

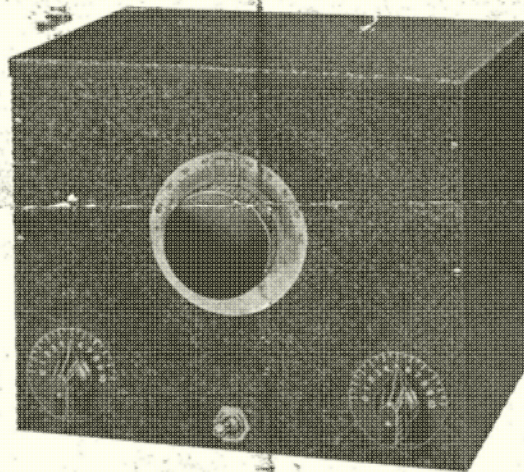
**EDDYSTONE**

**'ALL WORLD TWO'**

Battery Operated Receiver.



British Made.



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**CALIBRATION CURVES**

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STRATTON & CO., LTD., EDDYSTONE WORKS, BIRMINGHAM.

## Eddystone 'All Word Two – Frequency Coverage

The Eddystone All World Two (AW2) is a two valve (0-V-1) regenerative detector receiver manufactured between 1936 and 1940, available either as a kit or ready constructed. Frequency coverage in this set is determined by a single plug-in coil together with the combination of a 'Tank' and 'Bandspread' tuning capacitors. A range of six-pin plug-in coils (Cat. Number 959) were manufactured by Eddystone suitable for use in this set covering the range 150KHz to 33.3MHz thus:

Type	Code Number	Spot Colour	Nominal Frequency Range (MHz)	Inductance
6BB	EXBB	Black	21.400 – 33.300	0.5uH
6LB	EXLIB	Blue	11.500 – 25.000	1.08uH
6Y	EXYEL	Yellow	6.400 – 13.600	3.62uH
6R	EXRE	Red	3.300 – 7.300	14.24uH
6W	EXWO	White	1.800 – 3.950	45.0uH
6P	EXPI	Pink	0.924 – 2.000	0.188mH
6G	EXGO	Green	0.590 – 1.153	0.420mH
6BR	EXBRO	Brown	0.300 – 0.612	1.900mH
6GY	EXDOY	Grey	0.150 – 0.300	6.98mH

The AW2 was supplied with the 6LB and 6Y coils as standard, covering a nominal frequency range of 6.4Mhz to 25MHz. The combination of the Tank and Bandspread capacitors provide very good bandspread capability. The Tank capacitor (nominally 10 -150pF<sup>1</sup>) is fitted with a 10-position detent plate, allowing the capacitance to be varied in 10 equal (14pF) increments. The 'Bandspread' tuning capacitor is connected in parallel with the Tank capacitor and its capacitance range covers slightly more than the capacitance span of each increment of the Tank capacitor. The actual frequency coverage of the set depends on the constants of the coil in use, the constants of the Bandspread tuning combination and stray inductances/capacitances in the set as constructed.



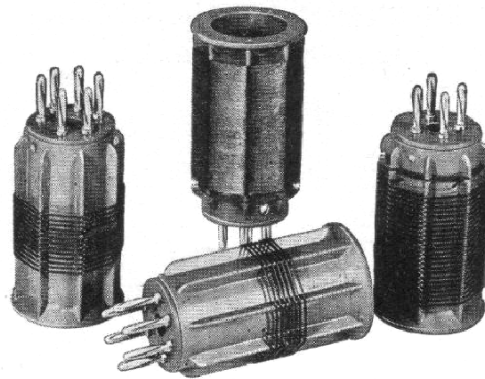
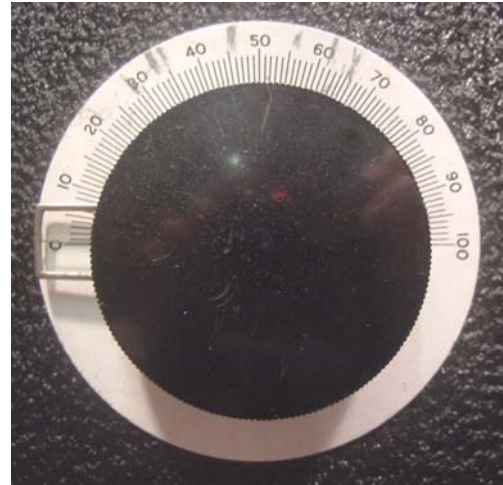
Eddystone provided some combined coil charts on page 3 of the AW2 manual/page 6 of the construction article in Issue 3 of the Eddystone Short Wave Manual, however, these were drawn on such a small scale they would be virtually useless in practice (and were for a 'specimen' receiver that may have different characteristics to the one being used). Thus, in order for the user to determine what frequency was being tuned-in, stations of known frequency had to be

<sup>1</sup> Per 1936-7 Eddystone catalogue description, however, a May, 1936 Wireless World review of the Bandspread tuning outfit noted that the measured capacitance range of the Tank unit was 23 - 171pF and the Bandspread unit 7.5 – 18.5pF.

identified and a record kept of the combined settings of the Tank and Bandsread capacitors, eg. 'Blue Coil, Tank 3, Bandsread 85' would (should) be around 14.5MHz.

While restoring an AW2 recently, a spreadsheet<sup>2</sup> was developed that plots the range covered by the Bandsread tuning control for each of the two standard coils for each incremental setting of the Tank capacitor. These plots have been compiled into Adobe Acrobat format into this set of Calibration Curves for the restored set.

The test set-up was simple: a Triplet Model 3432A signal generator feeding a Dynascan BK Precision Model 1803 digital frequency meter (DFM), the signal also being loosely-coupled to a short aerial connected to the AW2. For each coil and position of the Tank capacitor, five settings of the Bandsread capacitor were selected, these being 0, 25, 50, 75 and 100 on the Bandsread dial. The received frequency for each setting, as determined by the DFM, were recorded. Both the signal generator and the AW2 were allowed an hour to warm-up prior to the measurements being made. The lid was down on the AW2, as this was found to affect the tuned circuit slightly, particularly at the higher frequencies. The set was found to be very stable and once calibrated in this way it was easy to tune to a selected frequency.



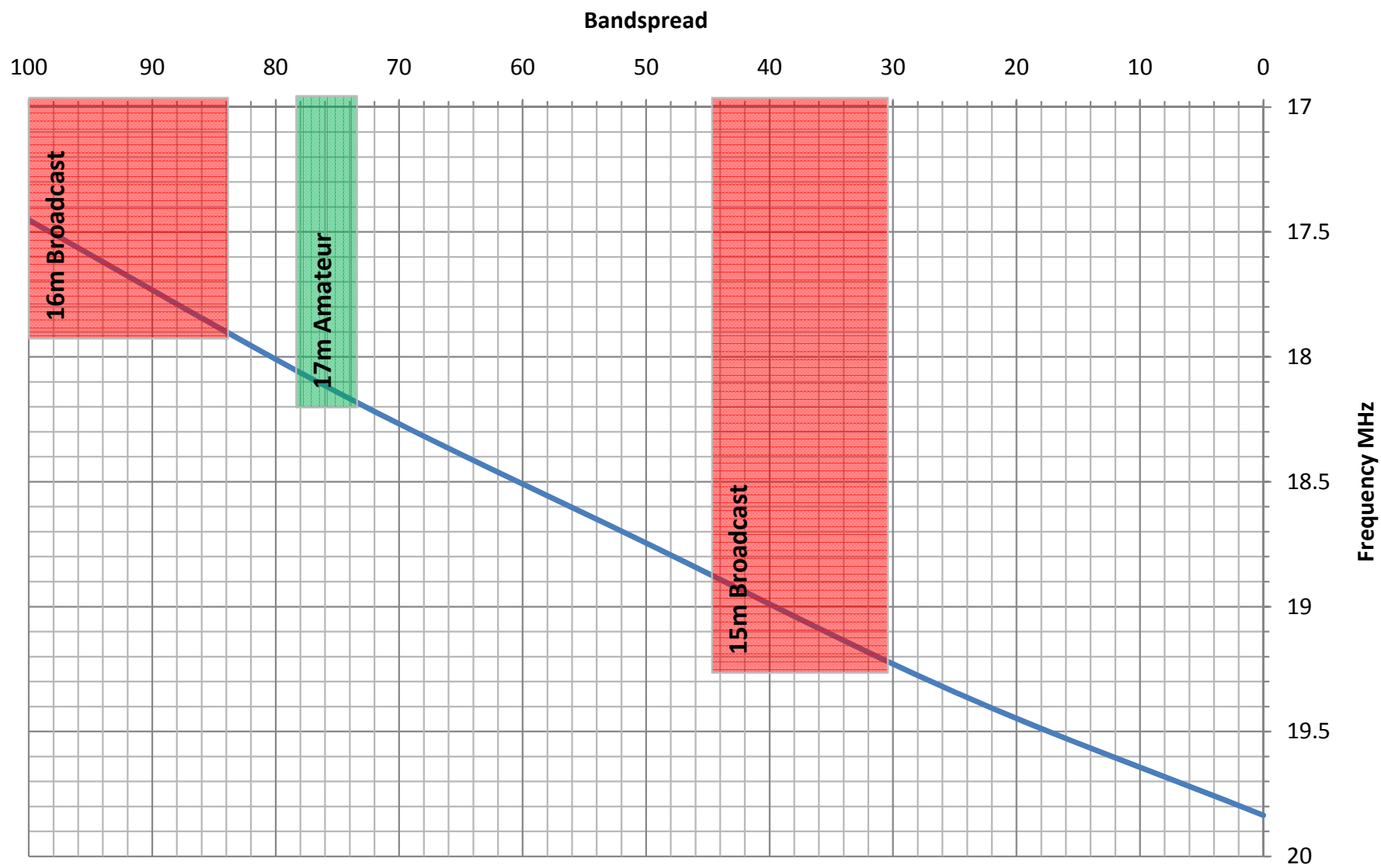
## Interchangeable Coils for all Waves.

