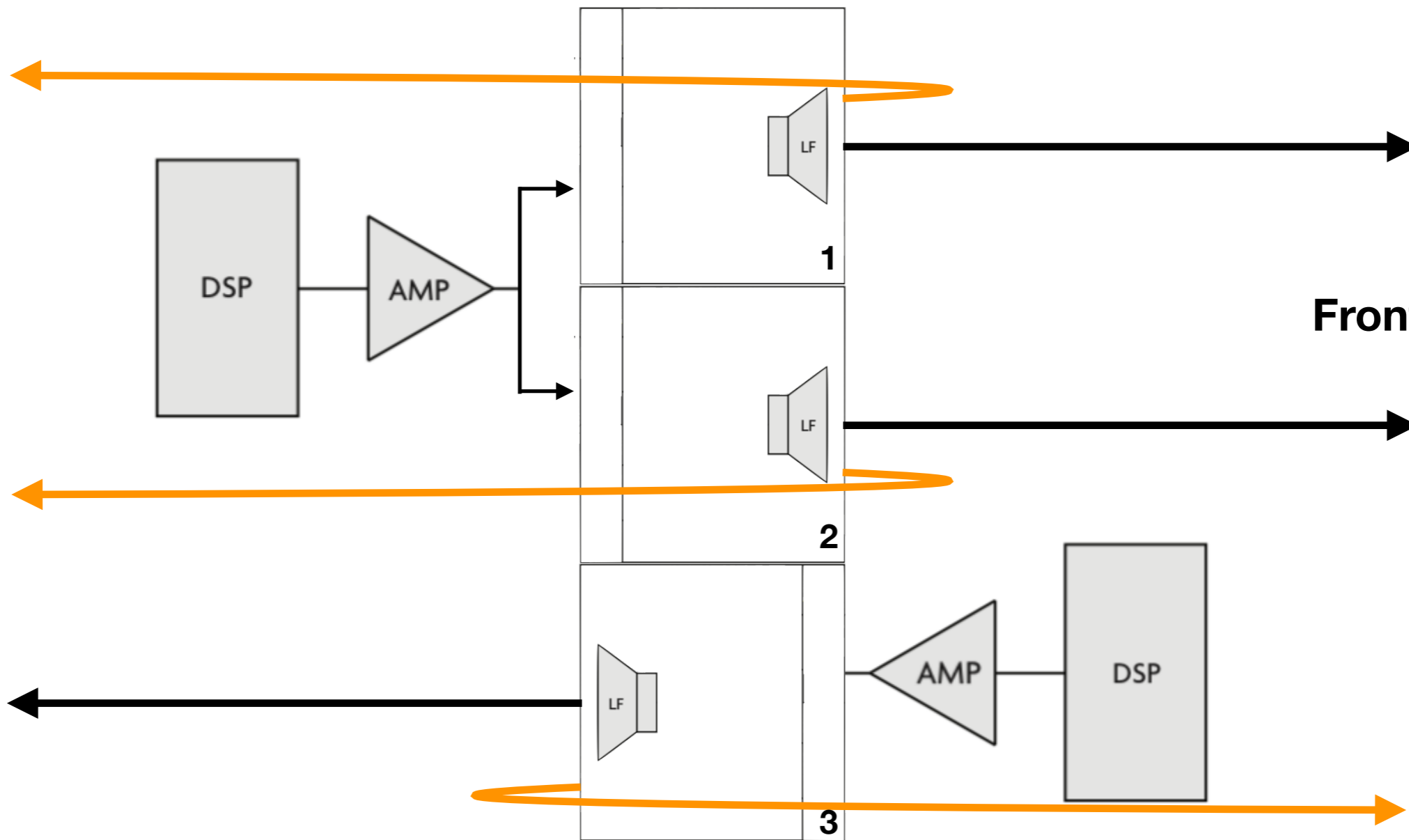
Back



Front/audience



Back



1

2

3

DSP

AMP

LF

LF

LF

AMP

DSP

Front/audience



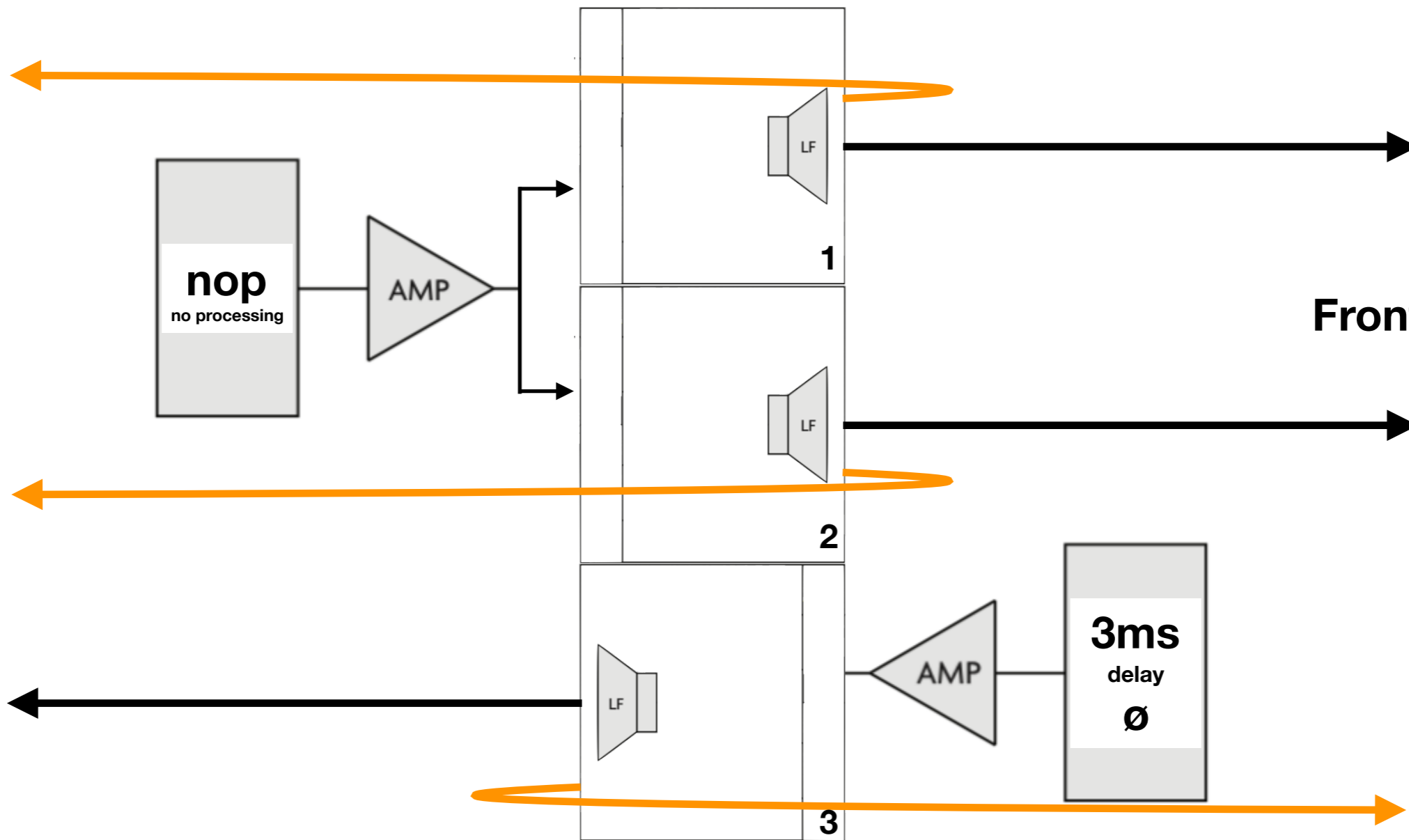
The Idea behind it:

By adding delay to SUB 3 the phase response of SUB 3 needs to be matched to the Phase response of SUB 1+2 measured @ **The Back of the array.**

As soon as SUB 3 matches the phase of SUB 1+2 you'll see addition at the back.

Because you want to reduce levels at the back reverse polarity on SUB 3 (\emptyset)

Back

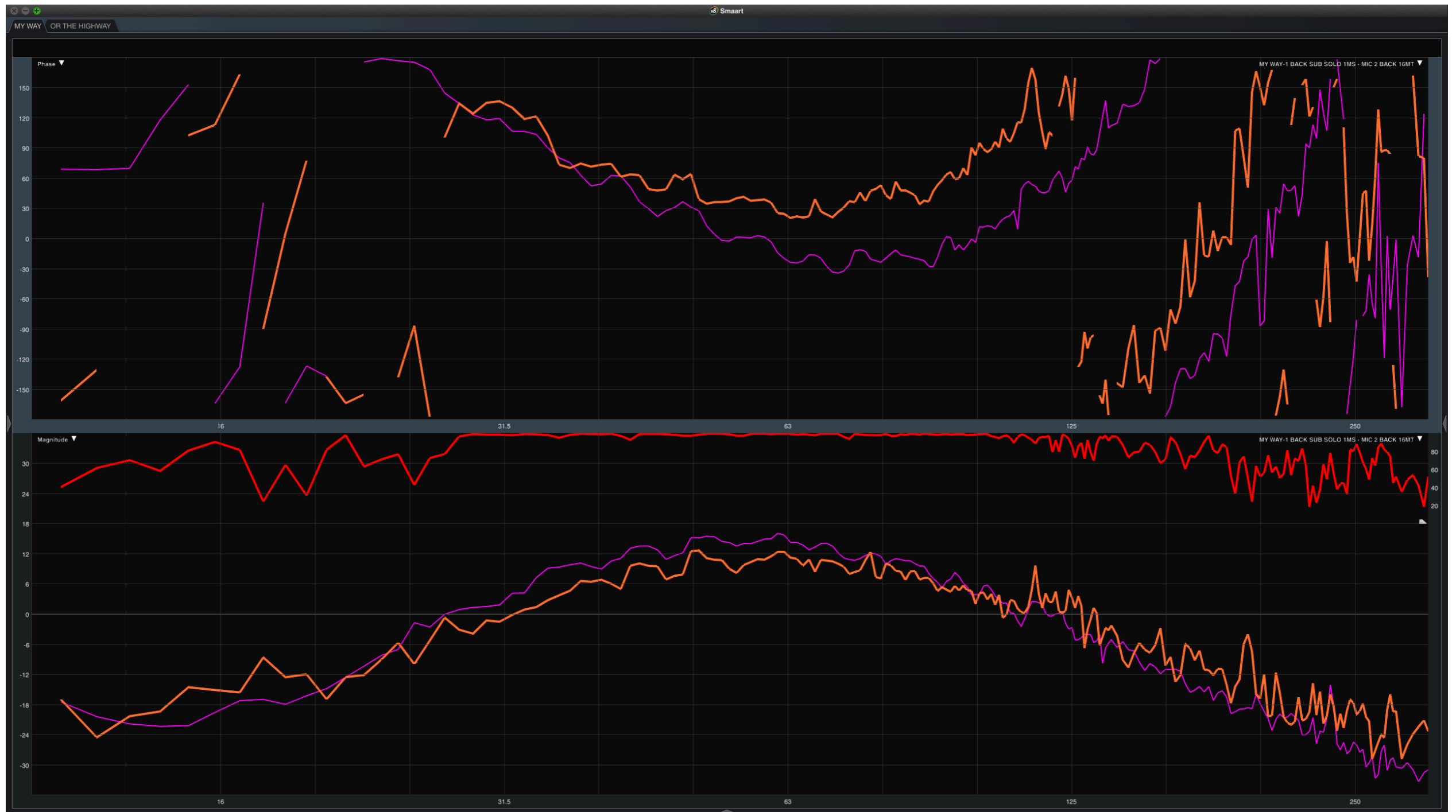


Front/audience

So how does this all look in Smart 8.4

Orange Sub (3) back Back mic +1ms delay

Pink Subs front (1+2) Back mic (> reference phase alignment Sub 3)



