

## LGM TFD Array Analysis

Typinski, 3/15/15

Square array 25 feet on a side of four AJ4CO TFD-02A 24-foot TFD elements erected 15 Mar 2015

Element top wire height 9'0" above ground, no ground plane installed.

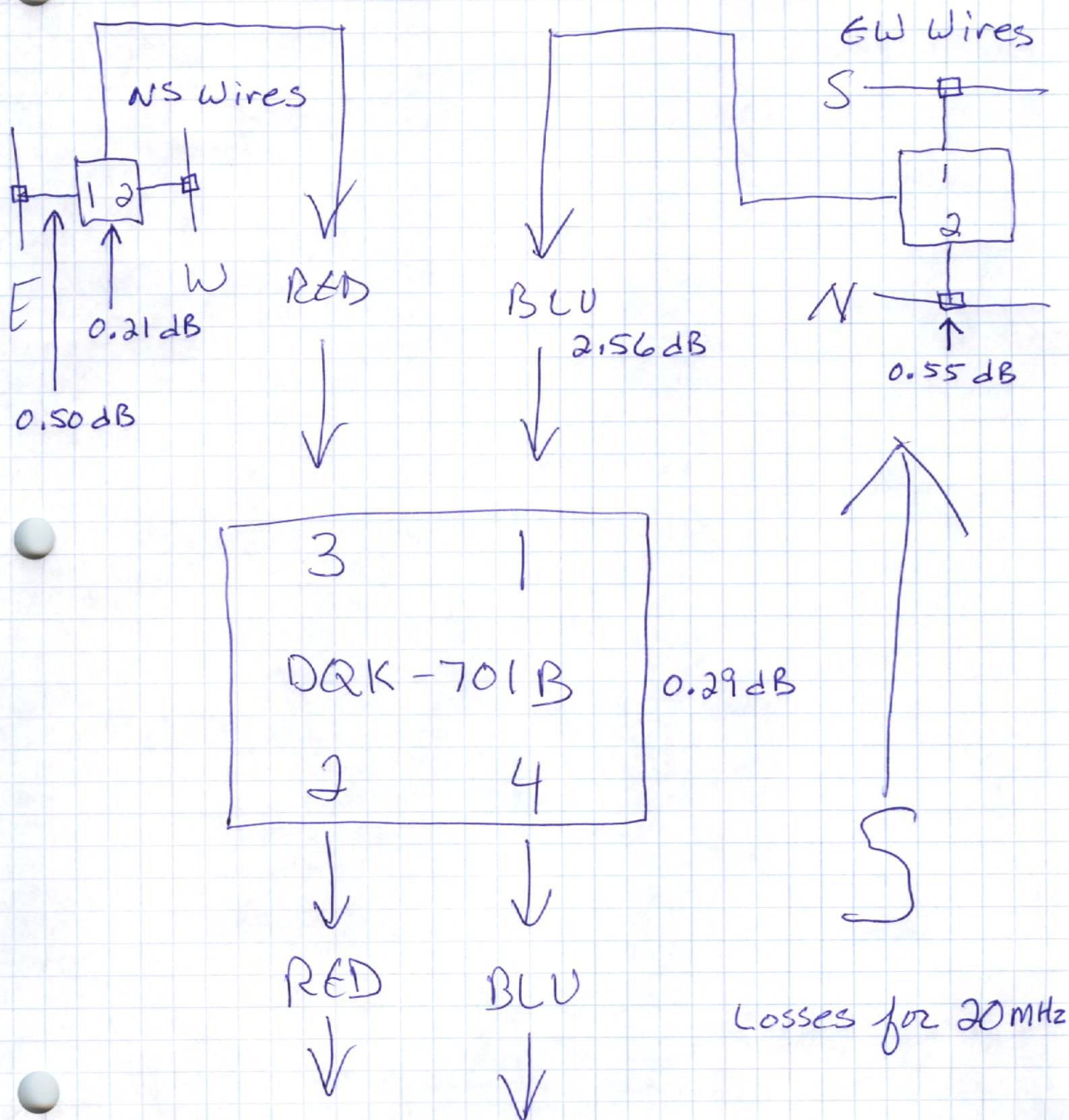
Slight droop in elements as masts are not tall enough to install eye screws at 12' height for center support ropes.

All sweeps performed with all unused ports and/or elements terminated with a 50 ohm load.