D.L.-9. LOW LOSS DIELECTRIC.

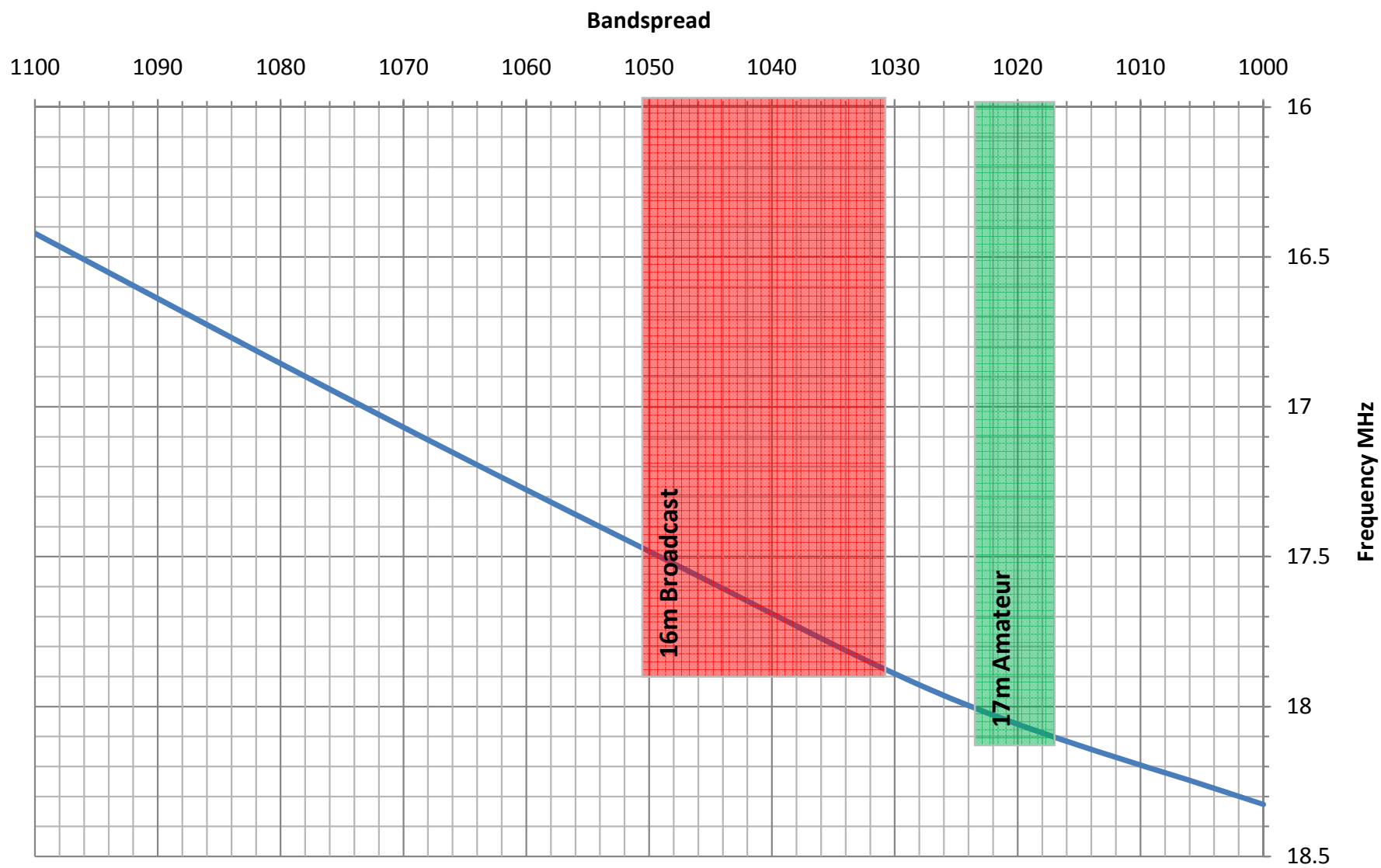
These Coils employ formers made from the new low loss dielectric D.L.-9, a dielectric far superior to bakelite for high frequency use. A complete range is available with 4-pin and 6-pin bases, having two and three windings respectively. The short wave coils are space wound with 22 gauge enamelled copper wire on threaded formers, the higher wave coils being single layer wound with enamelled wire except the long wave coil, which consists of a number of windings in a slotted former. The form shape is such that the coils are highly efficient and also mechanically strong in construction. The range of coils is designed so that 4-pin and 6-pin coils can be used in the same circuit. All wave ranges given are with a .00016 mfd. condenser and are approximate figures allowing for circuit load.

<sup>2</sup> The spreadsheet is available for download at the Eddystone User Group website.