MIC FRONT 16MT

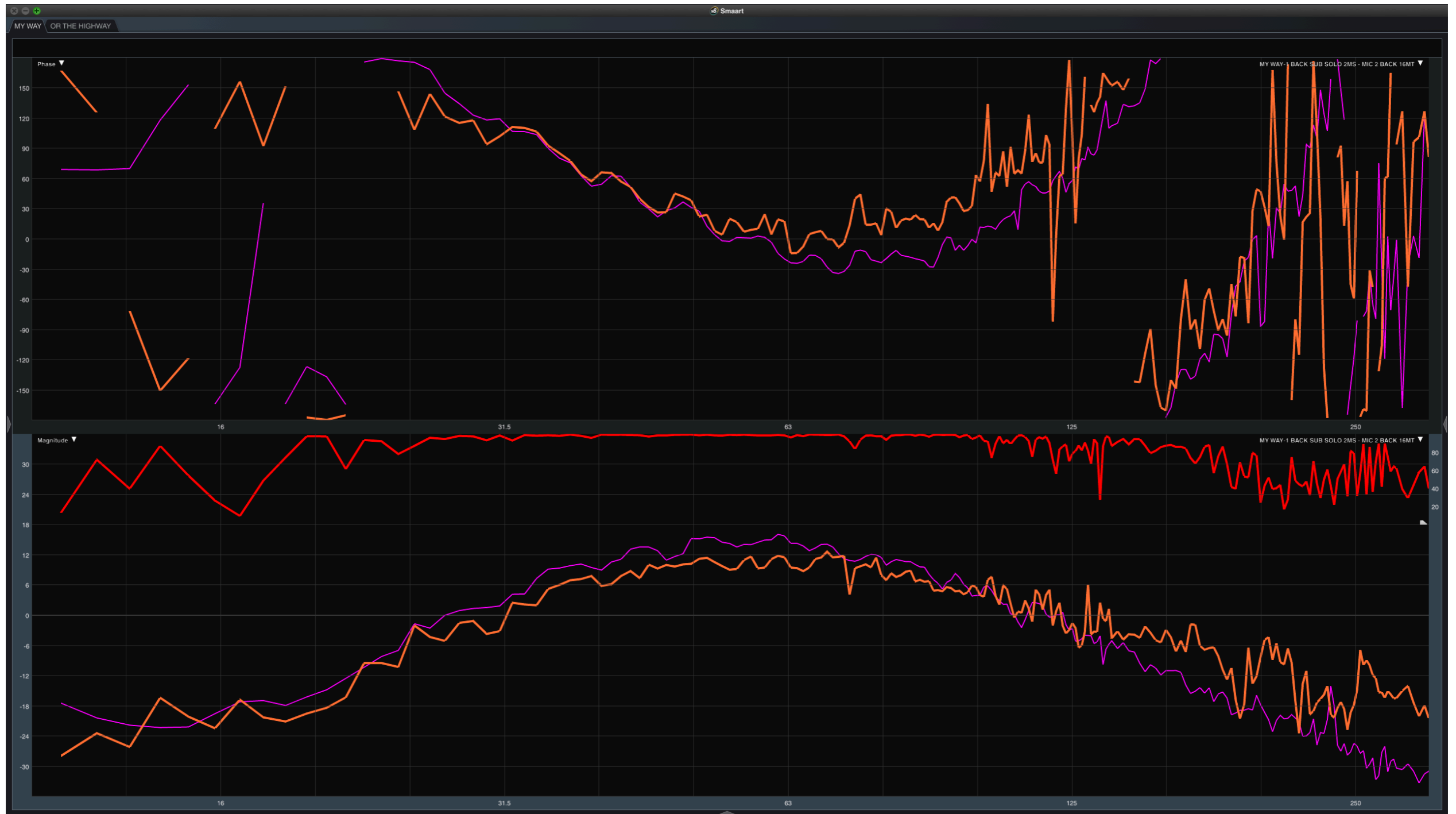
M R 66.77

MIC 2 BACK 16MT

M R 69.21

Orange Sub (3) back Back mic +2ms delay

Pink Subs front (1+2) Back mic (> reference phase alignment Sub 3)

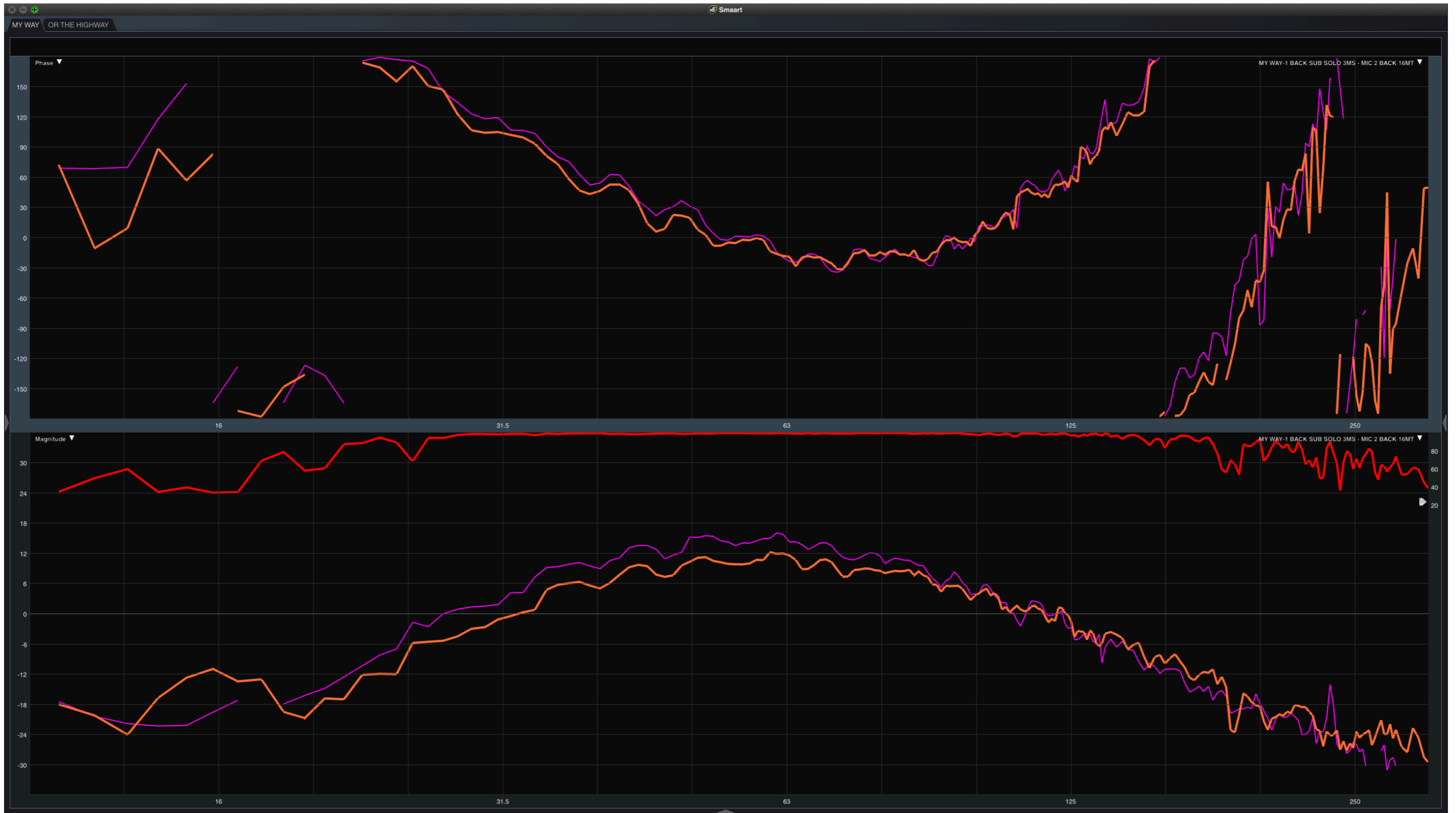


MIC FRONT 16MT ▶
M ██████████ 66.77
R ██████████

MIC 2 BACK 16MT ▶
M ██████████ 69.21
R ██████████

Orange Sub (3) back Back mic +3ms delay match to Sub 1+2

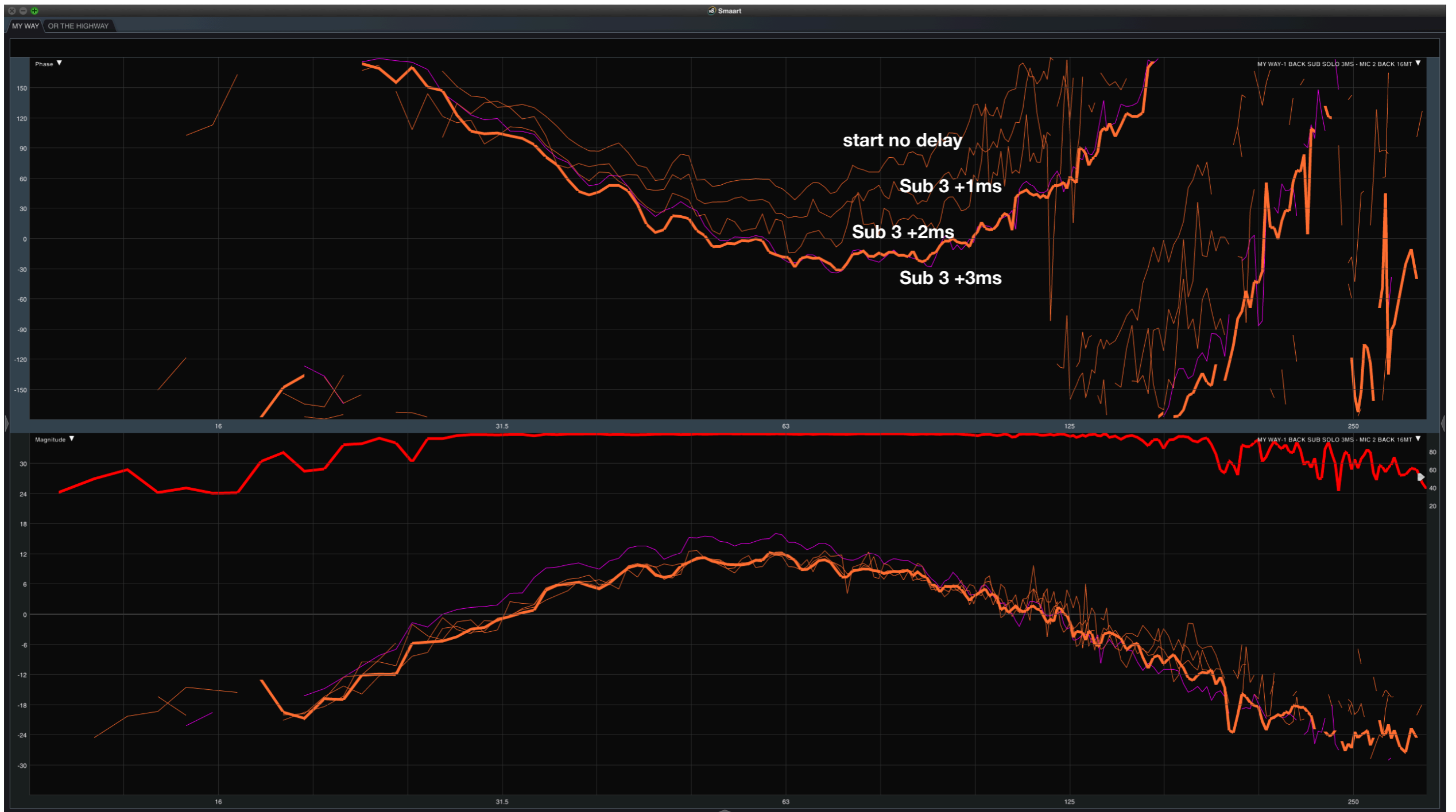
Pink Subs front (1+2) Back mic (> reference phase alignment Sub 3)



● MIC FRONT 16MT ▶
M
R 66.77
● MIC 2 BACK 16MT ▶
M
R 69.21

Orange Sub (3) back Back mic (Start vs 1ms 2ms 3ms)

Pink Subs front (1+2) Back mic (> reference phase alignment Sub 3)



