

**NRD-515 - PETER - printje 2**

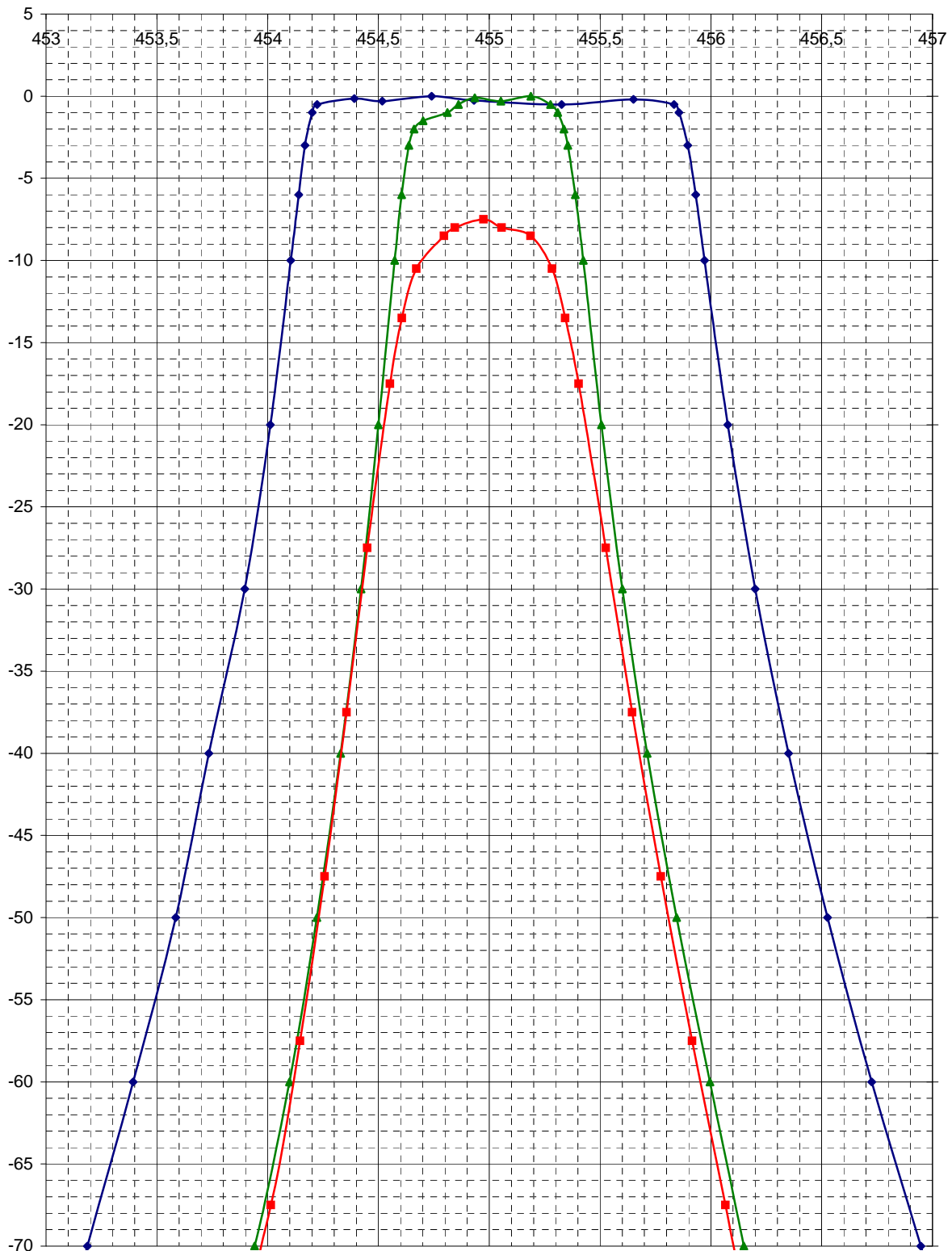
**JRC YF455EBF "1,8 kHz"**

**BLAUW => -6 dB = 1,792 kHz | -60 dB = 3,333 kHz | shape 60/6 = 1,860 | demp 3,8 dB  
mooi vlakke doorlaat !**

**KOKUSAI MF-455-03AZ121 "600 Hz"**

**GROEN => -6 dB = 783 Hz | -60 dB = 1,897 kHz | shape 60/6 = 2,423 | demping ± 4 dB**

**ROOD = idem, voor de schoonmaak, toen ruim 11,5 dB demping  
de rode curve is 11,5 - 4 = 7,5 dB naar beneden geschoven om te vergelijken  
de piezo transducers zijn nu aan beide kanten in vierkante schuim houdertjes geplaatst**