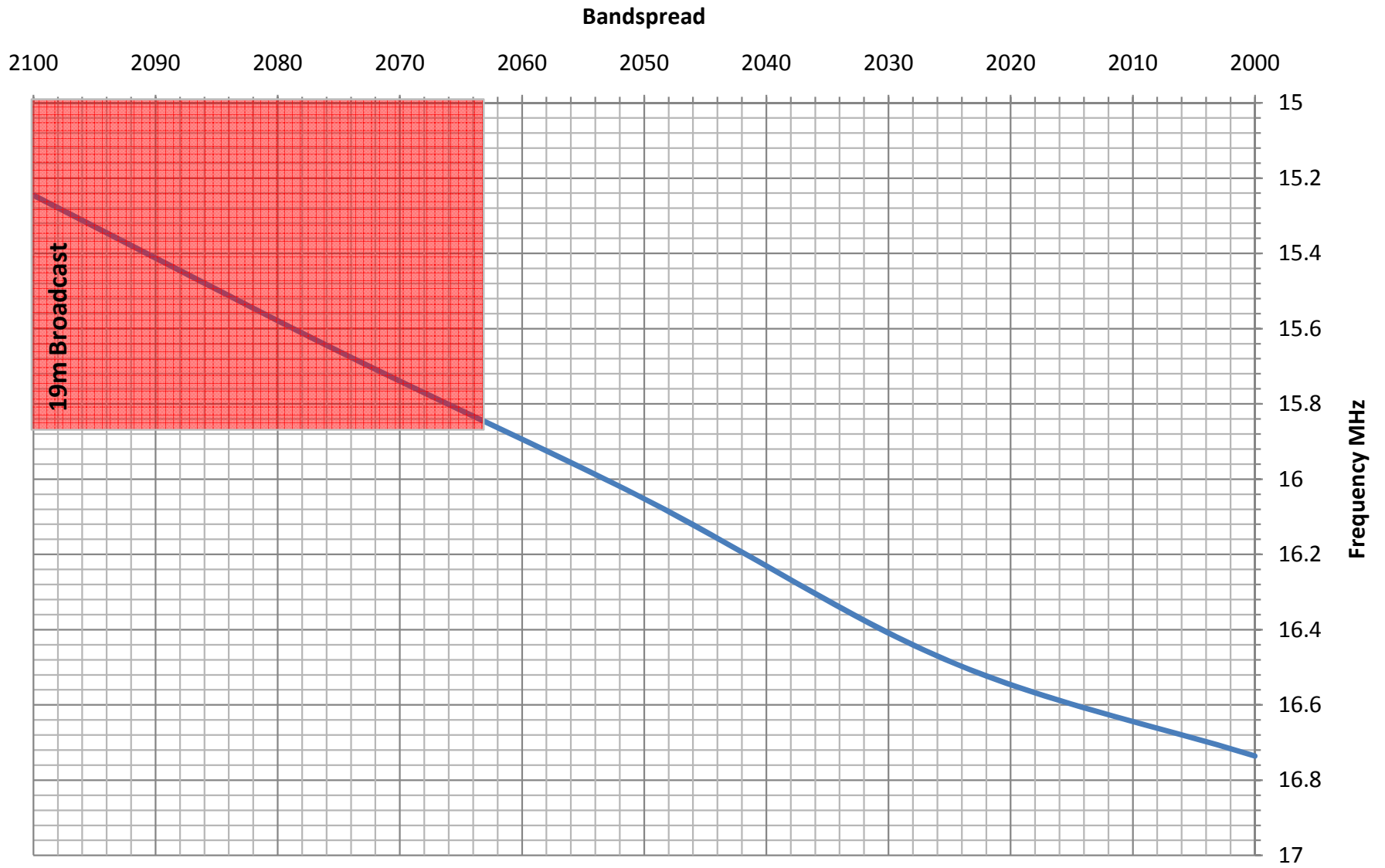
# Blue Coil Tank 0



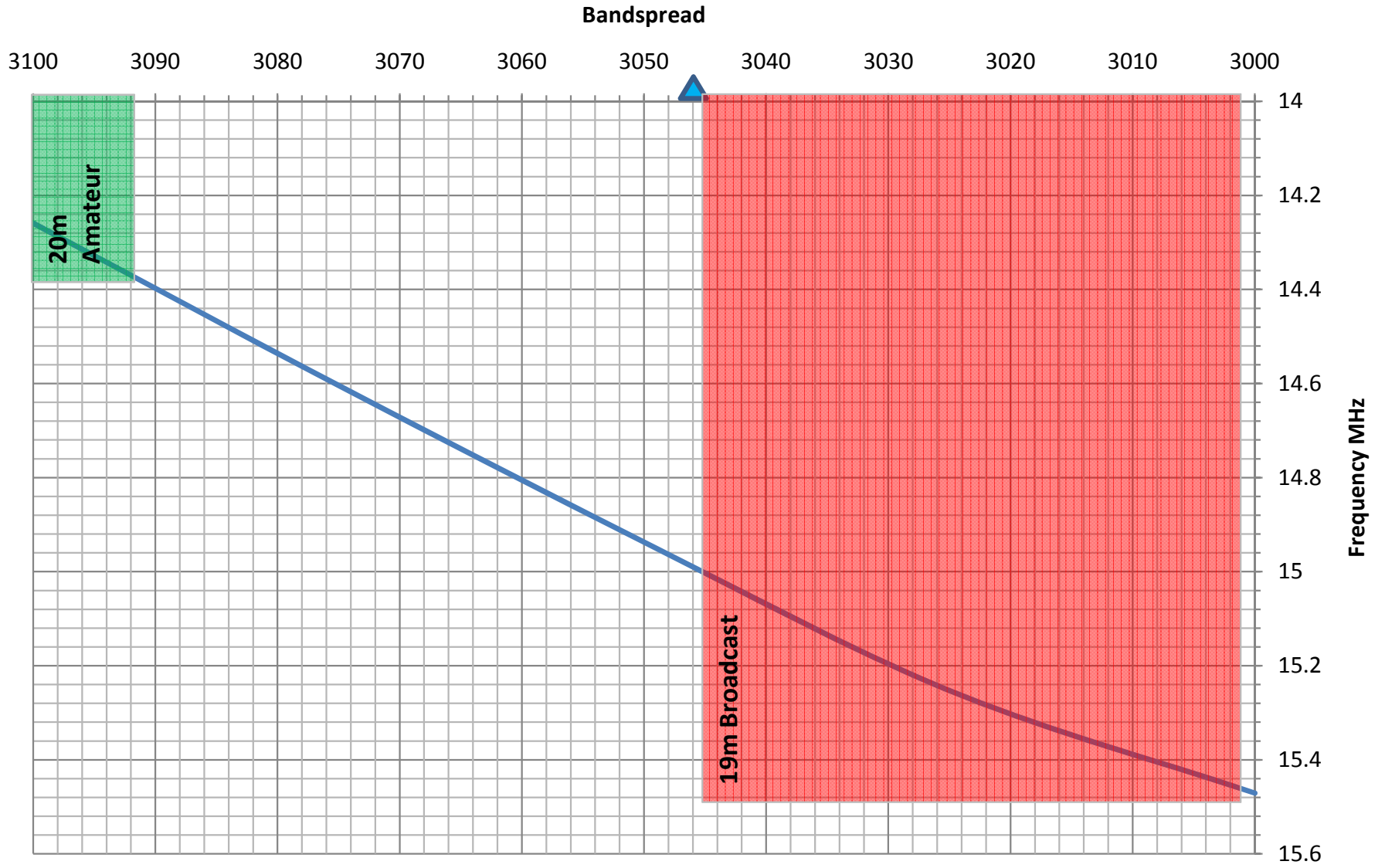
# Blue Coil Tank 1



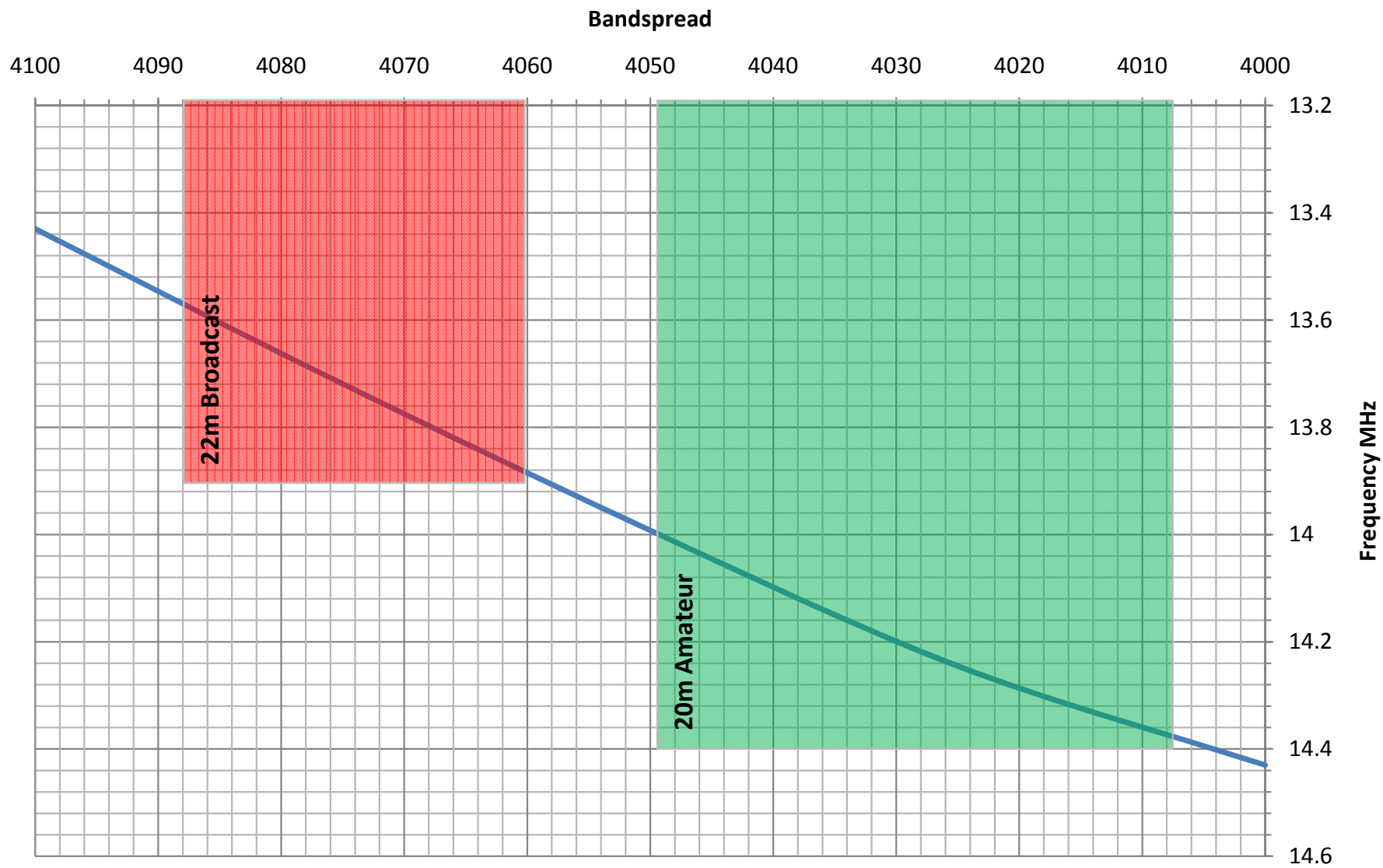
# Blue Coil Tank 2



# Blue Coil Tank 3

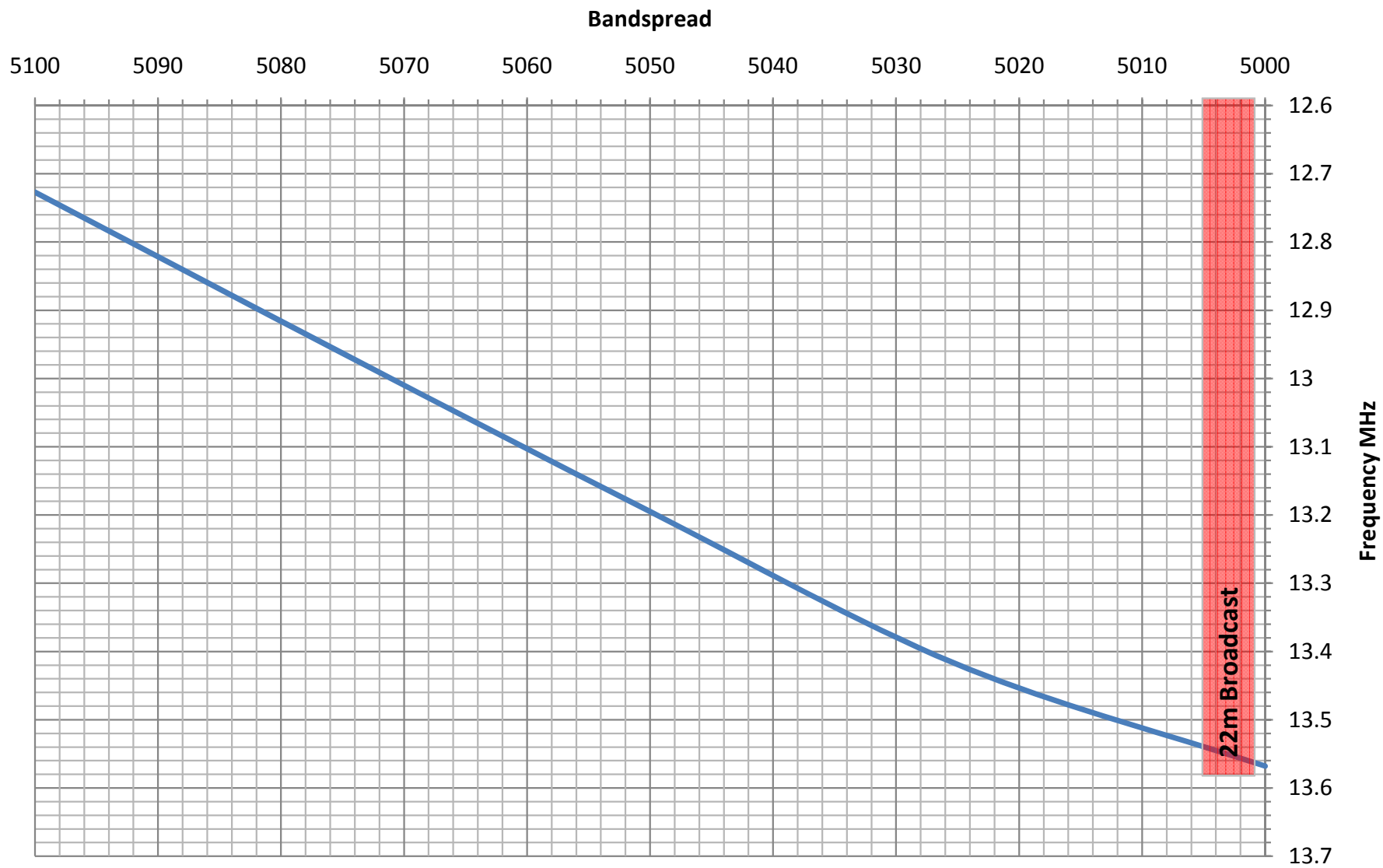


# Blue Coil Tank 4





# Blue Coil Tank 5



# Blue Coil Tank 6

Bandspread

6100 6090 6080 6070 6060 6050 6040 6030 6020 6010 6000