MIC FRONT 16MT

M

R 66.77

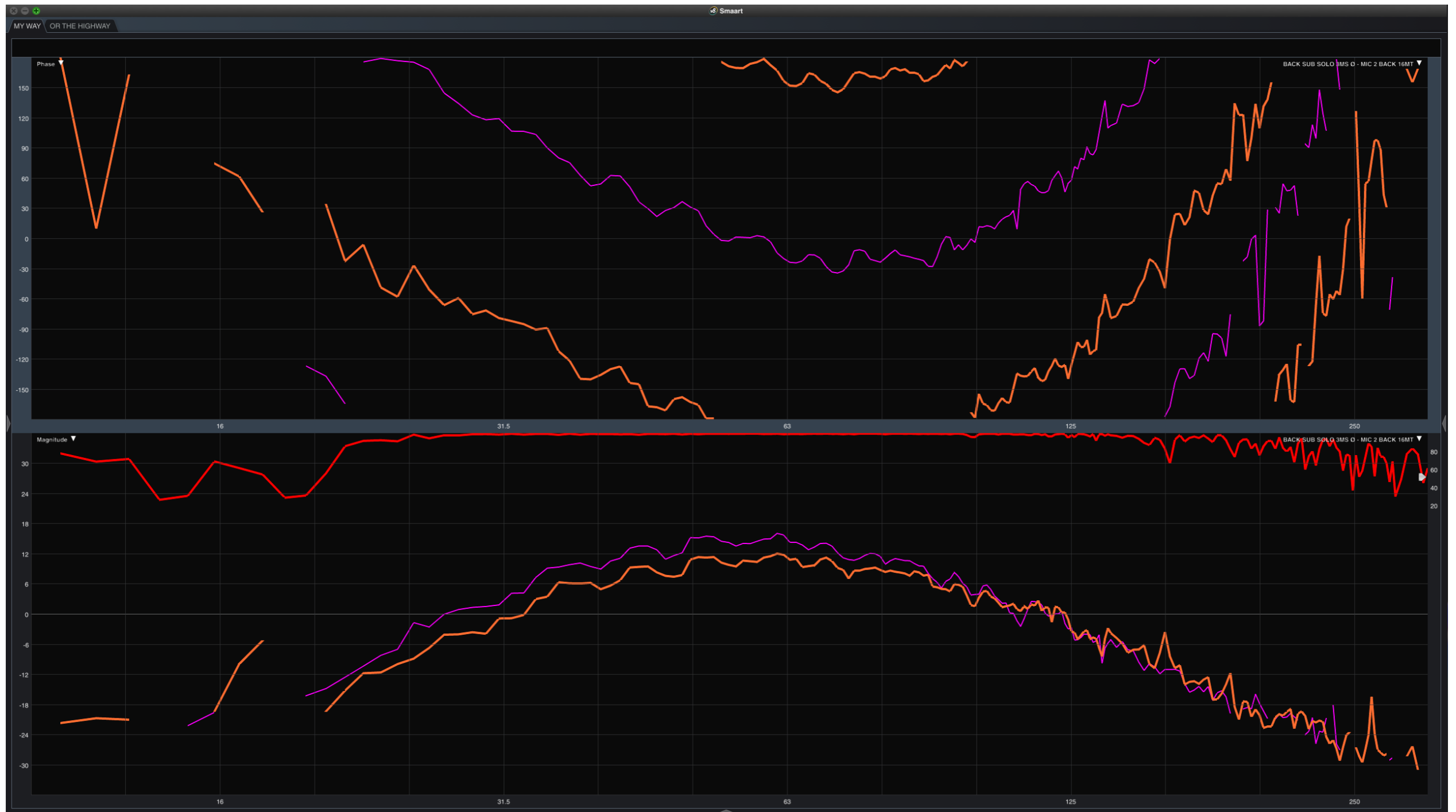
MIC 2 BACK 16MT

M

R 69.21

Oranje Sub (3) back Back mic +3ms delay & ø

Roze Subs front (1+2) Back mic (> reference phase alignment Sub 3)



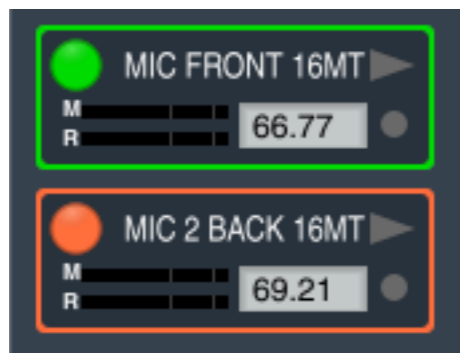
MIC FRONT 16MT
M R 66.77

MIC 2 BACK 16MT
M R 69.21

Done (?)

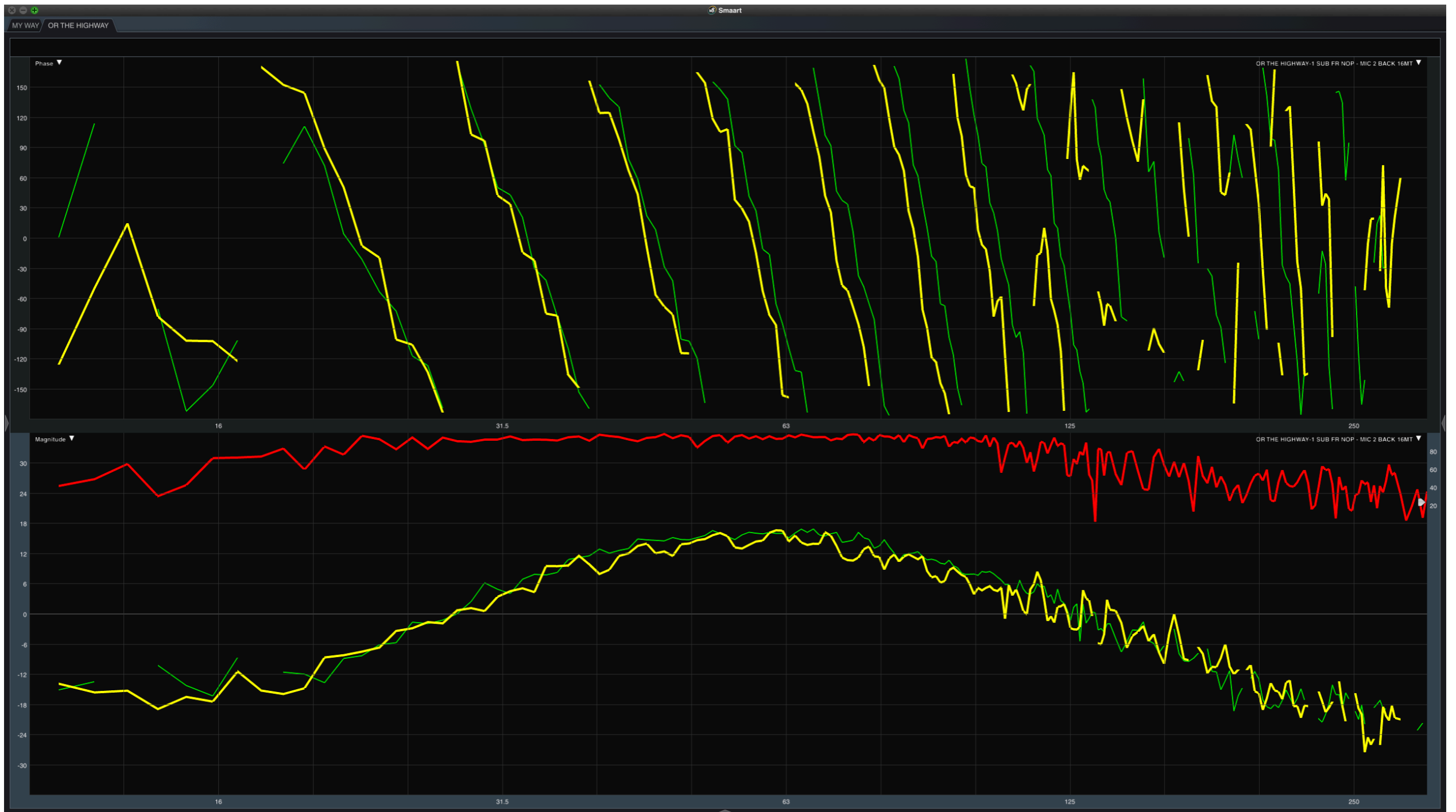


How does this look without synchronising Smart?



Green Subs front Front mic (1+2)

Yellow Subs (1+2) front Back mic (> reference phase alignment Sub 3)