| LEVEL  |          | FILTER-1  |  | FILTER-2                     |               | FILTER-3         |                |  |
|--|----------|---|--|------------------------------|---------------|------------------|----------------|--|
| grafiek  |          | blauw   |  | rood                         |               | groen            |                |  |
| -85  |          |   |  |                              |               | 428,8            |                |  |
| -80  |          |   |  |                              |               | 440,59           |                |  |
| -77,5  |          |   |  |                              |               | 445,444          |                |  |
| -75  |          |   |  |                              |               | 452,345          |                |  |
| -77,5  |          |   |  |                              |               | 453,449          |                |  |
| -75  |          |   |  | 430,767                      |               | 453,81           |                |  |
| -70  |          |   |  | 441,752                      |               |                  |                |  |
| -67,5  |          |   |  | 448,888                      |               |                  |                |  |
| -70  |          |   |  | 452,694                      |               |                  |                |  |
| -72,5  |          |   |  | 453,564                      |               |                  |                |  |
| -100   |          | 435   |  |                              |               |                  |                |  |
| -95  |          | 445,8   |  |                              |               |                  |                |  |
| -100   |          | 452,604   |  |                              |               |                  |                |  |
| -97  |          | 452,69  |  |                              |               |                  |                |  |
| -95  |          | 452,721   |  |                              |               |                  |                |  |
| -90  |          | 452,795   |  |                              |               |                  |                |  |
| -85  |          | 452,881   |  |                              |               |                  |                |  |
| -80  |          | 452,982   |  |                              |               |                  |                |  |
| -70  |          | 453,187   |  | 453,802                      |               | 453,941          |                |  |
| -60  |          | 453,393   |  | 454,014                      |               | 454,099          |                |  |
| -50  |          | 453,585   |  | 454,146                      |               | 454,222          |                |  |
| -40  |          | 453,735   |  | 454,257                      |               | 454,329          |                |  |
| -30  |          | 453,897   |  | 454,356                      |               | 454,421          |                |  |
| -20  |          | 454,012   |  | 454,45                       |               | 454,5            |                |  |
| -10  |          | 454,104   |  | 454,552                      |               | 454,573          |                |  |
| -6   |          | 454,14  |  | 454,606                      |               | 454,605          |                |  |
| -3   |          | 454,169   |  | 454,671                      |               | 454,637          |                |  |
| -2   |          |   |  |                              |               | 454,661          |                |  |
| -1,5   |          |   |  |                              |               | 454,702          |                |  |
| -1   |          | 454,201   |  | 454,796                      |               | 454,811          |                |  |
| -0,5   |          | 454,223   |  | 454,845                      |               | 454,861          |                |  |
| -0,1   |          |   |  |                              |               | 454,935          |                |  |
| -0,15  |          | 454,391   |  |                              |               |                  |                |  |
| -0,3   |          | 454,517   |  |                              |               | 455,052          |                |  |
| 0  |          | 454,74  |  | 454,974                      |               | 455,188          |                |  |
| -0,25  |          | 454,931   |  |                              |               |                  |                |  |
| -0,5   |          | 455,326   |  |                              |               | 455,276          |                |  |
| -0,2   |          | 455,651   |  |                              |               |                  |                |  |
| -0,5   |          | 455,834   |  | 455,056                      |               |                  |                |  |
| -1   |          | 455,856   |  | 455,187                      |               | 455,309          |                |  |
| -2   |          |   |  |                              |               | 455,337          |                |  |
| -3   |          | 455,896   |  | 455,283                      |               | 455,355          |                |  |
| -6   |          | 455,932   |  | 455,343                      |               | 455,388          |                |  |