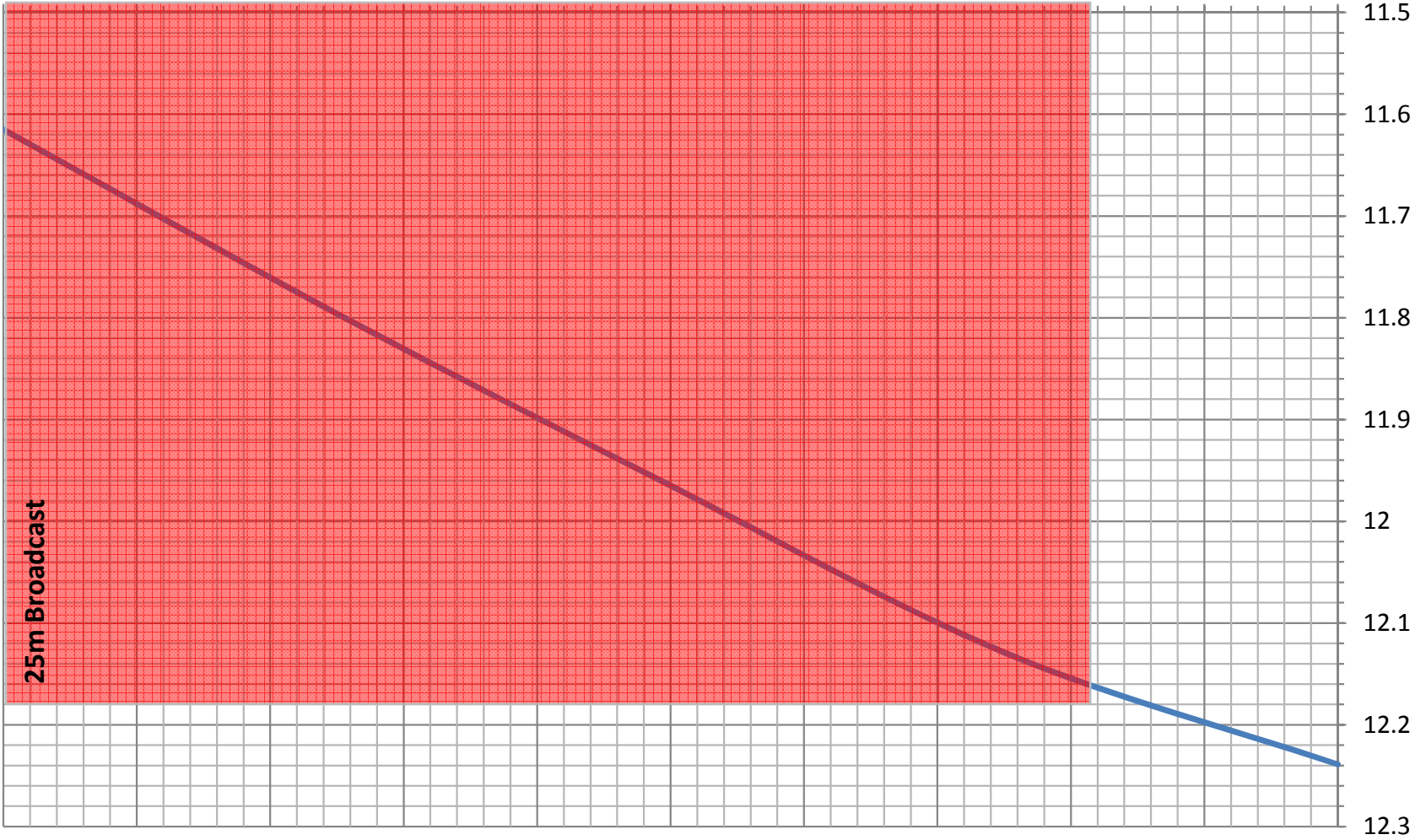


Frequency MHz

# Blue Coil Tank 7

Bandspread

7100 7090 7080 7070 7060 7050 7040 7030 7020 7010 7000



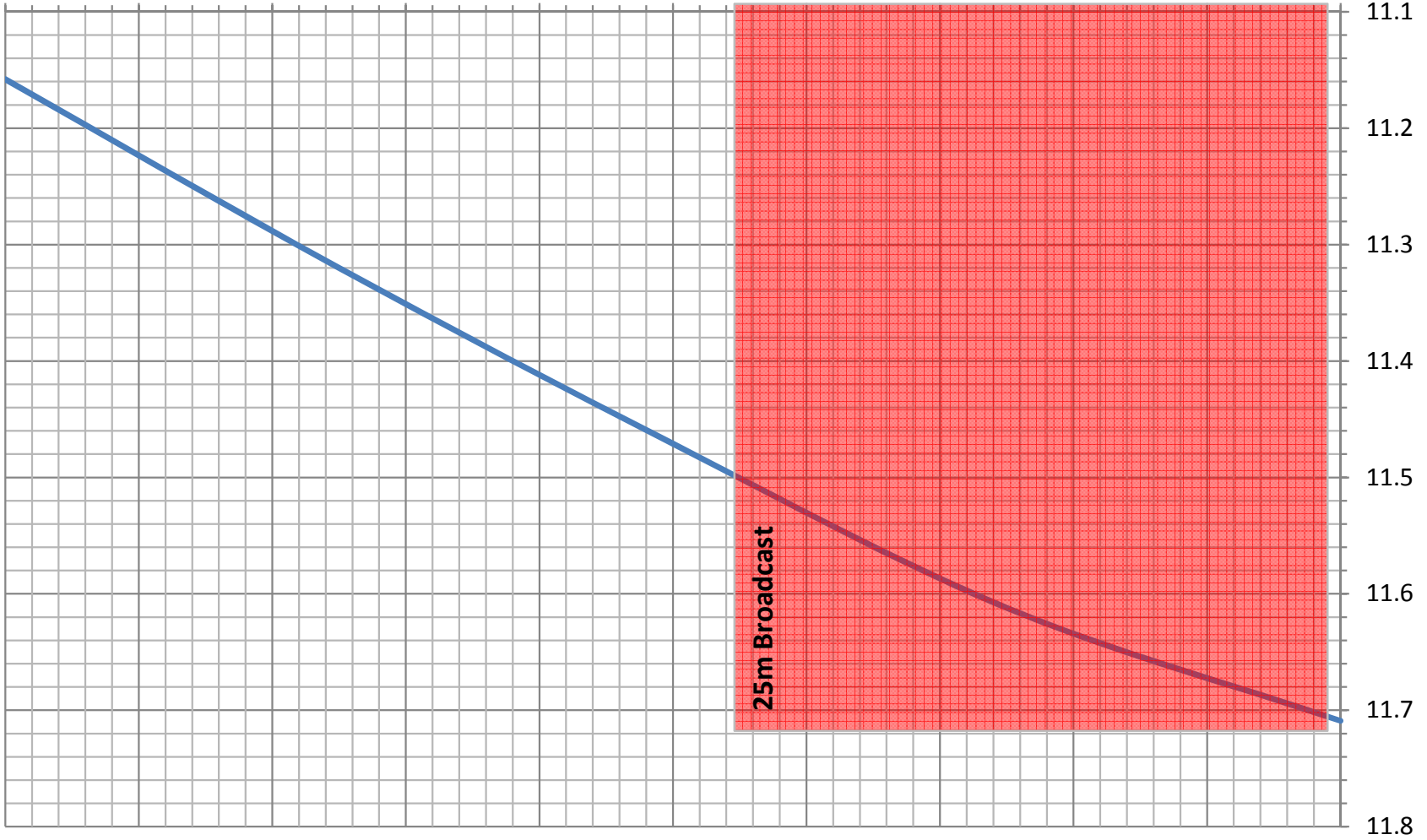
25m Broadcast

Frequency MHz

# Blue Coil Tank 8

Bandspread

8100 8090 8080 8070 8060 8050 8040 8030 8020 8010 8000

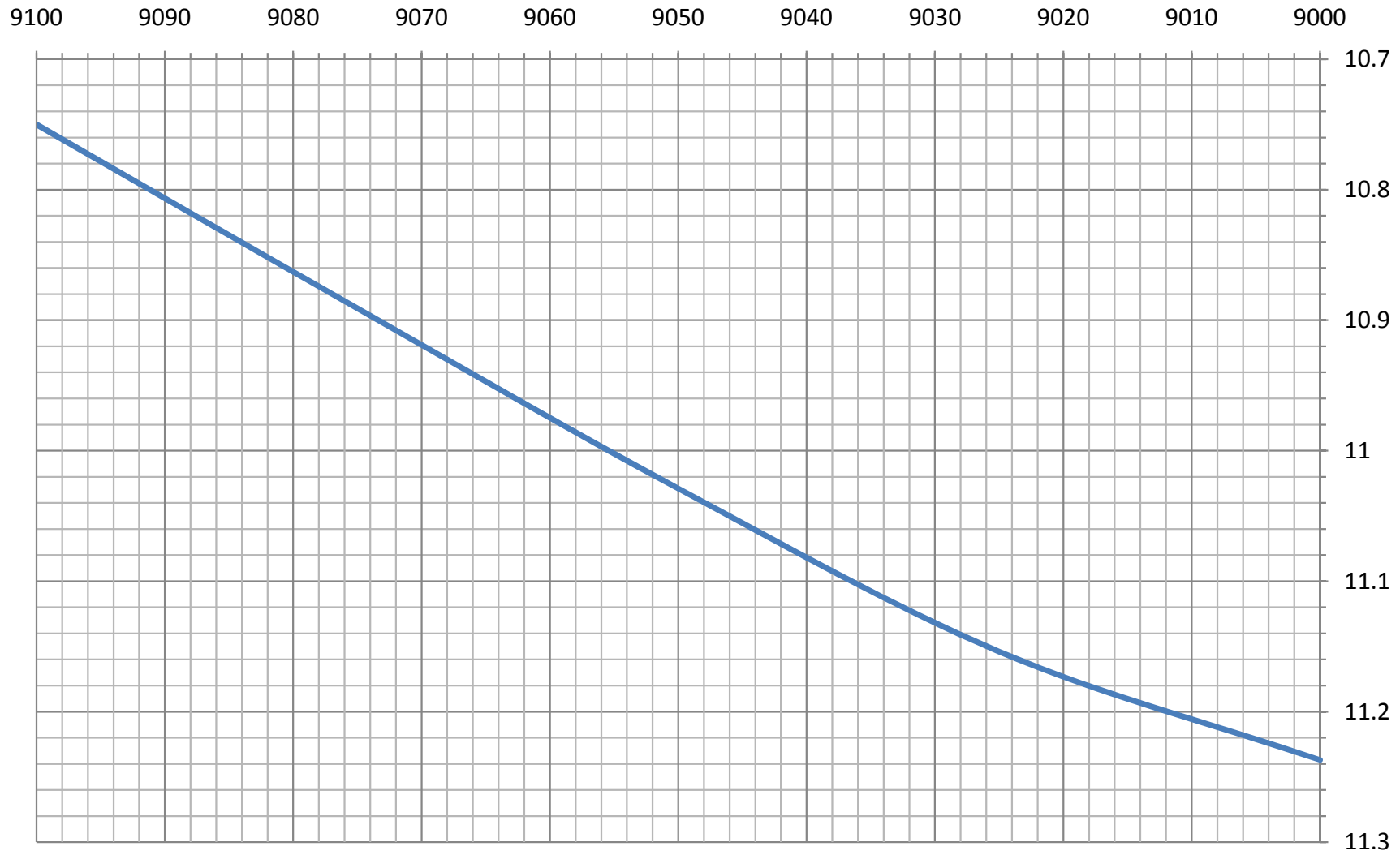


Frequency MHz

25m Broadcast

# Blue Coil Tank 9

Bandspread