MIC FRONT 16MT

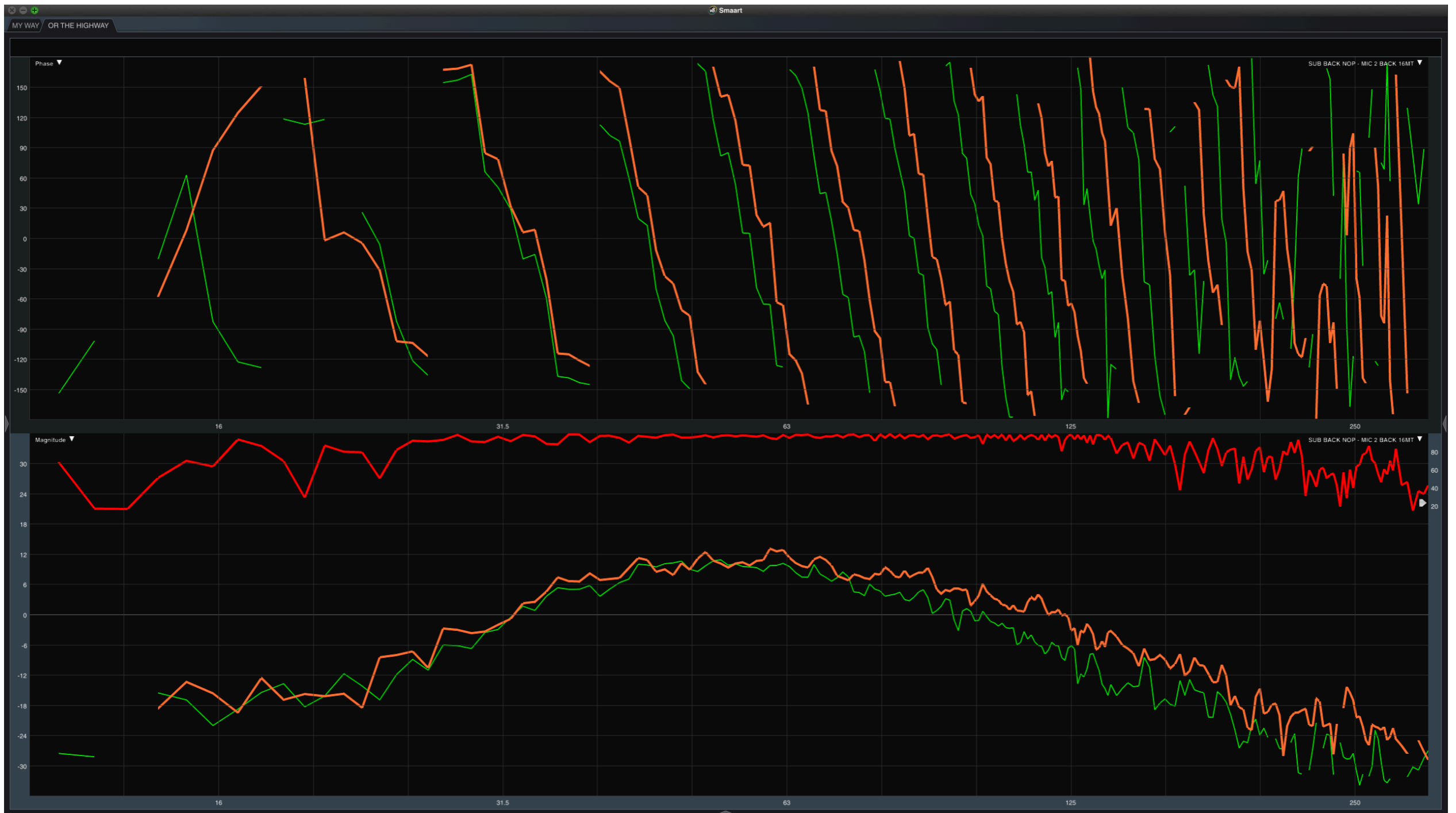
M R 0.00

MIC 2 BACK 16MT

M R 0.00

Green Sub back (3) Front mic

Orange Sub back (3) Back mic

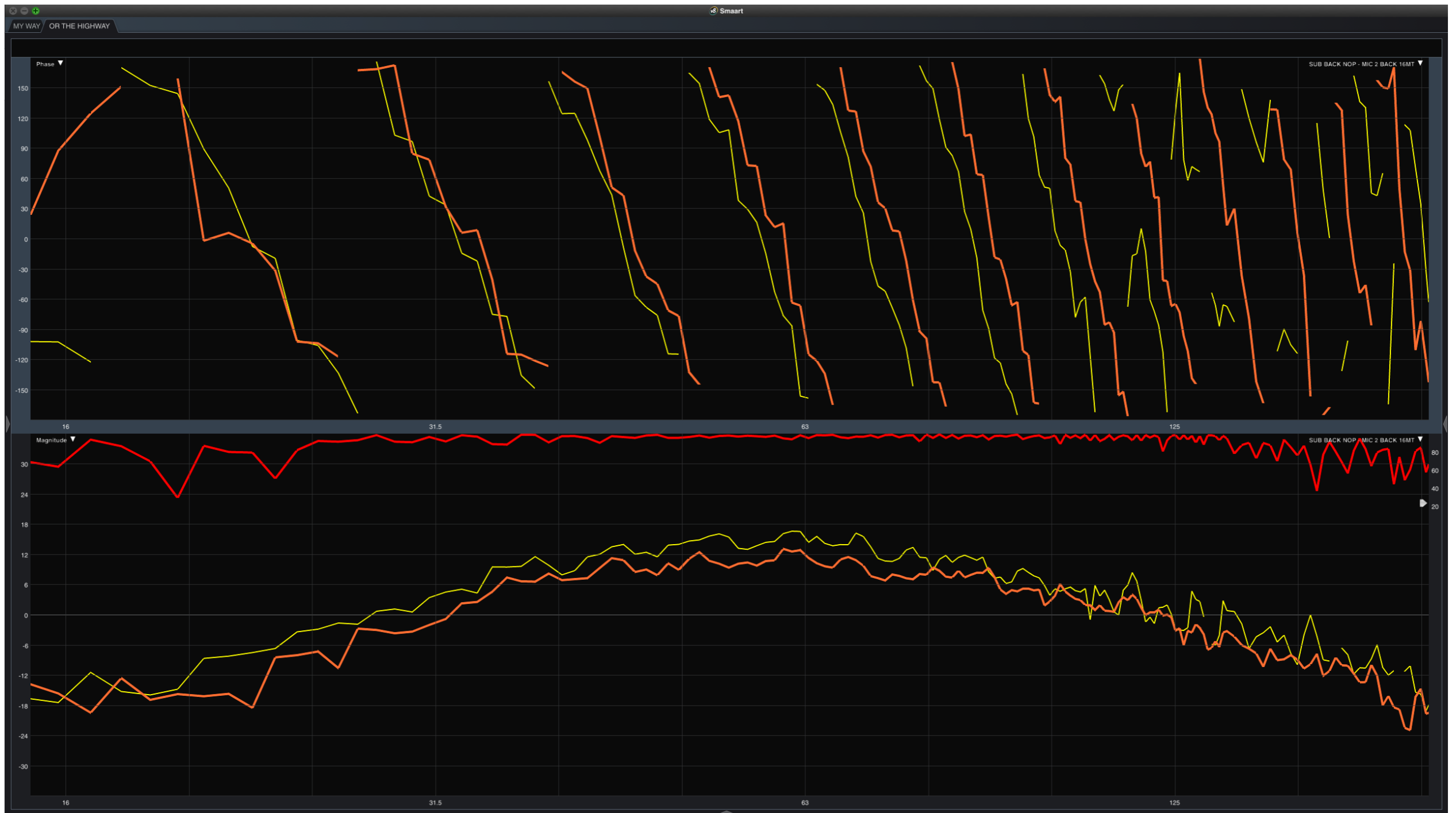


MIC FRONT 16MT
M 0.00
R

MIC 2 BACK 16MT
M 0.00
R

Orange Sub (3) back Back mic

Yellow Subs front (1+2) Back mic (> reference phase alignment Sub 3)

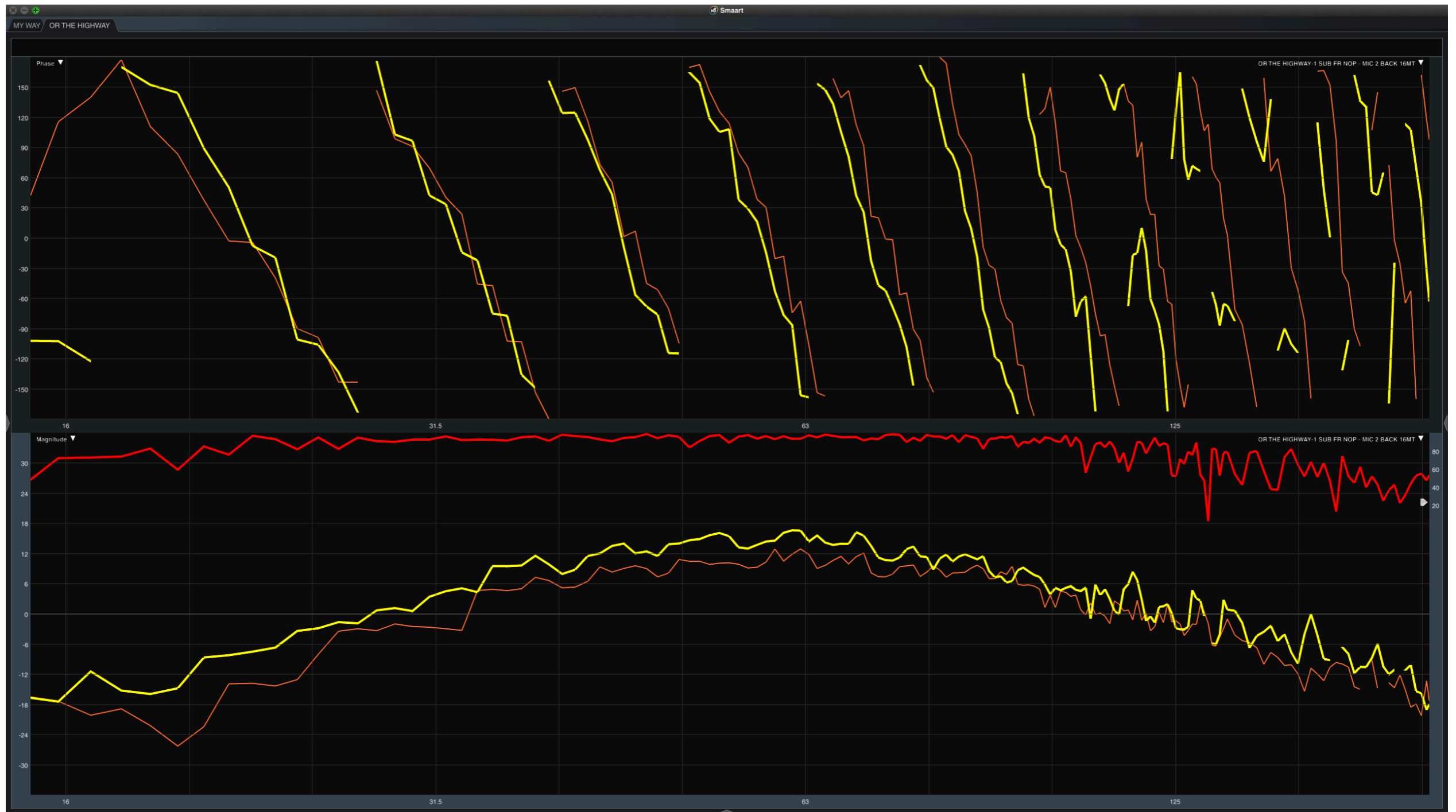


MIC FRONT 16MT
M 0.00
R

MIC 2 BACK 16MT
M 0.00
R

Orange Sub (3) back Back mic +1ms delay

Yellow Subs front (1+2) Back mic (> reference phase alignment Sub 3)