| -10  |          | 455,971   |  | 455,404                      |               | 455,424          |                |  |
| -20  |          | 456,076   |  | 455,526                      |               | 455,506          |                |  |
| -30  |          | 456,2   |  | 455,645                      |               | 455,6            |                |  |
| -40  |          | 456,35  |  | 455,774                      |               | 455,712          |                |  |
| -50  |          | 456,526   |  | 455,915                      |               | 455,846          |                |  |
| -60  |          | 456,726   |  | 456,066                      |               | 455,996          |                |  |
| -70  |          | 456,947   |  | 456,217                      |               | 456,149          |                |  |
| -75  |          |   |  |                              |               | 456,216          |                |  |
| -80  |          | 457,165   |  |                              |               | 456,279          |                |  |
| -90  |          | 457,35  |  |                              |               |                  |                |  |
| -100   |          | 457,543   |  |                              |               |                  |                |  |
| -93  |          | 458,828   |  |                              |               |                  |                |  |
| -100   |          | 462,168   |  |                              |               |                  |                |  |
| -100   |          | 470   |  |                              |               |                  |                |  |
| -100   |          | 480   |  |                              |               |                  |                |  |
| -84  |          |   |  |                              |               | 456,353          |                |  |
| -80  |          |   |  |                              |               | 456,506          |                |  |
| -77  |          |   |  |                              |               | 456,823          |                |  |
| -80  |          |   |  |                              |               | 458,673          |                |  |
| -90  |          |   |  |                              |               | 461,728          |                |  |
| -100   |          |   |  |                              |               | 464,633          |                |  |
| -74,5  |          |   |  | 456,353                      |               |                  |                |  |
| -71,5  |          |   |  | 456,952                      |               |                  |                |  |
| -75  |          |   |  | 458,728                      |               |                  |                |  |
| -80  |          |   |  | 460,825                      |               |                  |                |  |
| -85  |          |   |  | 462,704                      |               |                  |                |  |
| -90  |          |   |  | 464,782                      |               |                  |                |  |
| -100   |          |   |  | 468,5                        |               | 470              |                |  |
| -98  |          |   |  | 480                          |               |                  |                |  |
| -6 dB  |          | 1,792 kHz   |  | 0,737 kHz                    |               | 0,783 kHz        |                |  |
| -60 dB   |          | 3,333 kHz   |  | 2,052 kHz                    |               | 1,897 kHz        |                |  |
| shape 60/6   |          | 1,860   |  | 2,784                        |               | 2,423            |                |  |
| demping  |          | ± 3,8 dB  |  | ± 11,5 dB                    | 2 S punten !! | ± 4 dB           |                |  |
|  |          |   |  | hoognodig naar de wasmachien |               | na de wasmachien |                |  |
| afsluit Z (F1) = 600 Ohm ( Z-in = serie voeding via 550 ohm uit 50 ohm bron) |          |   |  |                              |               |                  |                |  |
| of (F2) 1000 Ohm ( Z-in = serie voeding via 950 ohm uit 50 ohm bron)         |          |   |  |                              |               |                  |                |  |
| ingangsspanning filter aanpassen tot 8 mV UIT = 0 dB op SPM-3                |          |   |  |                              |               |                  |                |  |
| meetspanning 15 - 25 milliVolt uit generator PS-3 naar xx ohm serie-R        |          |   |  |                              |               |                  |                |  |
|  | No: 8601 | "1,8 kHz"   |  | "600 Hz"                     | No: 13220     | "600 Hz"         | No: 13220      |  |
| filtertype   |          | YF455EBF  |  | MF-455-03AZ121               |               | MF-455-03AZ121   |                |  |
|  |          | JRC ( NDK)  |  | KOKUSAI                      |               | KOKUSAI          |                |  |
| filter - Z   |          | 600 Ohm   |  | 1000 Ohm                     | met 2 trafo's | 500 Ohm !!!      | ZONDER trafo's |  |
| 25-8-2010  |          | filters uit NRD-515 van Peter A. - 2e print setje |  |                              |               |                  |                |  |
| grafiek  |          | blauw   |  | rood                         |               | groen            |                |  |