# Blue Coil Tank 10

Bandspread

10100

10090

10080

10070

10060

10050

10040

10030

10020

10010

10000

10.35

10.4

10.45

10.5

10.55

10.6

10.65

10.7

10.75

10.8

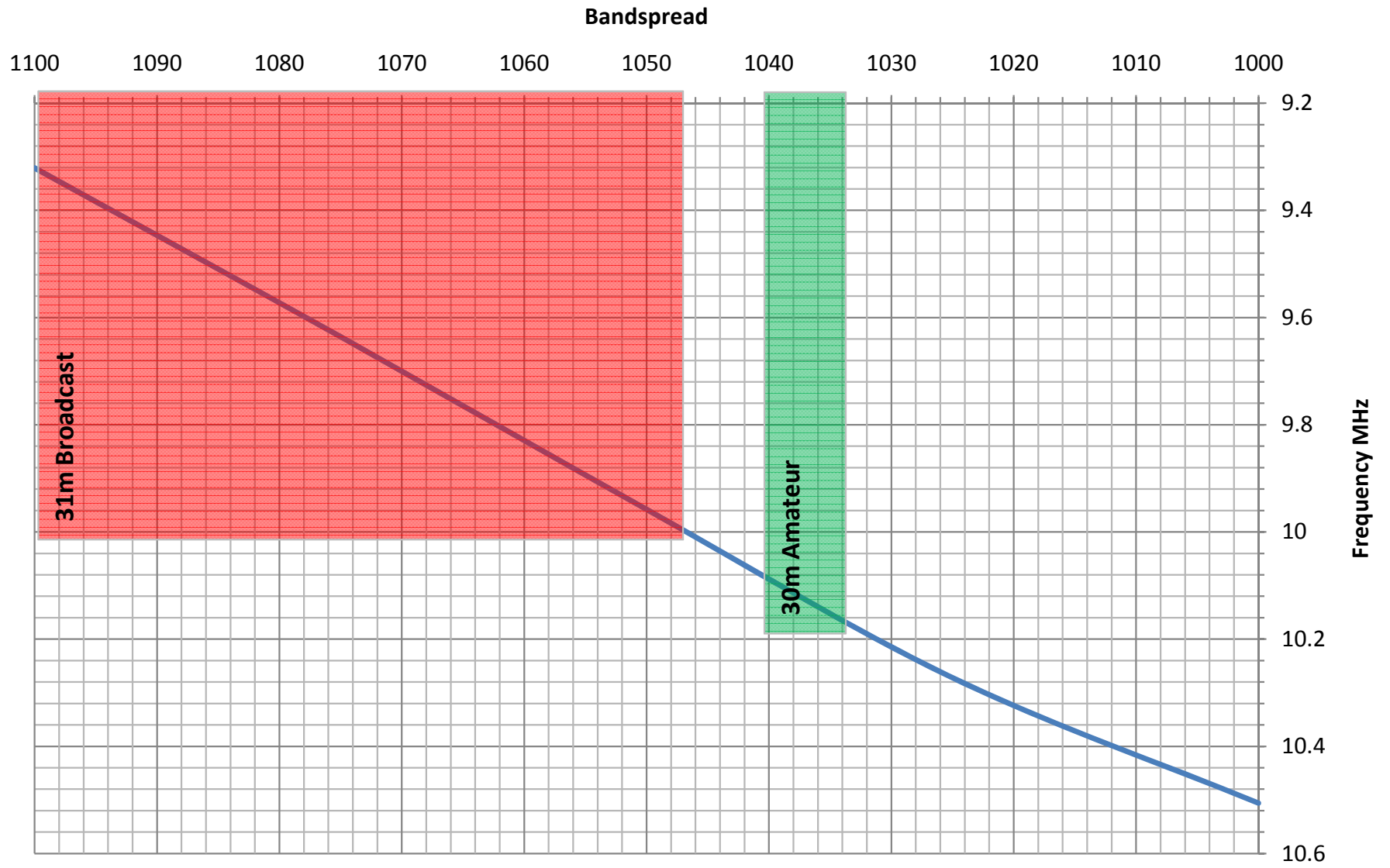
Frequency MHz



# Yellow Coil Tank 0

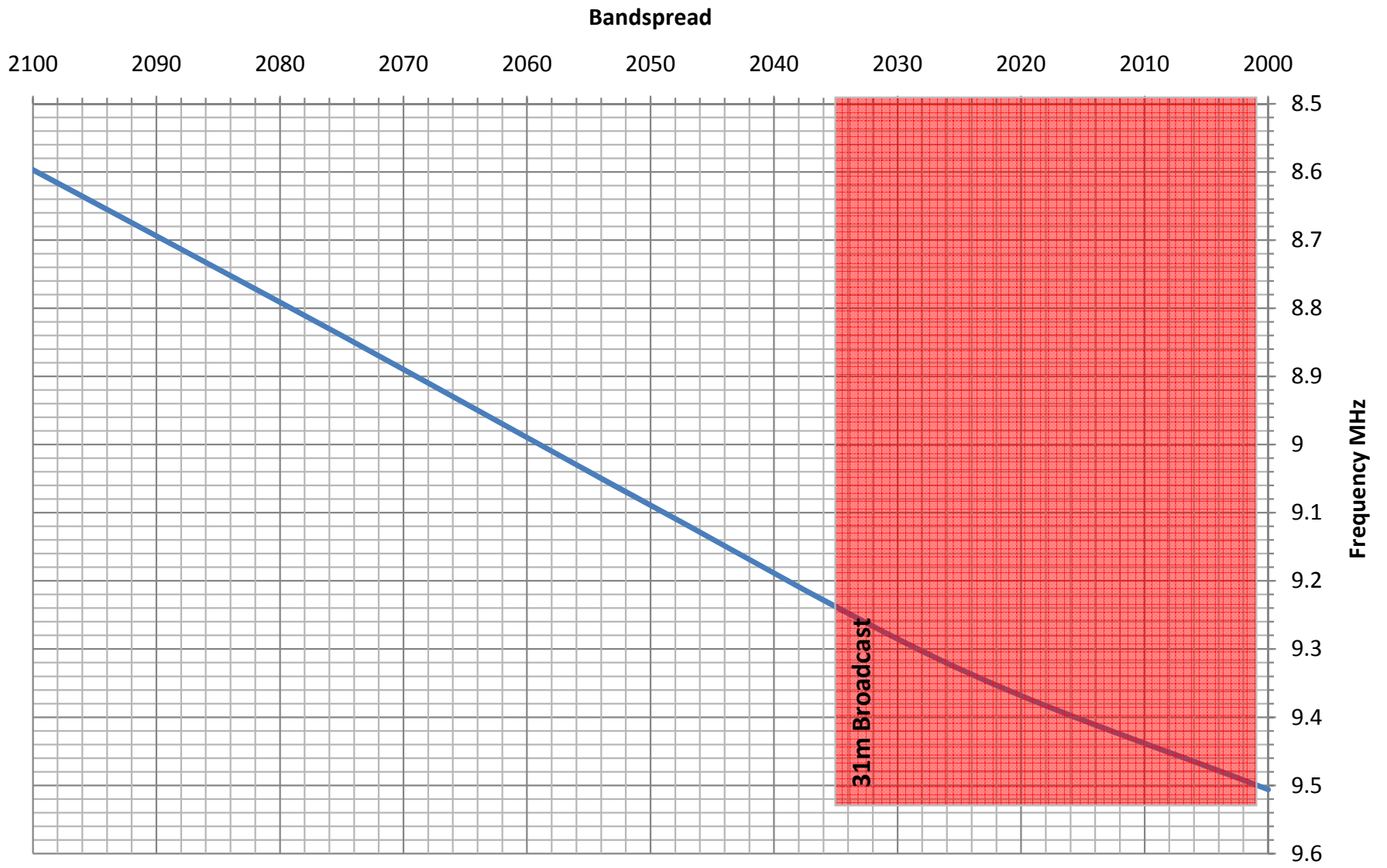


# Yellow Coil Tank 1





# Yellow Coil Tank 2



# Yellow Coil Tank 3

Bandspread

3100

3090