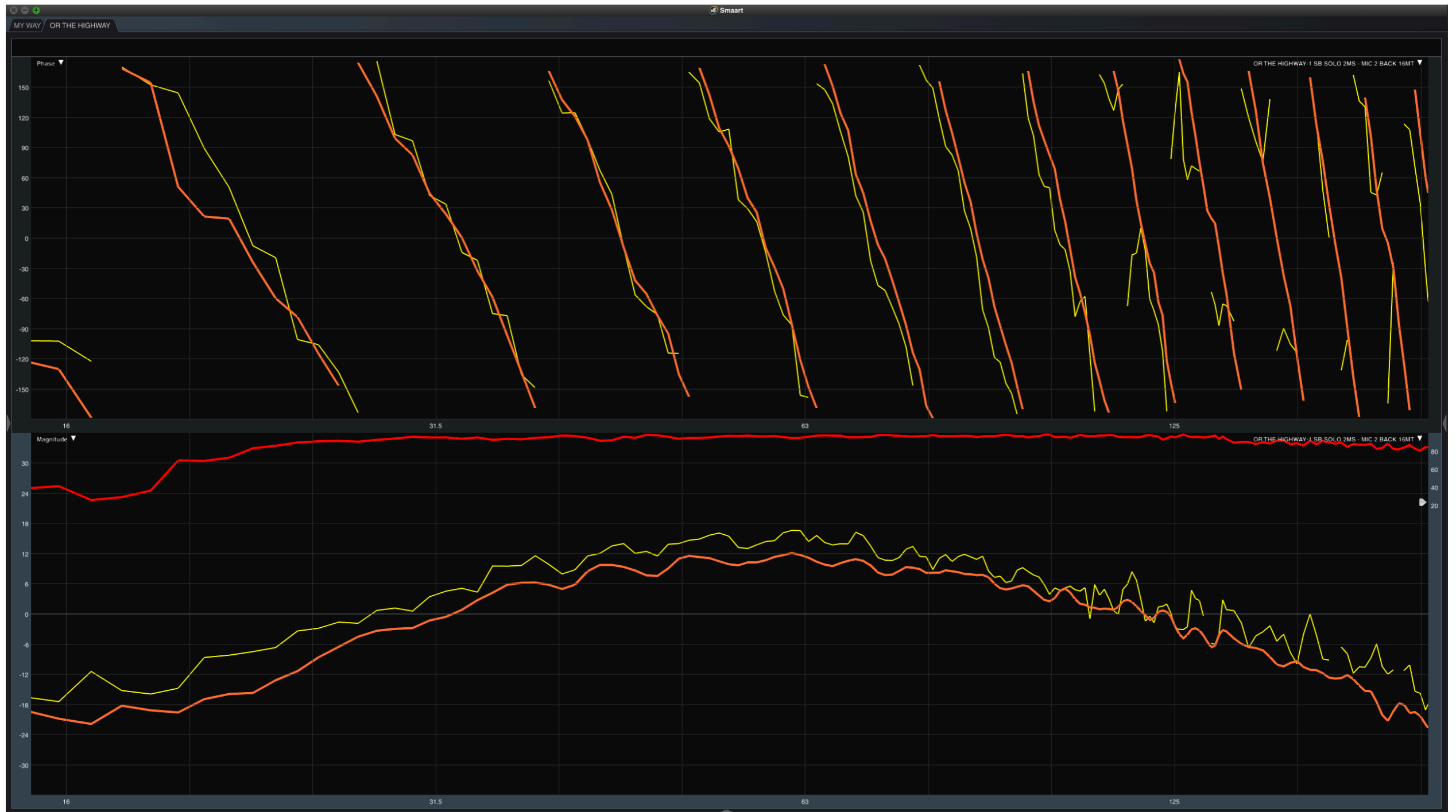


MIC FRONT 16MT
M 0.00
R

MIC 2 BACK 16MT
M 0.00
R

Orange Sub (3) back Back mic +2ms delay

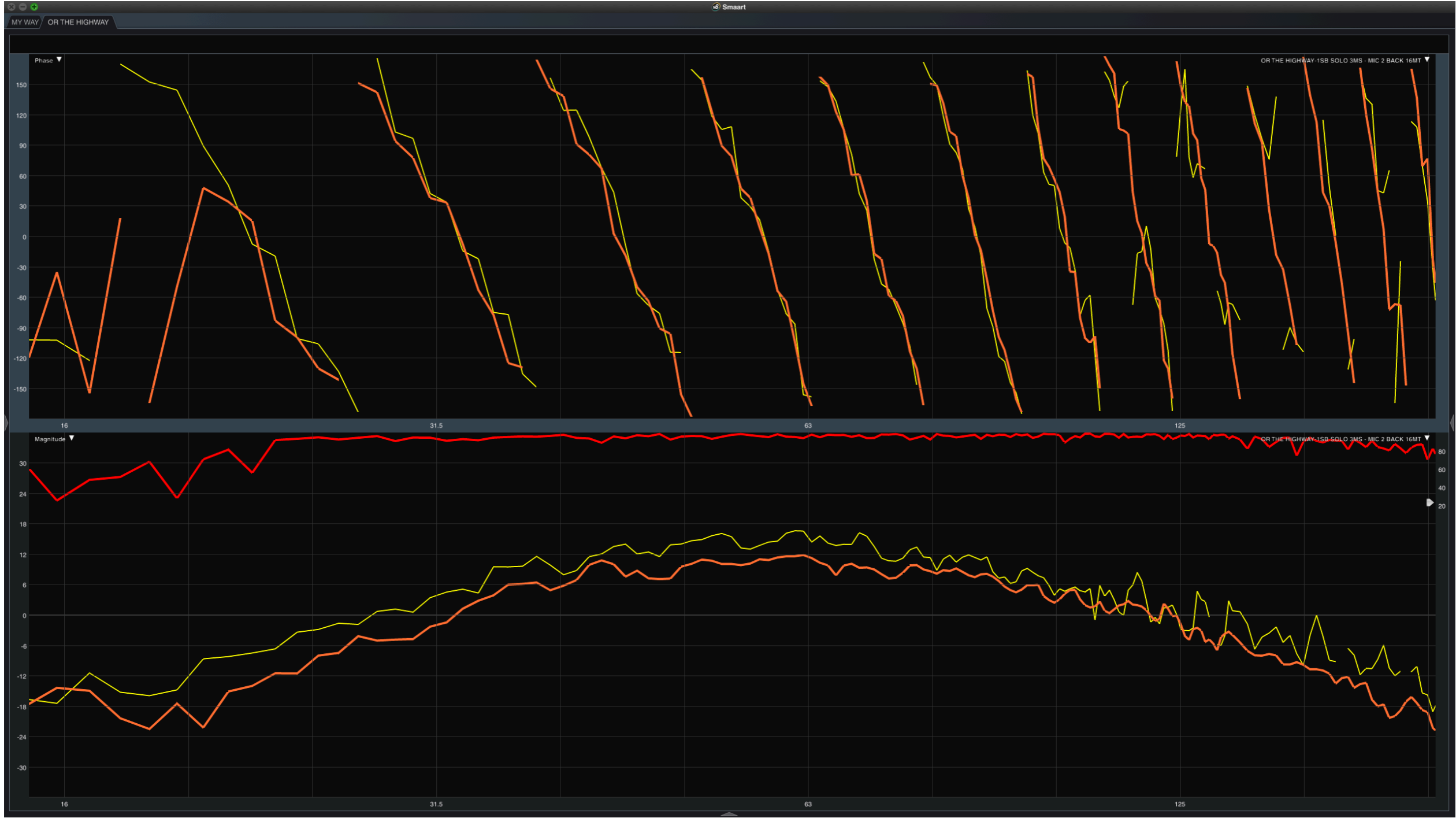
Yellow Subs front (1+2) Back mic (> reference phase alignment Sub 3)



MIC FRONT 16MT
M 0.00
R

MIC 2 BACK 16MT
M 0.00
R

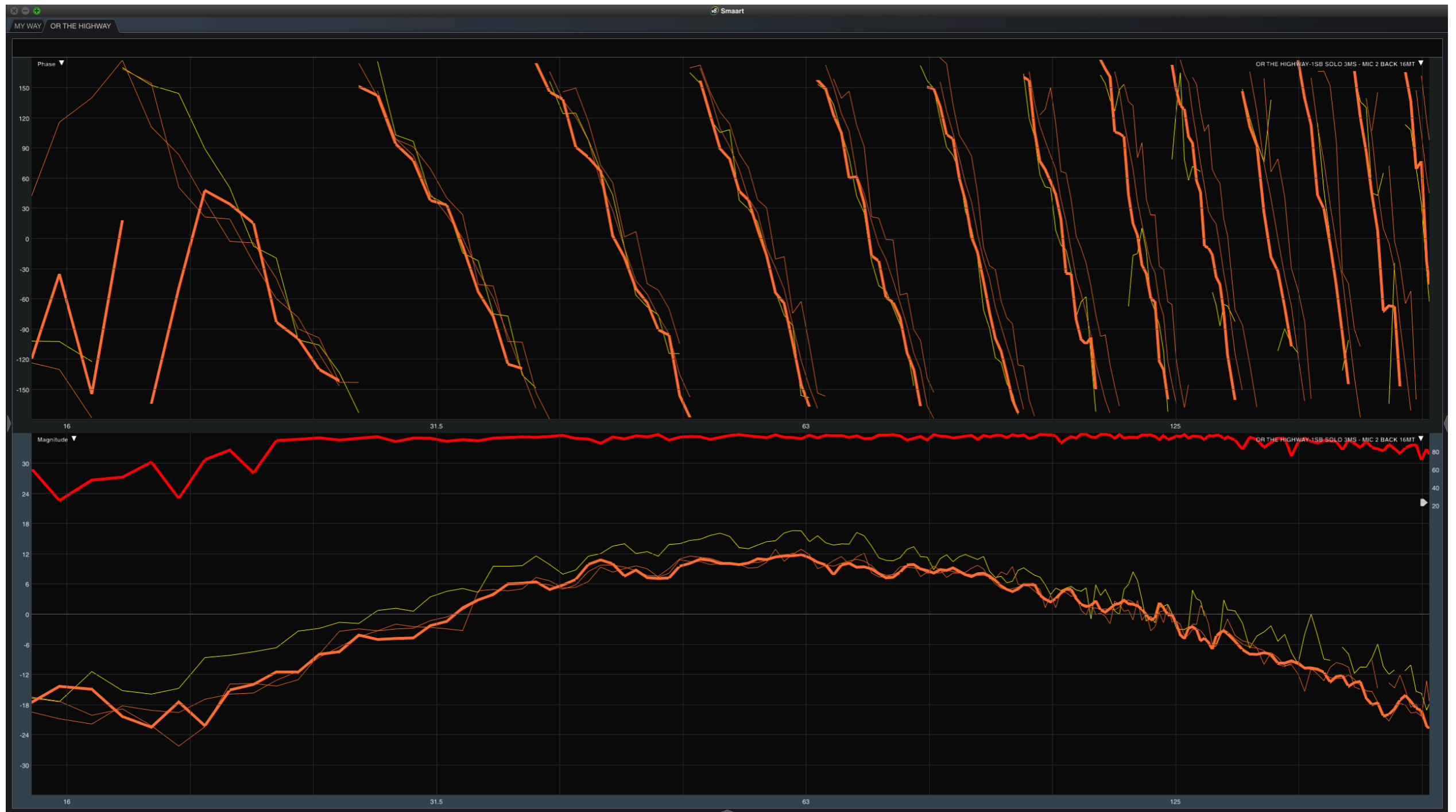
Orange Sub (3) back Back mic +3ms delay match Sub 1+2 Yellow Subs front (1+2) Back mic (> reference phase alignment Sub 3)



- MIC FRONT 16MT**
M: [Progress bar] 0.00
R: [Progress bar]
- MIC 2 BACK 16MT**
M: [Progress bar] 0.00
R: [Progress bar]

Orange Sub (3) back Back mic (Start vs 1ms 2ms 3ms)

Yellow Subs front (1+2) Back mic (> reference phase alignment Sub 3)



MIC FRONT 16MT

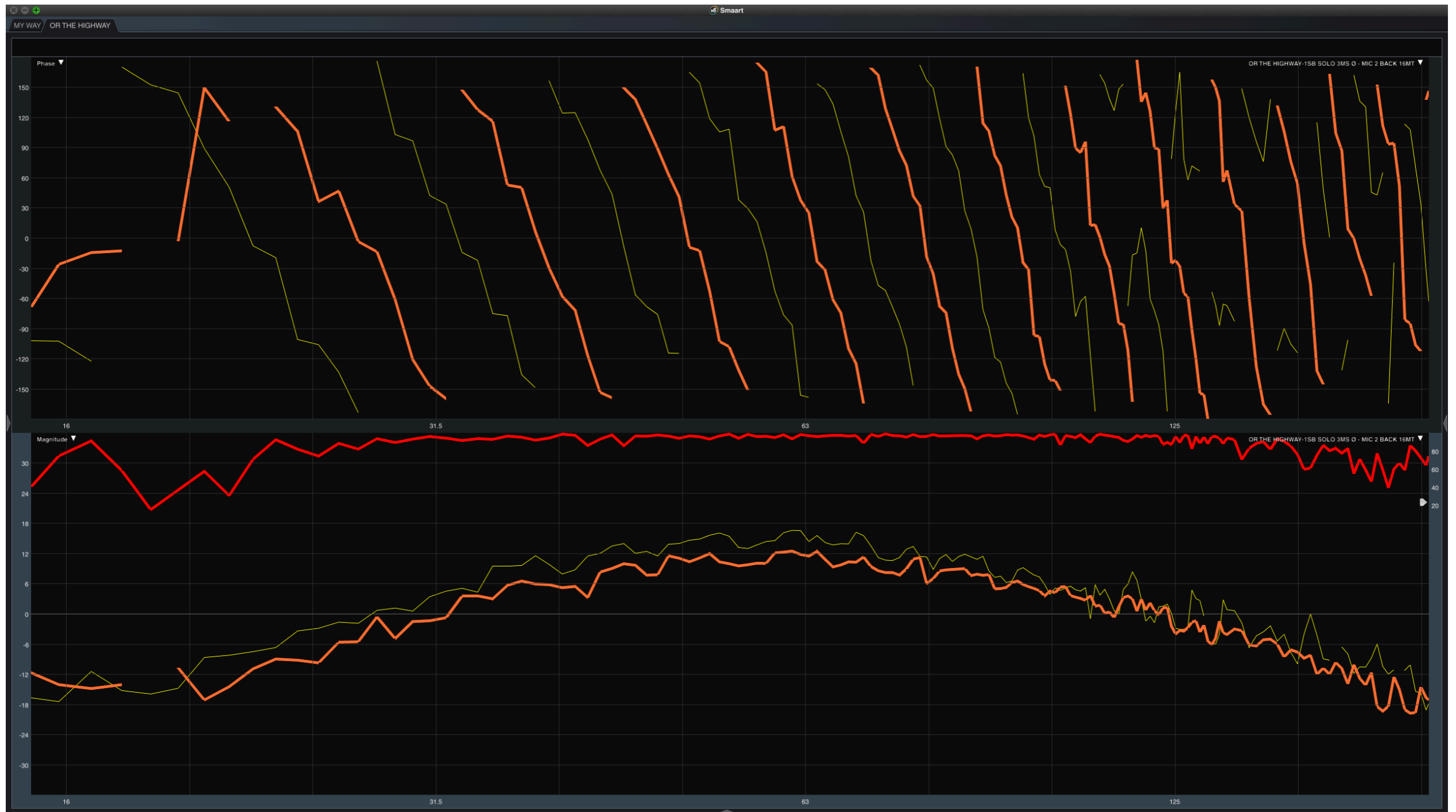
M R 0.00

MIC 2 BACK 16MT

M R 0.00

Orange Sub (3) back Back mic +3ms delay & ∅

Yellow Subs front (1+2) Back mic (> reference phase alignment Sub 3)