### Feed System Loss Analysis

| Freq<br>(MHz) | Feed line loss sweeps performed 15 Mar 2015   |                         |                                                                  |                             | Device sweeps performed 11 Aug 2013               |                                                        |                                                   | Loss<br>Between<br>Element<br>Feed Points<br>and Hybrid<br>Outputs<br>(dB) |
|---------------|-----------------------------------------------|-------------------------|------------------------------------------------------------------|-----------------------------|---------------------------------------------------|--------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------|
|               | Blue and Red feed<br>lines ONLY<br>Round Trip | One Way<br>Loss<br>(dB) | Blue and Red feed lines<br>+ Northern element feed<br>Round Trip | N Feed Line<br>Loss<br>(dB) | Synergy<br>DQK-701B<br>90° Hybrid<br>Loss<br>(dB) | Mini-Circuits<br>ZSC-2-1W+<br>Combiner<br>Loss<br>(dB) | AJ4CO<br>BALUN16-1A<br>16:1 Balun<br>Loss<br>(dB) |                                                                            |
| 16            | -4.47                                         | -2.23                   | -4.89                                                            | -0.43                       | -0.21                                             | -0.20                                                  | -0.52                                             | -3.59                                                                      |
| 18            | -4.79                                         | -2.40                   | -5.26                                                            | -0.46                       | -0.26                                             | -0.21                                                  | -0.54                                             | -3.86                                                                      |
| <b>20</b>     | -5.11                                         | <b>-2.56</b>            | -5.61                                                            | <b>-0.50</b>                | <b>-0.29</b>                                      | <b>-0.21</b>                                           | <b>-0.55</b>                                      | <b>-4.11</b>                                                               |
| 22            | -5.43                                         | -2.72                   | -5.95                                                            | -0.51                       | -0.32                                             | -0.22                                                  | -0.57                                             | -4.34                                                                      |
| 24            | -5.74                                         | -2.87                   | -6.28                                                            | -0.54                       | -0.34                                             | -0.22                                                  | -0.58                                             | -4.55                                                                      |
| 26            | -6.04                                         | -3.02                   | -6.59                                                            | -0.56                       | -0.34                                             | -0.23                                                  | -0.59                                             | -4.73                                                                      |
| 28            | -6.32                                         | -3.16                   | -6.91                                                            | -0.59                       | -0.32                                             | -0.24                                                  | -0.60                                             | -4.91                                                                      |
| 30            | -6.61                                         | -3.31                   | -7.22                                                            | -0.61                       | -0.30                                             | -0.24                                                  | -0.61                                             | -5.07                                                                      |
| 32            | -6.88                                         | -3.44                   | -7.52                                                            | -0.64                       | -0.27                                             | -0.25                                                  | -0.62                                             | -5.22                                                                      |