3080

3070

3060

3050

3040

3030

3020

3010

3000

7.9

8

8.1

8.2

8.3

8.4

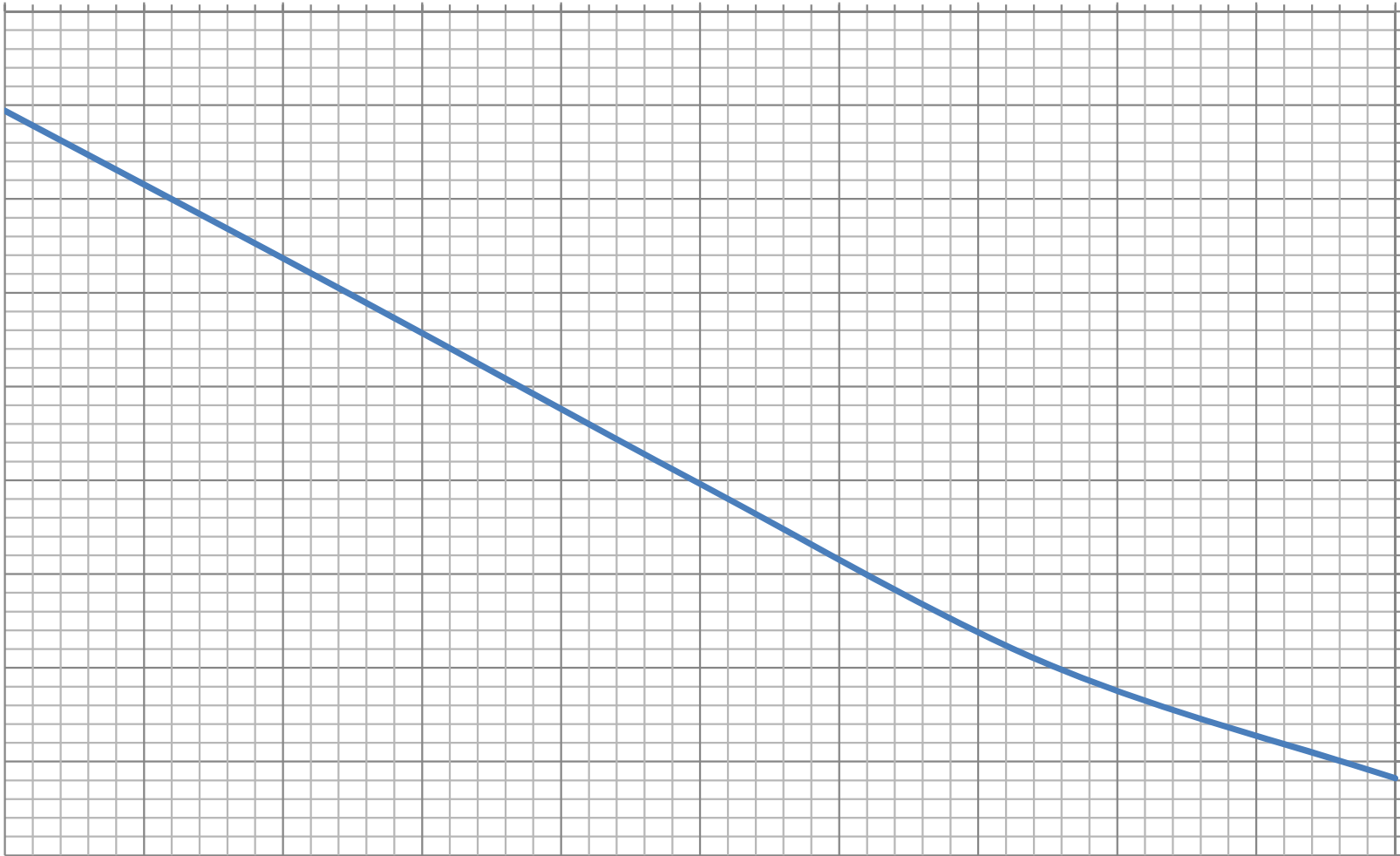
8.5

8.6

8.7

8.8

Frequency MHz



# Yellow Coil Tank 4

Bandspread

4100

4090

4080

4070

4060

4050

4040

4030

4020

4010

4000

7.4

7.5

7.6

7.7

7.8

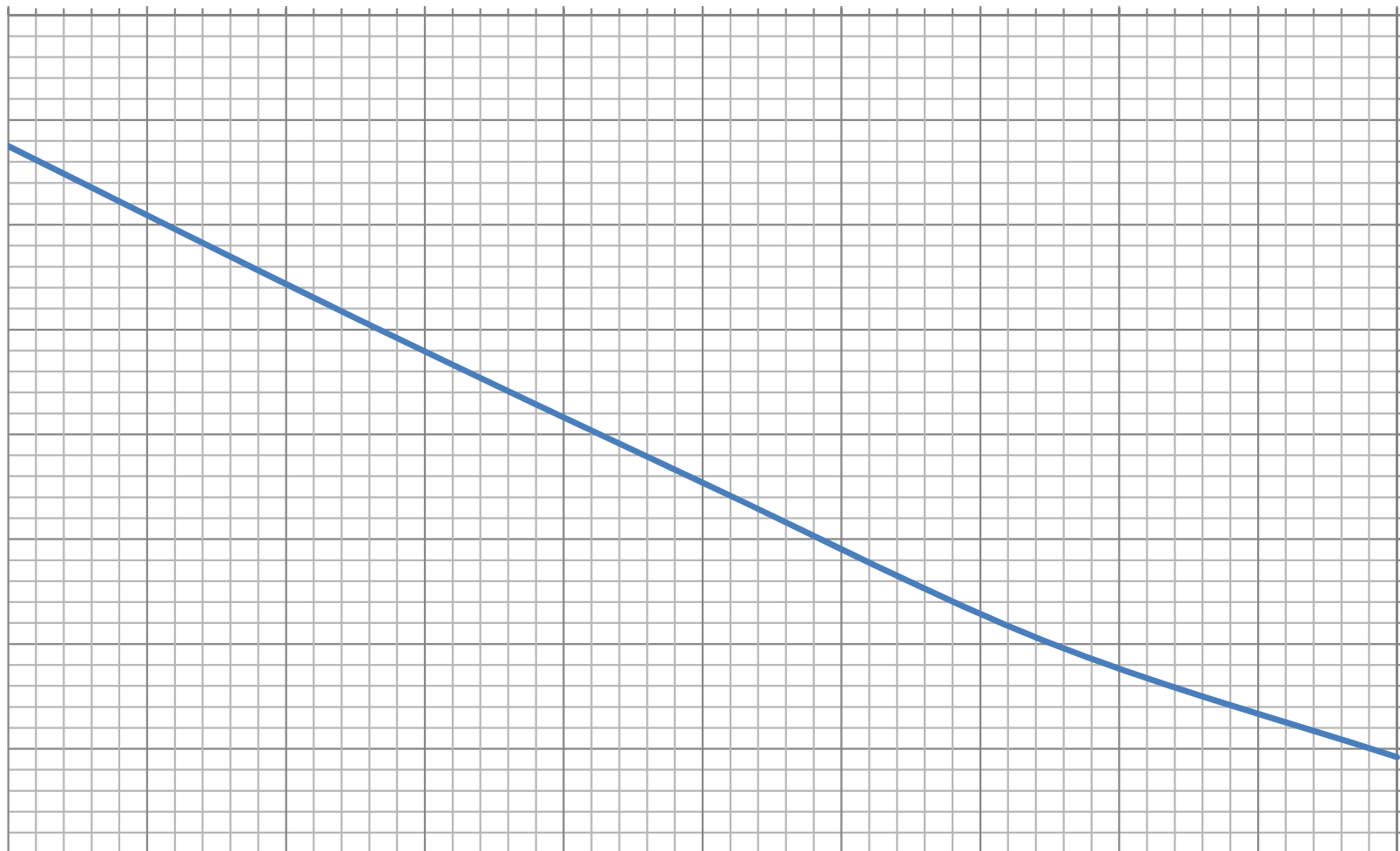
7.9

8

8.1

8.2

Frequency MHz



# Yellow Coil Tank 5



# Yellow Coil Tank 6

Bandspread