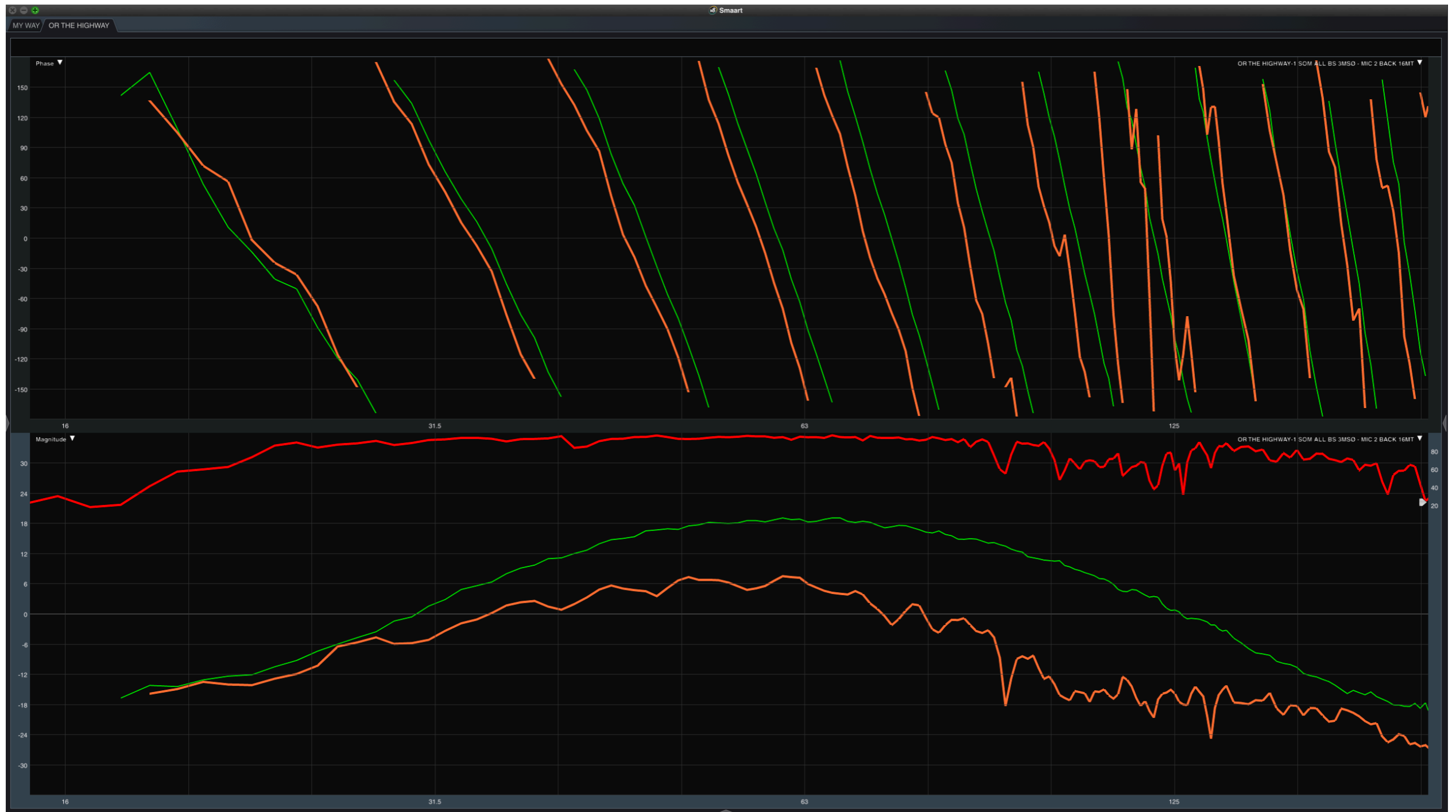
MIC FRONT 16MT

M R 0.00

MIC 2 BACK 16MT

M R 0.00

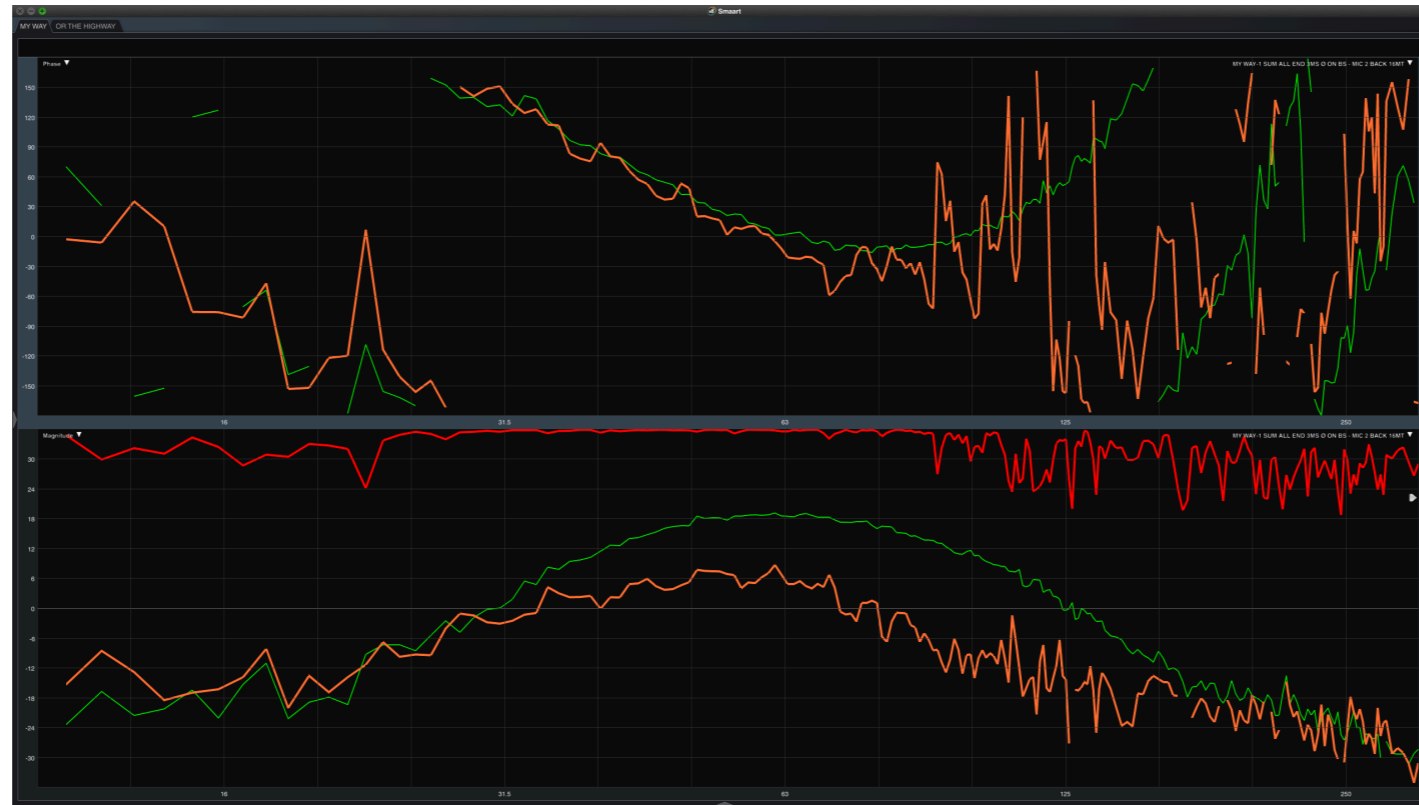
Green Front mic (Sub 1+2+3) Orange Back mic (Sub 1+2+3)



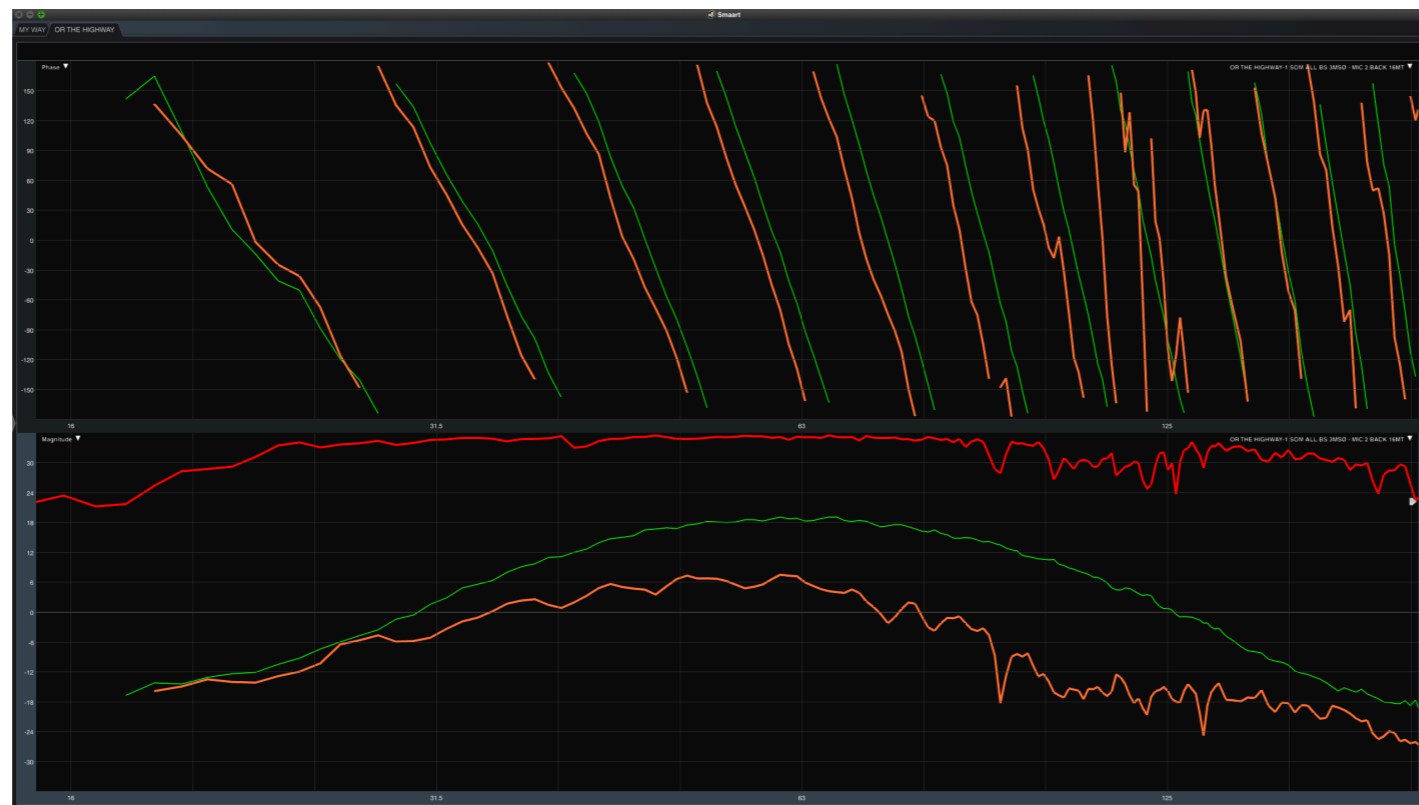
MIC FRONT 16MT
M 0.00
R

MIC 2 BACK 16MT
M 0.00
R

Smart synchronised on source



Smart at time 0ms



Is there a “better” way? (better > different)

**Yes there are different way's of getting more reduction at the back
but a word of caution:**

**To get more reduction at the back SUB3's Level Frequency and Phase response need to
be matched as close as possible to Subs 1+2 before reversing polarity.**

**Specifically Level Frequency changes on SUB3 will cause Sub 3 to hit the limiters
before Subs 1+2 do so do not “overdrive” the array and risk cardioid implosion**

The following will only work on the specific brand of speakers/amp and processor

Speakers used are Fulcrum Acoustic TS212

Amp used is a Linea Research 44M20dante

Processor used is a Lake LM26

The “Freak” version

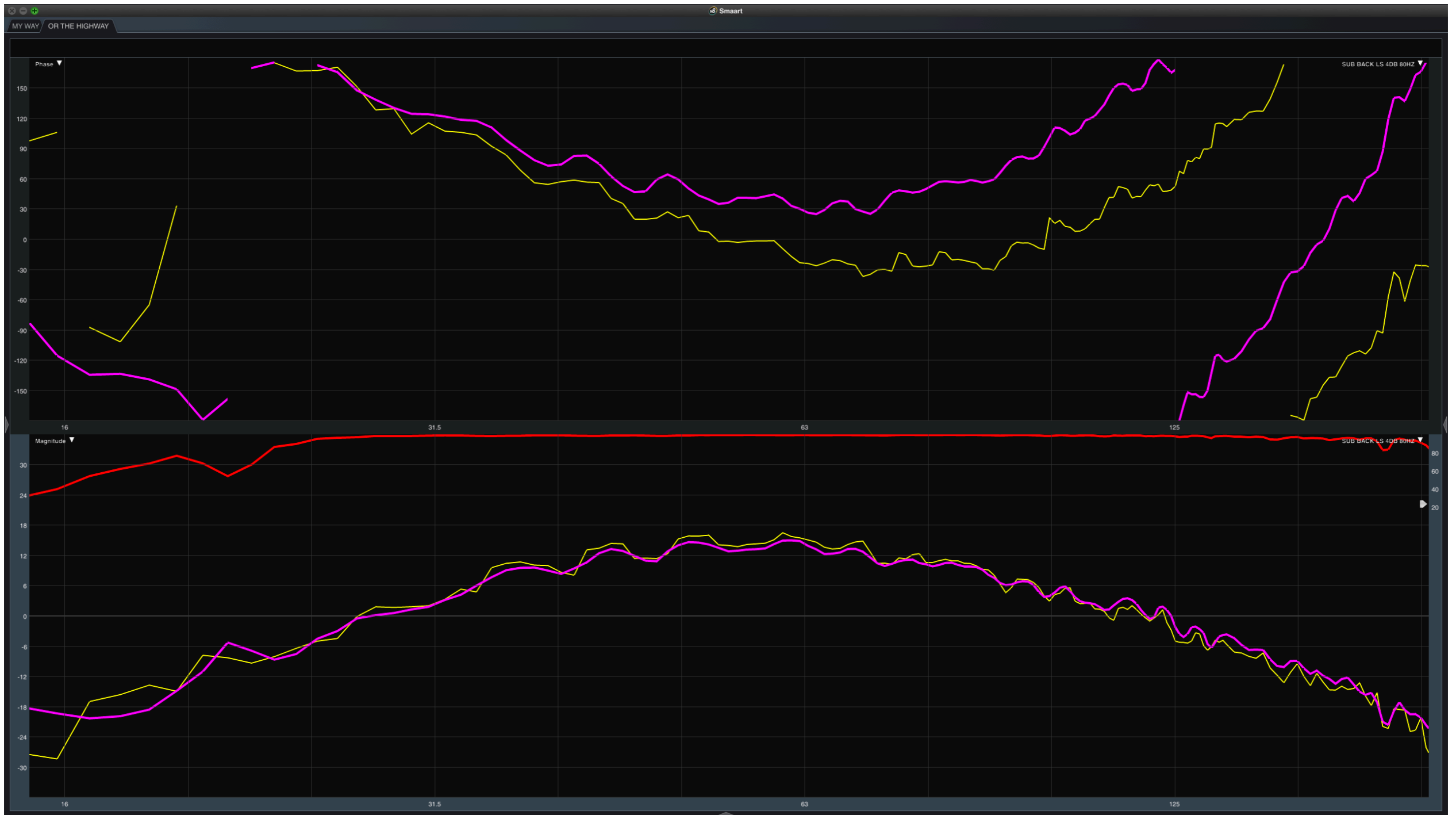
Orange Sub 3 Back mic start Yellow Sub 1 + 2 Back mic start