NRD-515 - PETER - printje 2

JRC YF455EBF "1,8 kHz"

BLAUW => -6 dB = 1,792 kHz | -60 dB = 3,333 kHz | shape 60/6 = 1,860 | demp 3,8 dB  
mooie vlakke doorlaat !

KOKUSAI MF-455-03AZ121 "600 Hz"

GROEN => -6 dB = 783 Hz | -60 dB = 1,897 kHz | shape 60/6 = 2,423 | demping ± 4 dB

ROOD = idem, voor de schoonmaak, toen ruim 11,5 dB demping

de rode curve is 11,5 - 4 = 7,5 dB naar beneden geschoven om te vergelijken

de piezo transducers zijn nu aan beide kanten in vierkante schuim houdertjes geplaatst



NRD-515 - PETER - printje 2

JRC YF455EBF "1,8 kHz"

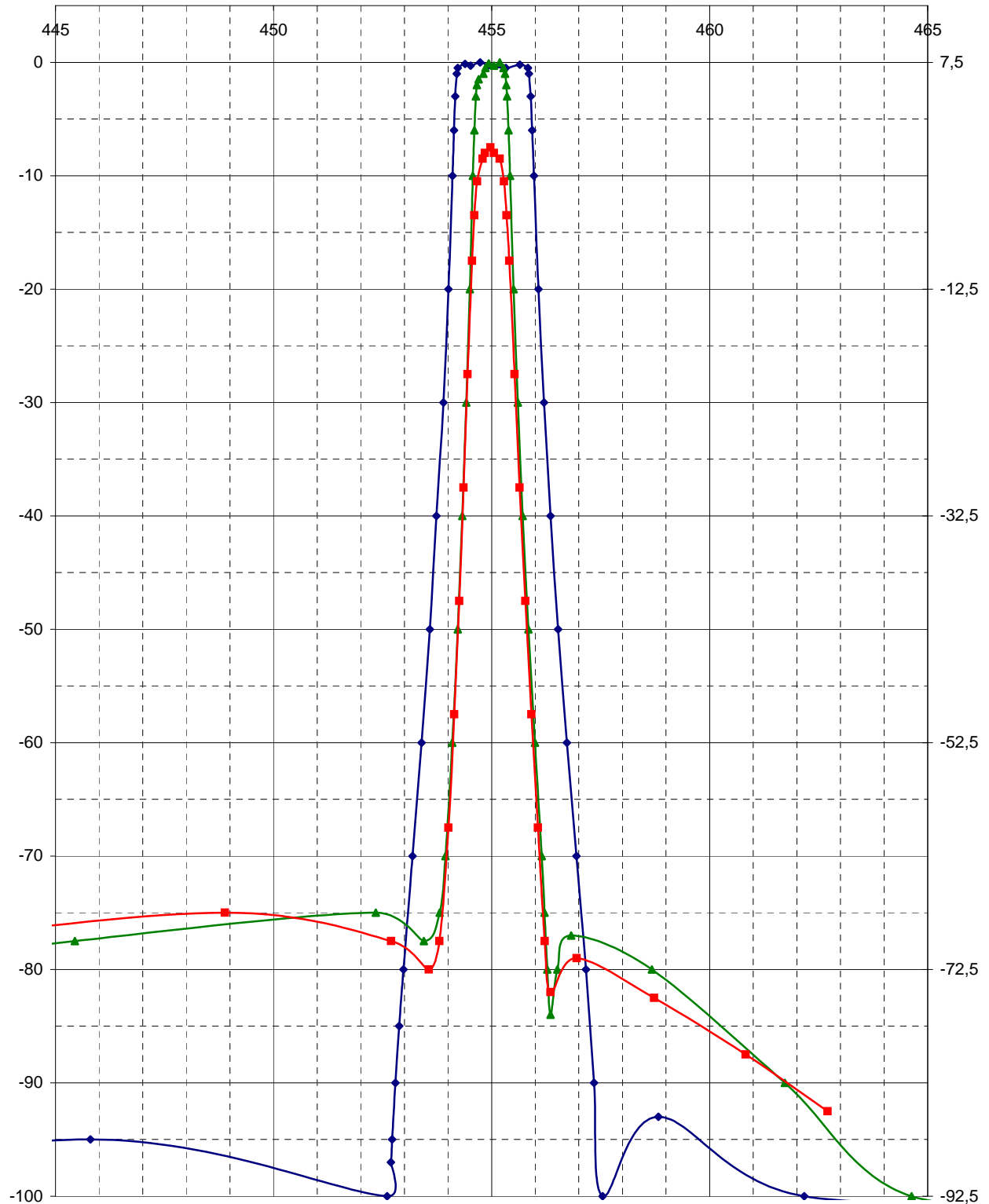
BLAUW => -6 dB = 1,792 kHz | -60 dB = 3,333 kHz | shape 60/6 = 1,860 | demp 3,8 dB  
mooie vlakke doorlaat !