6100

6090

6080

6070

6060

6050

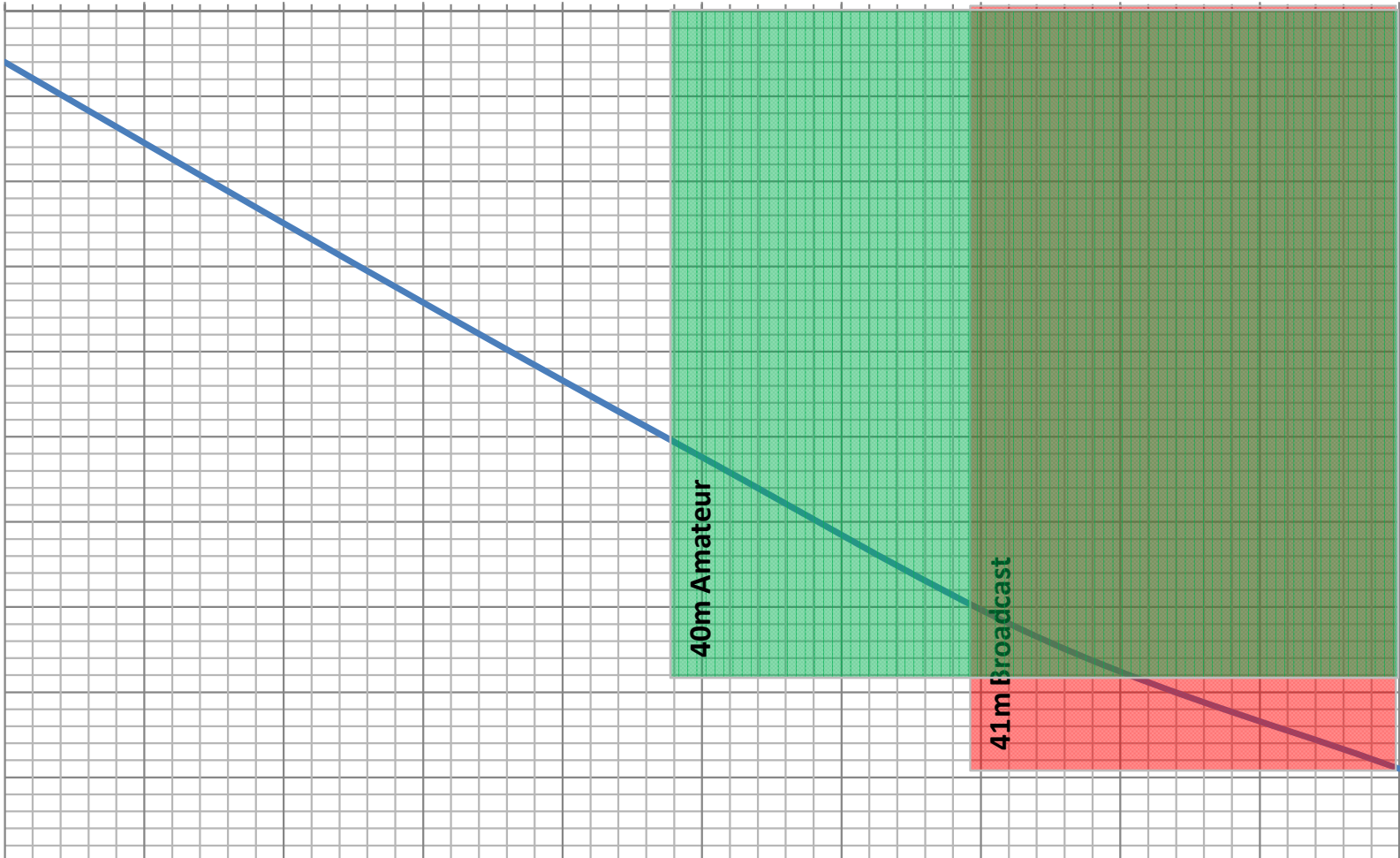
6040

6030

6020

6010

6000



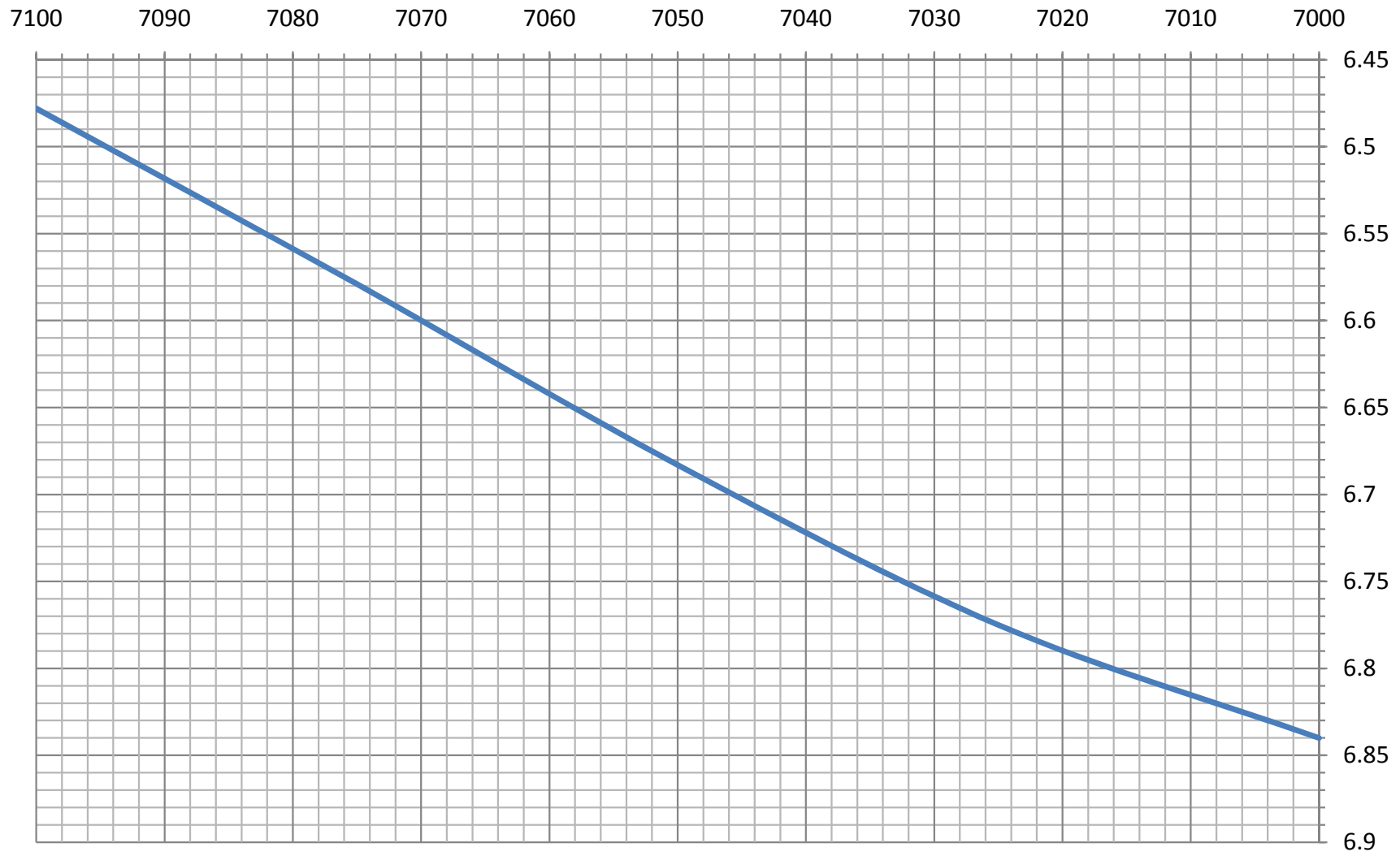
40m Amateur

41m Broadcast

Frequency MHz

# Yellow Coil Tank 7

Bandspread



# Yellow Coil Tank 8

Bandspread

8100 8090 8080 8070 8060 8050 8040 8030 8020 8010 8000



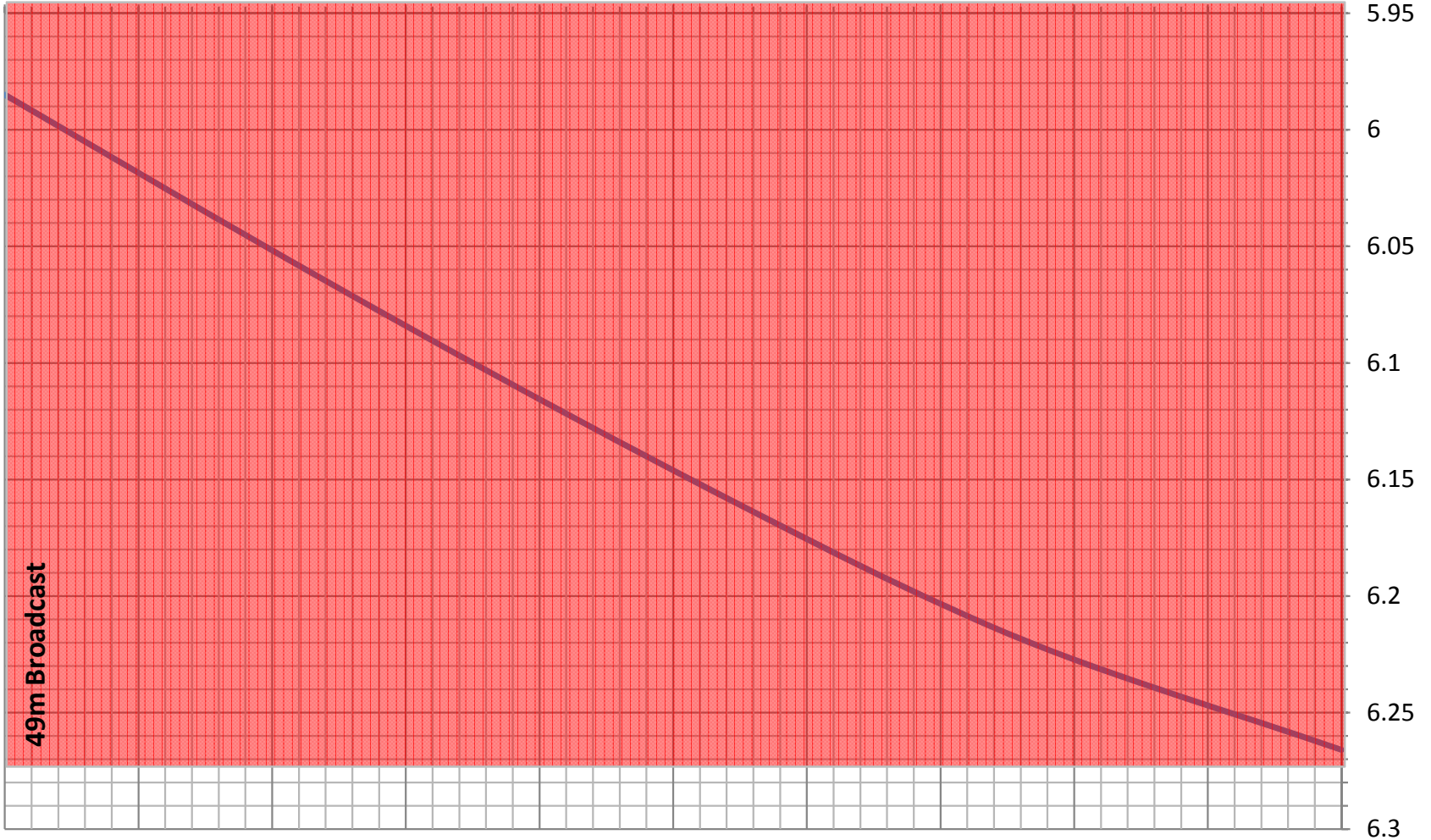
49m Broadcast