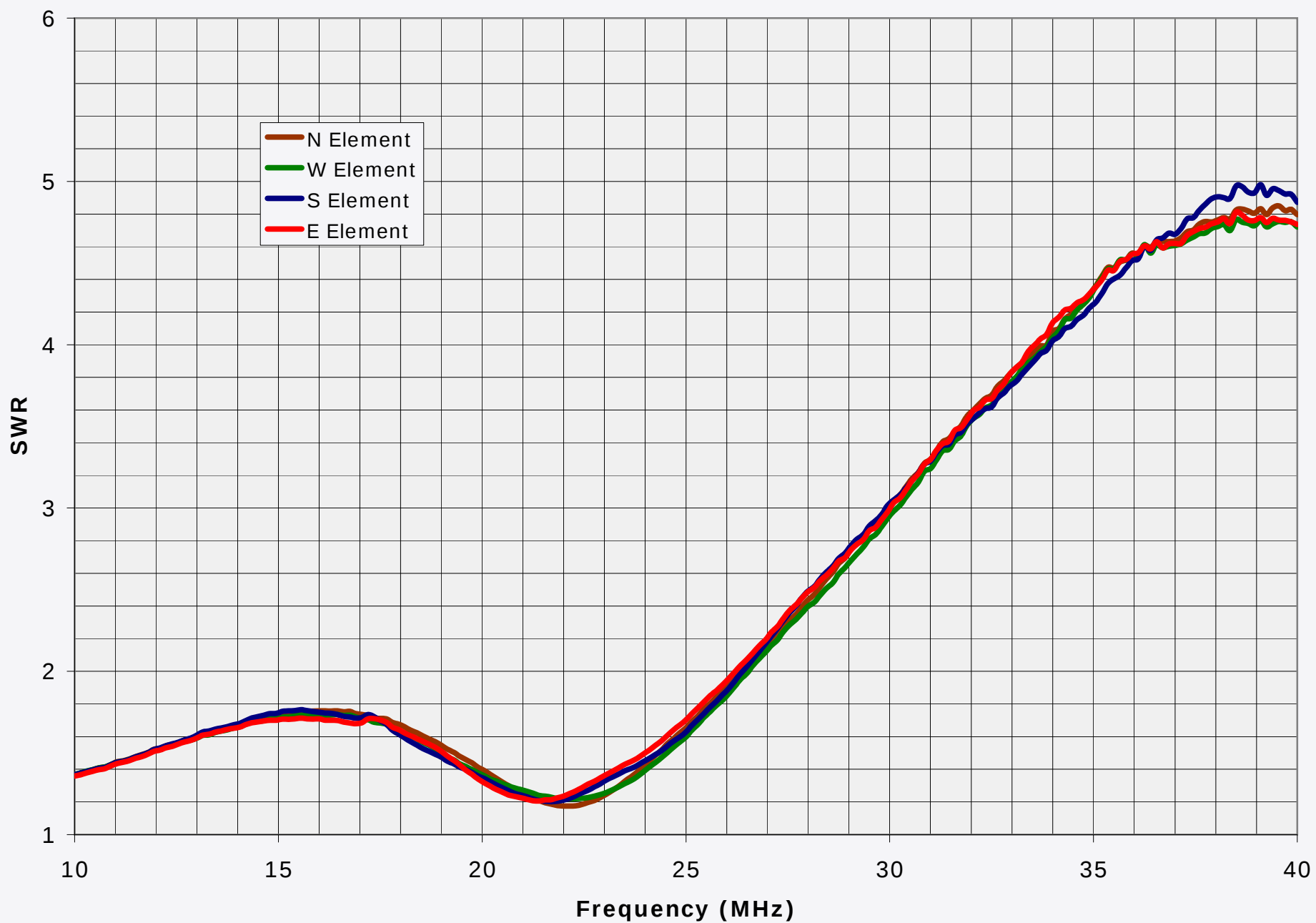
# Wes's TFD Array 3/15/15



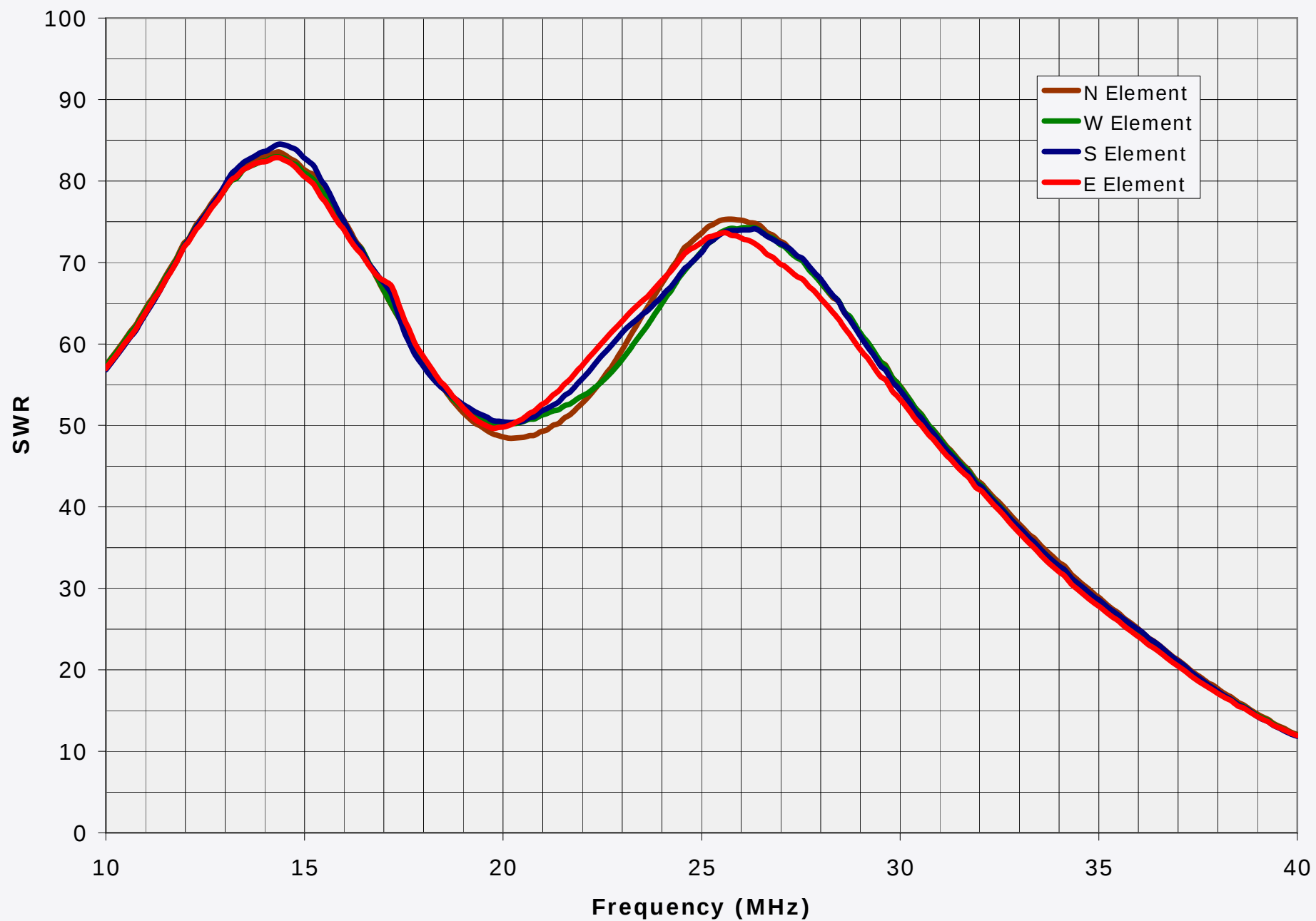
Losses for 20 MHz

Total loss btw feed points and hybrid output @ 20 MHz = 4.11 dB

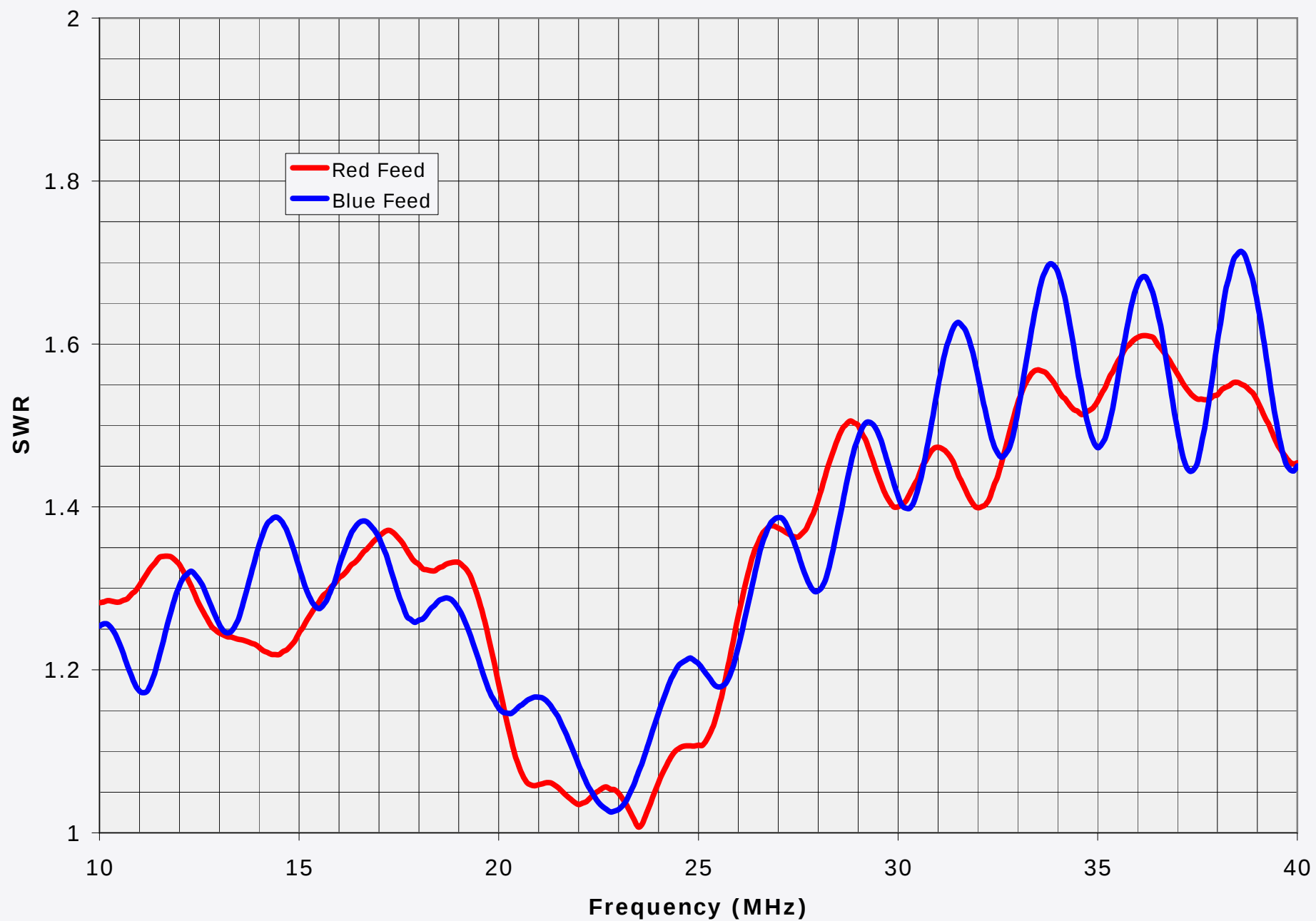
LGM 24' TFD Element Balun Output SWR, as Installed in 25' Square Array



LGM 24' TFD Element Balun Output  $|Z|$ , as Installed in 25' Square Array



LGM 24' TFD Array Shack-End of Feeds SWR



LGM 24' TFD Array Hybrid Outputs SWR