KOKUSAI MF-455-03AZ121 "600 Hz"

GROEN => -6 dB = 783 Hz | -60 dB = 1,897 kHz | shape 60/6 = 2,423 | demping ± 4 dB

ROOD = idem, voor de schoonmaak, toen ruim 11,5 dB demping

de rode curve is 11,5 - 4 = 7,5 dB naar beneden geschoven om te vergelijken  
de piezo transducers zijn nu aan beide kanten in vierkante schuim houdertjes geplaatst



NDK - JRC - YF455EBF "1.8 kHz" - from NRD-515 "Peter"

BLUE = -6 dB = 1.792 kHz | -60 dB = 3.333 kHz | shape 60/6 = 1.860 | loss 3.8 dB

KOKUSAI - MF-455-03AZ121 "600 Hz"

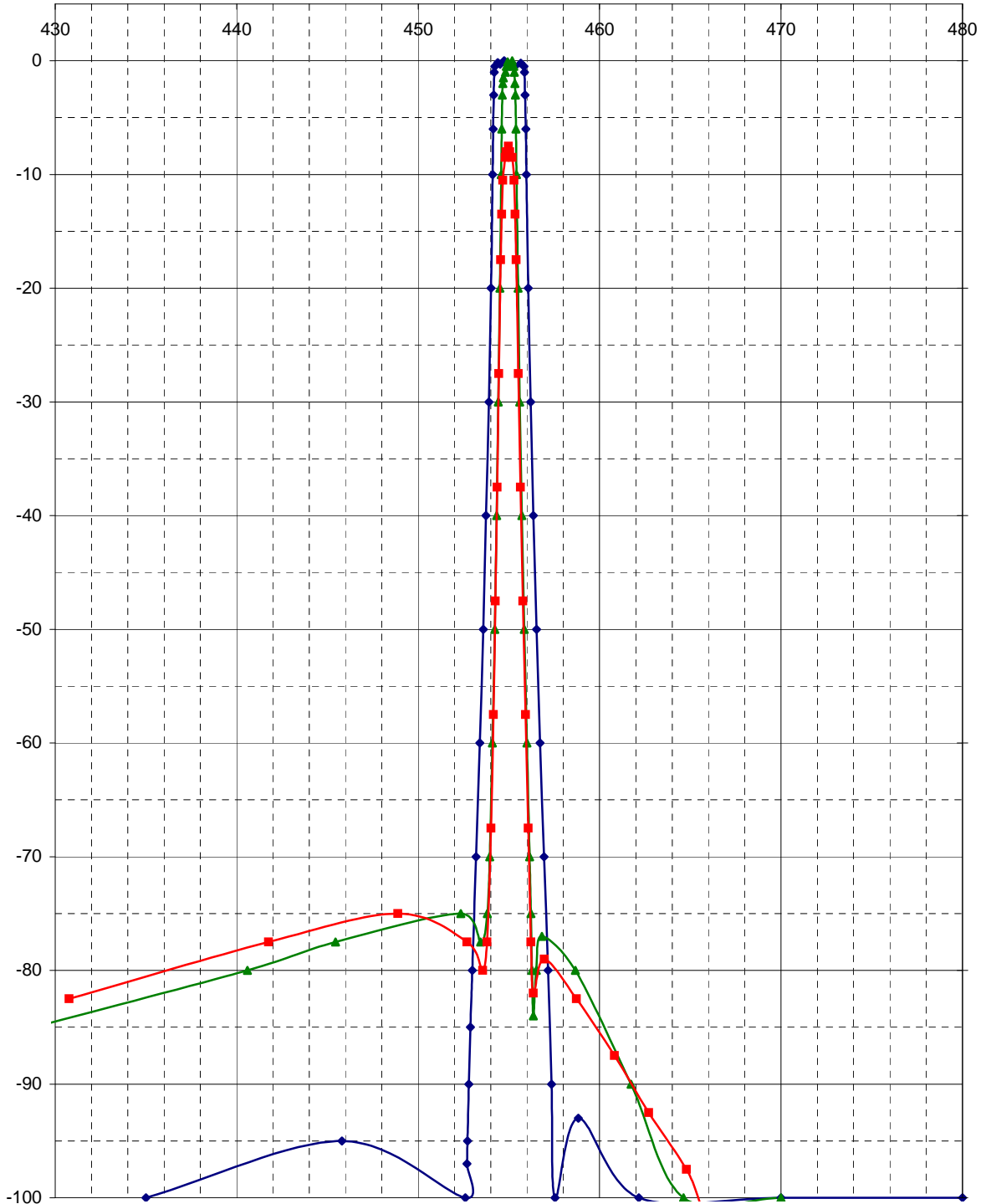
GREEN = -6 dB = 783 Hz | -60 dB = 1.897 kHz | shape 60/6 = 2.423 | loss  $\pm 4$  dB

total filter board measured, so with both Z transfer transformers (2:1 and 1:2)