Frequency MHz

# Yellow Coil Tank 9

Bandspread

9100 9090 9080 9070 9060 9050 9040 9030 9020 9010 9000





# Yellow Coil Tank 10

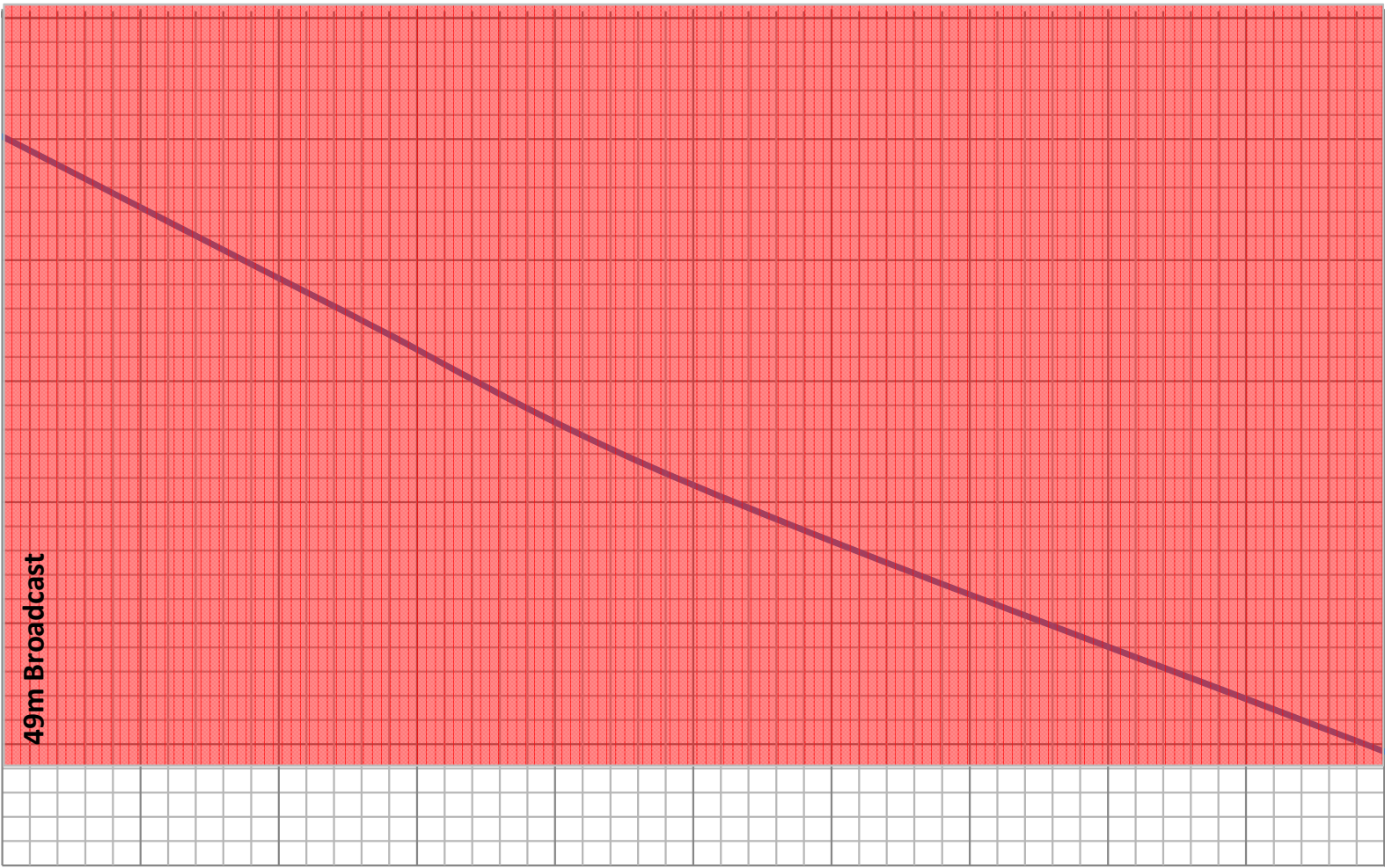
Bandspread

10100 10090 10080 10070 10060 10050 10040 10030 10020 10010 10000

5.75  
5.8  
5.85  
5.9  
5.95  
6  
6.05  
6.1

Frequency MHz

49m Broadcast





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September, 2010