Pink Sub 3 Back mic

Low shelf @80Hz +4dB

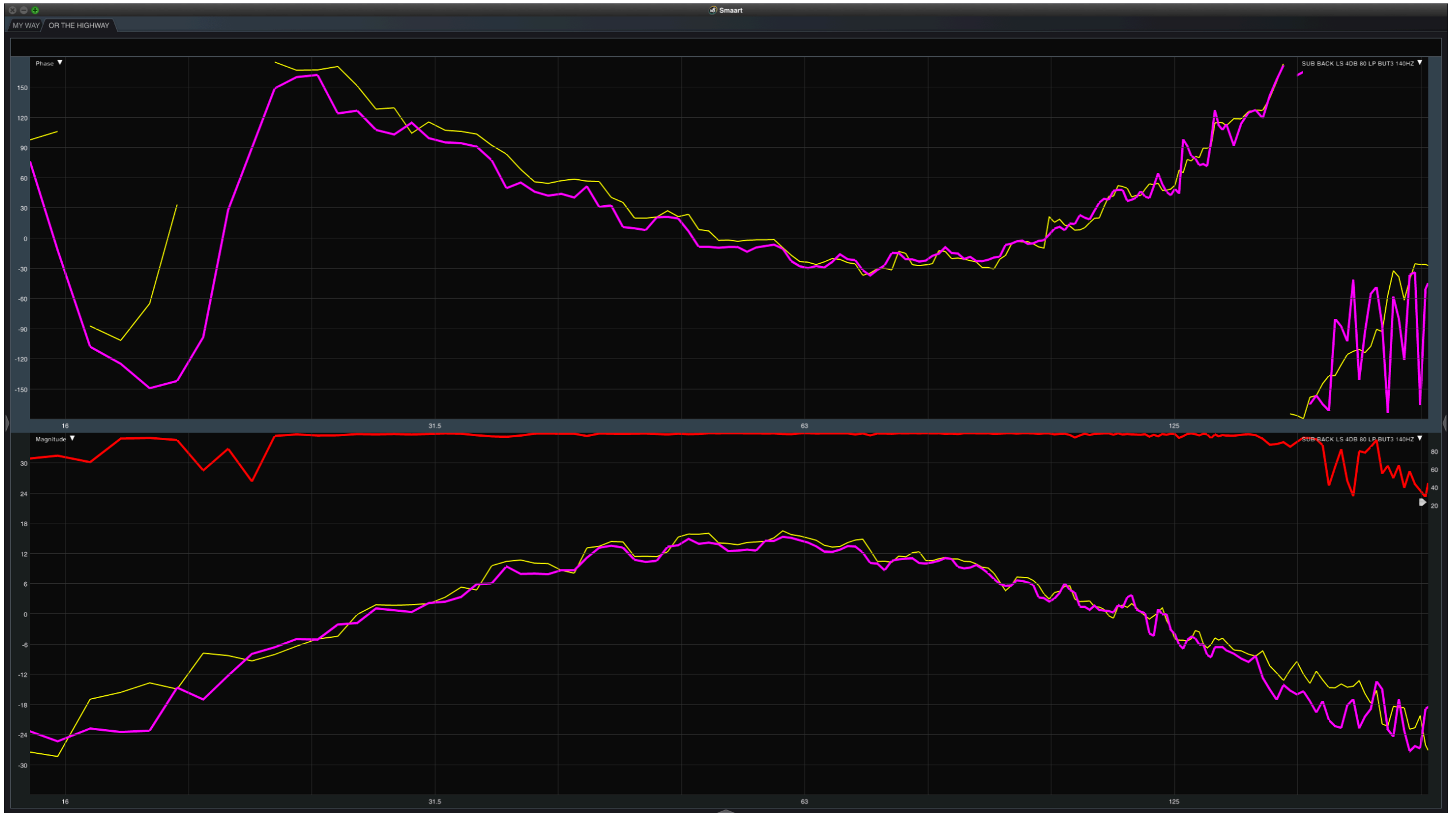
Yellow Sub 1 + 2 Back mic start



Pink Sub 3 Back mic

Low shelf @80Hz +4dB
Buterworth LP 3@140Hz

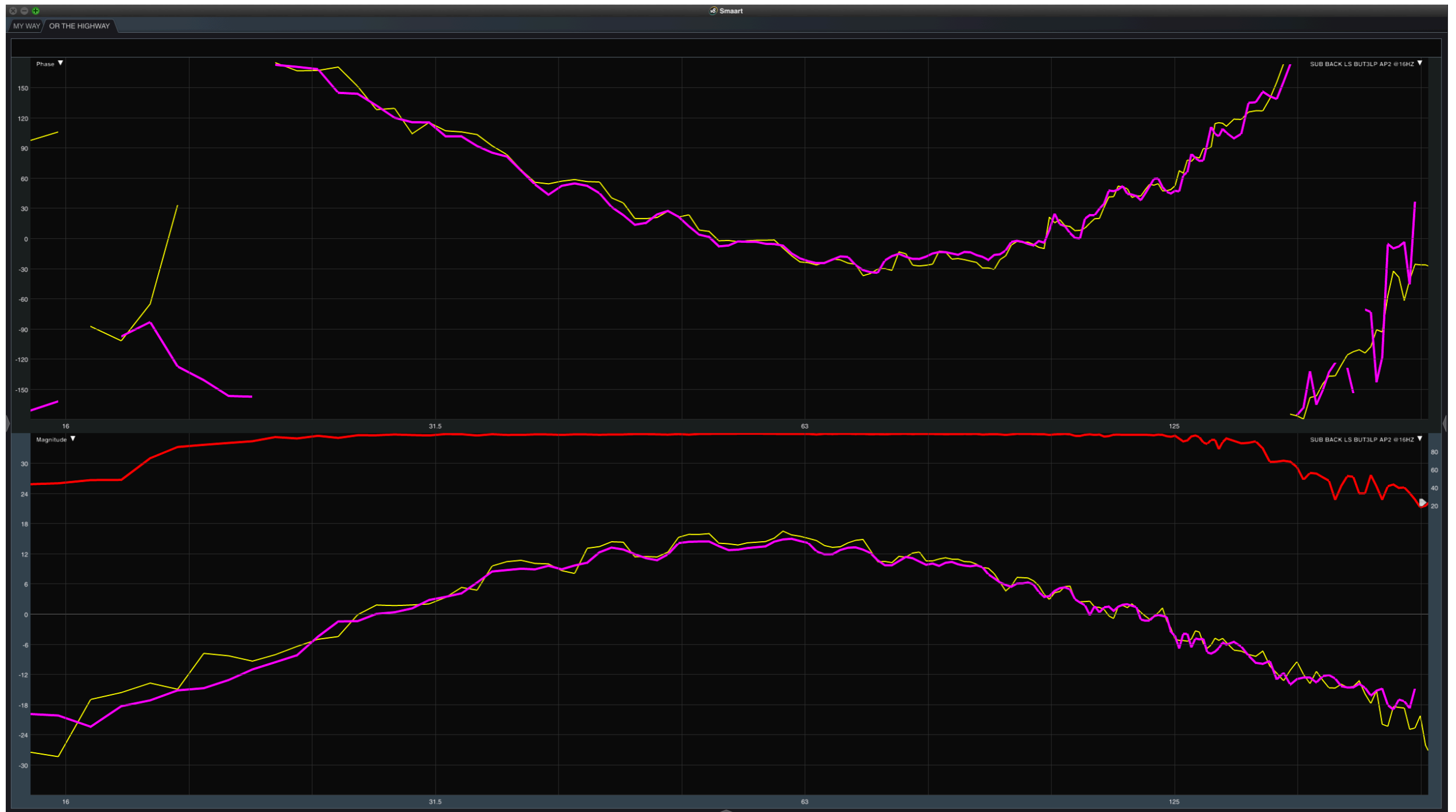
Yellow Sub 1 + 2 Back mic start



Pink Sub 3 Back mic

Low shelf @80Hz +4dB
Buterworth LP 3@140Hz
AP2@16Hz narrow BW

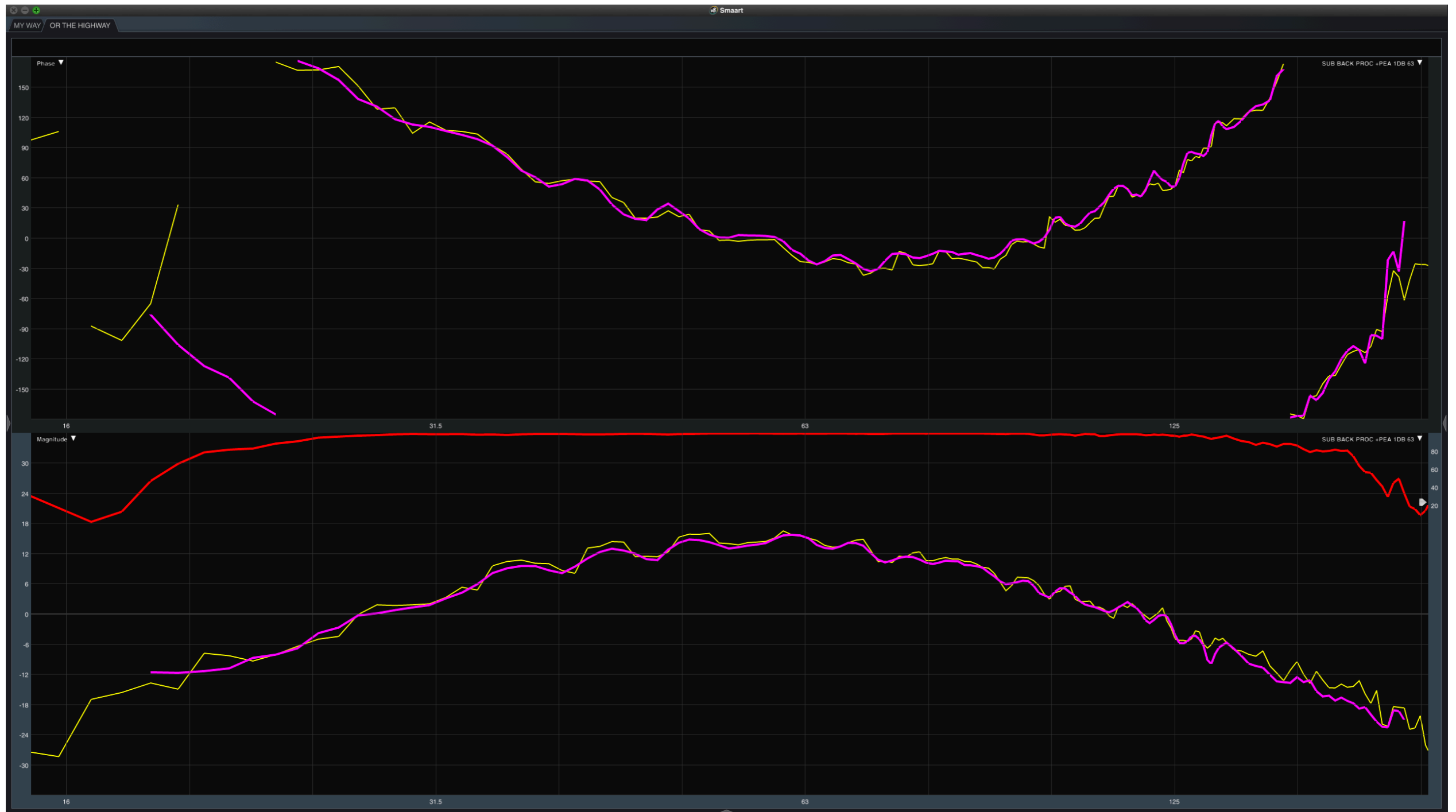
Yellow Sub 1 + 2 Back mic start



Pink Sub 3 Back mic

Low shelf @80Hz +4dB
Buterworth LP 3@140Hz
AP2@16Hz narrow BW
PEQ @63Hz +1dB

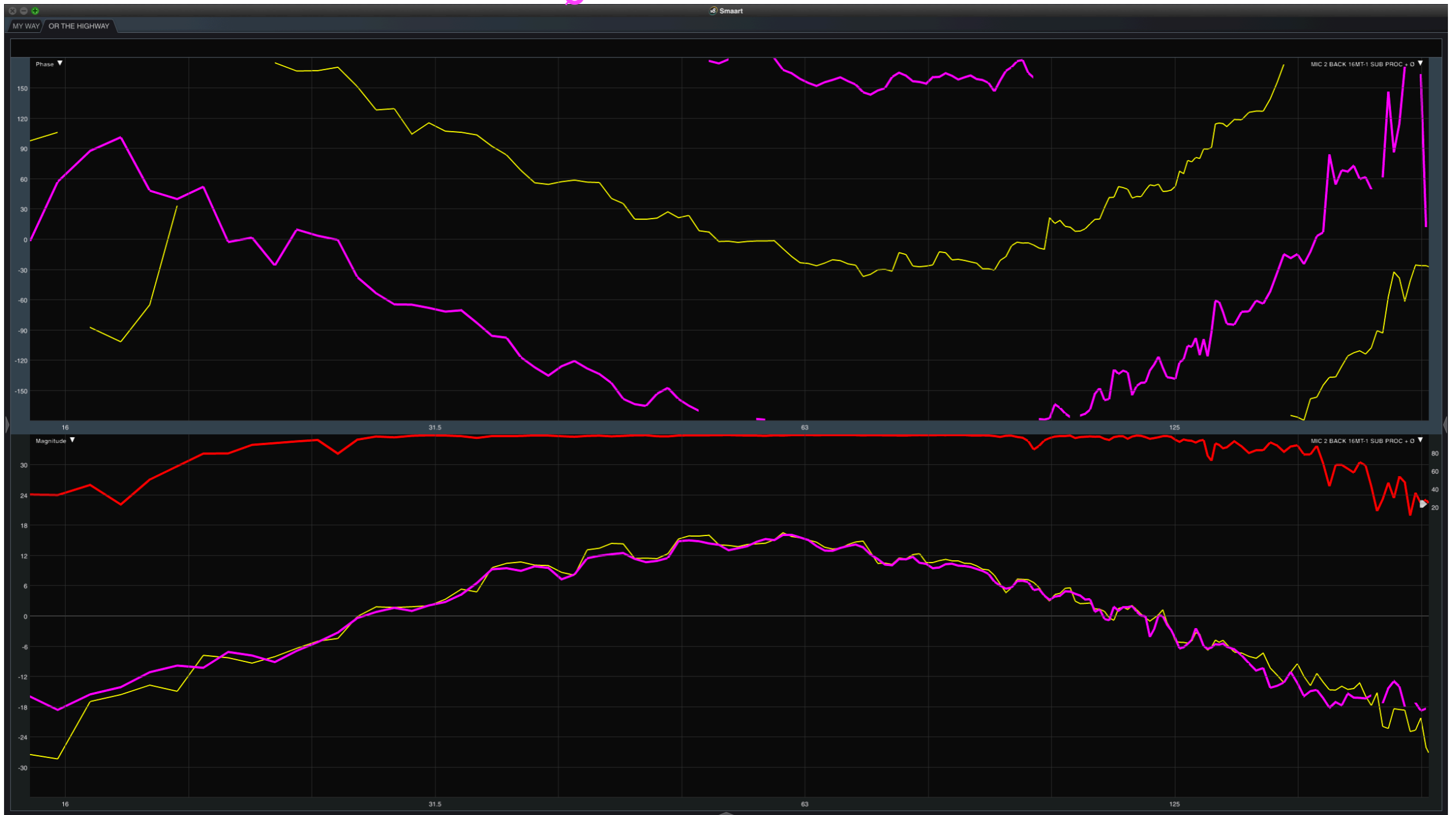