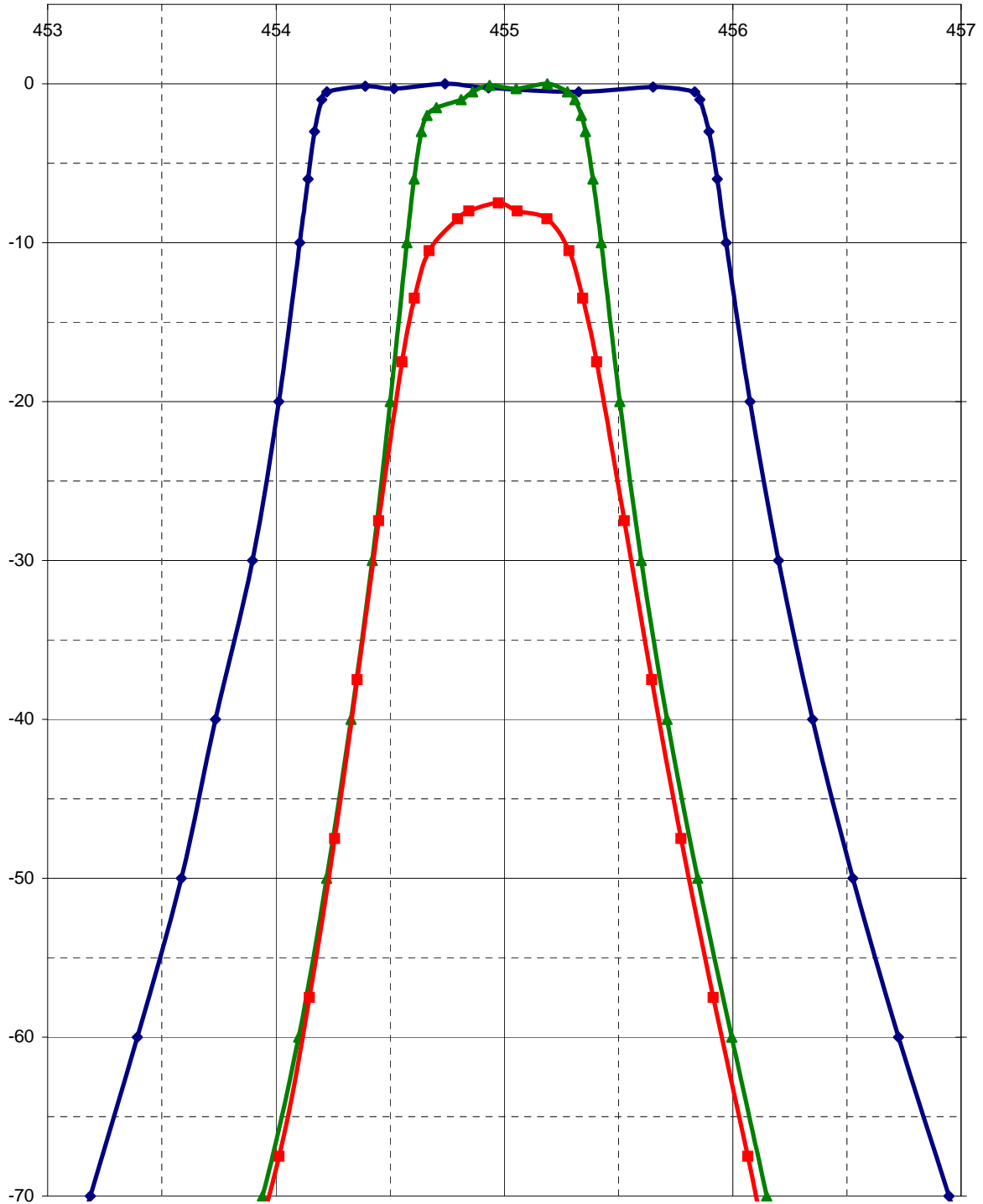
RED curve = same filter, but before the cleaning, loss was 11.5 dB

(to compare: the red curve is shifted down 11.5 - 4 = 7.5 dB until over the green curve)

The piezo transducers are now placed in new foam spacers (studs) at both ends



**NDK - JRC - YF455EBF "1.8 kHz" - from NRD-515 "Peter"**  
**BLUE = -6 dB = 1.792 kHz | -60 dB = 3.333 kHz | shape 60/6 = 1.860 | loss 3.8 dB**  
**noteworthy flat pass-through!**  
**KOKUSAI - MF-455-03AZ121 "600 Hz"**  
**GREEN = -6 dB = 783 Hz | -60 dB = 1.897 kHz | shape 60/6 = 2.423 | loss ± 4 dB**  
**total filter board measured, so with both Z transfer transformers ( 2:1 and 1:2 )**  
**RED curve = same filter, but before the cleaning, loss was 11.5 dB**  
**(to compare: the red curve is shifted down 11.5 - 4 = 7.5 dB until over the green curve)**  
**The piezo transducers are now placed in new foam spacers (studs) at both ends**



**NDK - JRC - YF455EBF "1.8 kHz" - from NRD-515 "Peter"**  
**BLUE = -6 dB = 1.792 kHz | -60 dB = 3.333 kHz | shape 60/6 = 1.860 | loss 3.8 dB**  
**noteworthy flat pass-through!**  
**KOKUSAI - MF-455-03AZ121 "600 Hz"**  
**GREEN = -6 dB = 783 Hz | -60 dB = 1.897 kHz | shape 60/6 = 2.423 | loss  $\pm 4$  dB**  
**total filter board measured, so with both Z transfer transformers ( 2:1 and 1:2 )**  
**RED curve = same filter, but before the cleaning, loss was 11.5 dB**  
**(to compare: the red curve is shifted down 11.5 - 4 = 7.5 dB until over the green curve)**  
**The piezo transducers are now placed in new foam spacers (studs) at both ends**