Yellow Sub 1 + 2 Back mic start



Pink Sub 3 Back mic

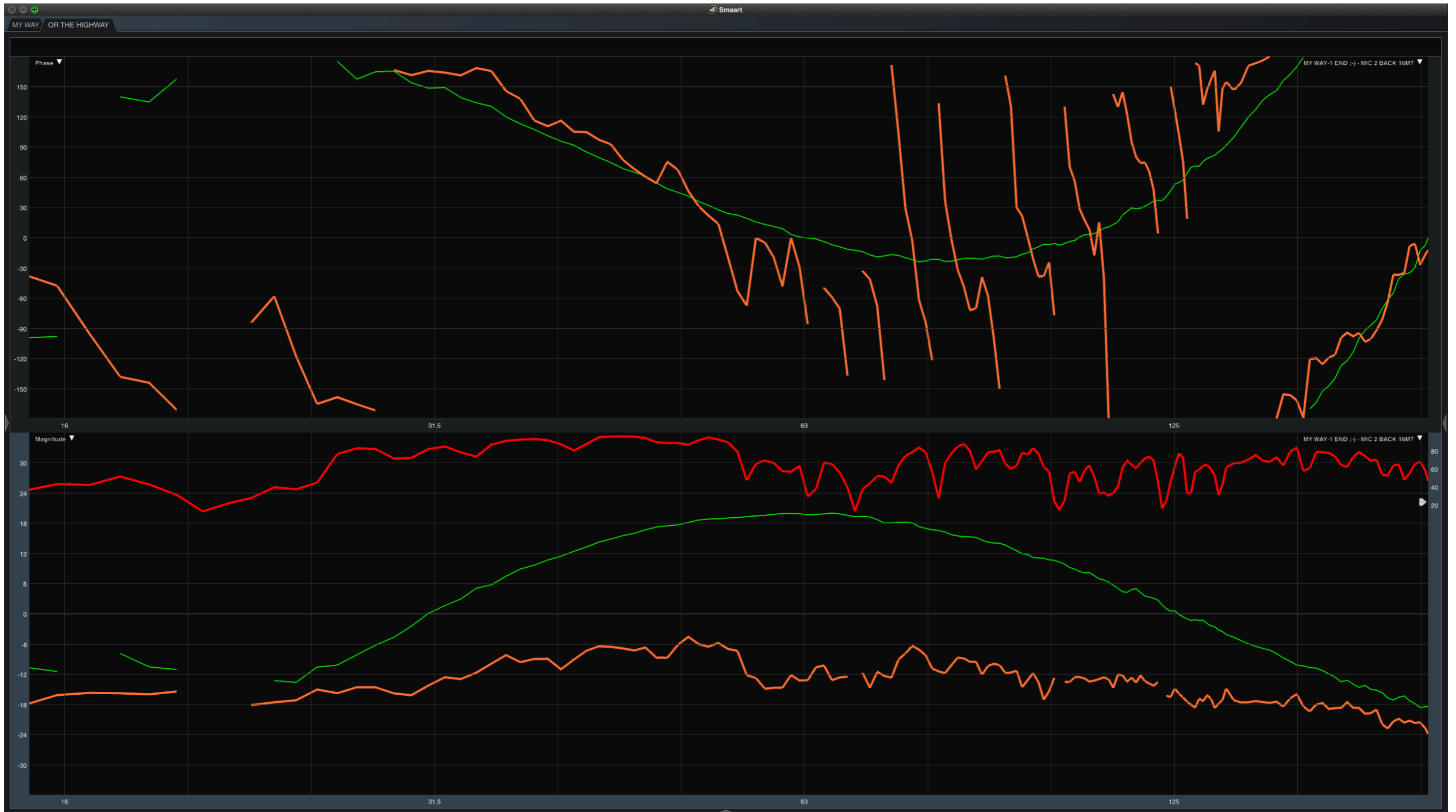
Low shelf @80Hz +4dB
Buterworth LP 3@140Hz
AP2@16Hz narrow BW
PEQ @63Hz +1dB

Yellow Sub 1 + 2 Back mic start

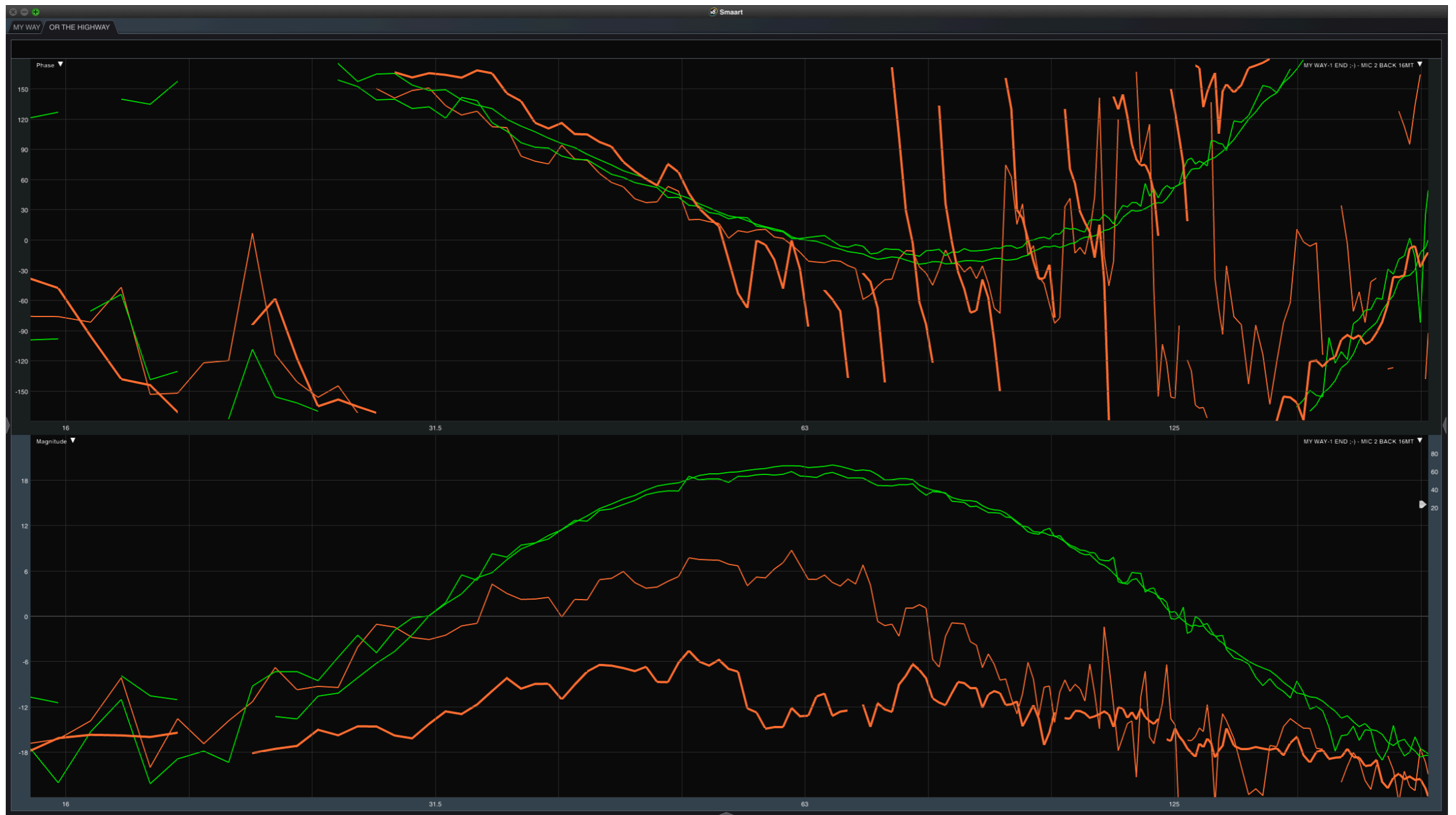


Low shelf @80Hz +4dB
Buterworth LP 3@140Hz
AP2@16Hz narrow BW
PEQ @63Hz +1dB
Polariteit draaien

Green Sum Sub 1 + 2 + 3 front mic
Orange Sum Sub 1 + 2 + 3 back mic



The difference between the Delay and Freak version



The difference between the Delay and Freak version

