

Detailed scanning report of "Demo Project"

1) Project information

Brief project description

Project scan starts 15.02.15 18:40:06 [DD.MM.YY hh:mm:ss]
 Project scan ends 15.02.15 19:25:41 [DD.MM.YY hh:mm:ss]
 Number of data records 372

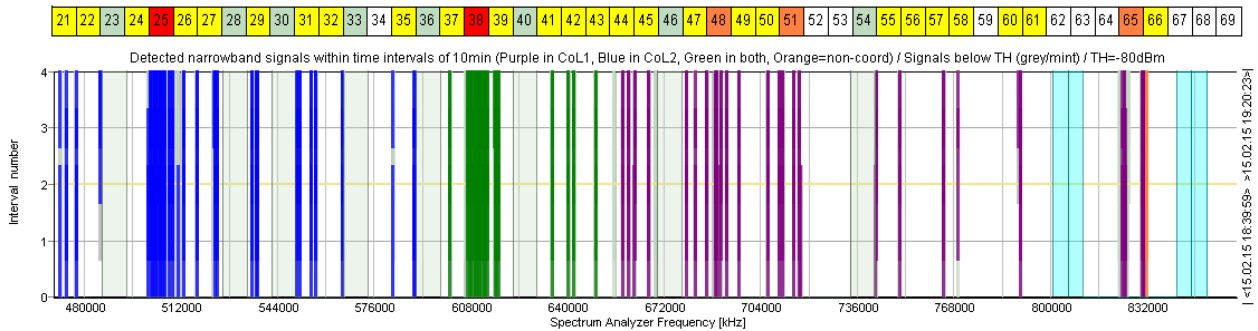
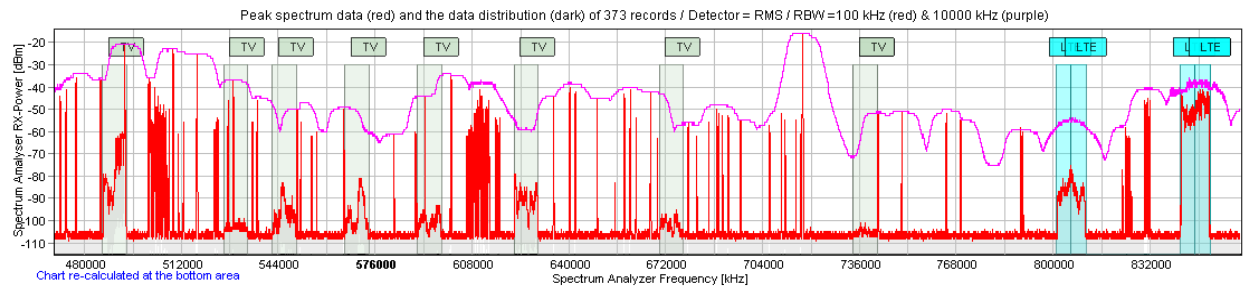
Scan start frequency 470000 kHz
 Scan stop Frequency 863100 kHz
 Statistics threshold -80 dBm
 Sweep points no information available
 Note: data recalculated to stat analysis

Number of scanning units 2

Scanning station 1
 Project name Demo Project
 Company name APWPT
 Equipment Rohde&Schwarz,FSU-8,200278/008,4.71
 Antenna Zirkulare UHF-Antenne A5000
 Last known GPS latitude no information available
 Last known GPS longitude no information available

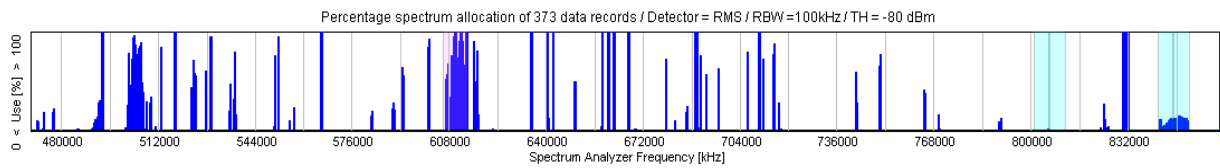
Scanning station 2
 Project name no information available
 Company name no information available
 Equipment no information available
 Antenna no information available
 Last known GPS latitude no information available
 Last known GPS longitude no information available

2) Recorded spectrum allocation

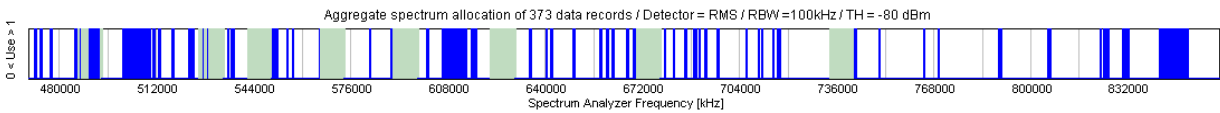


Graphic 1-1: recorded spectrum allocation 470-862 MHz

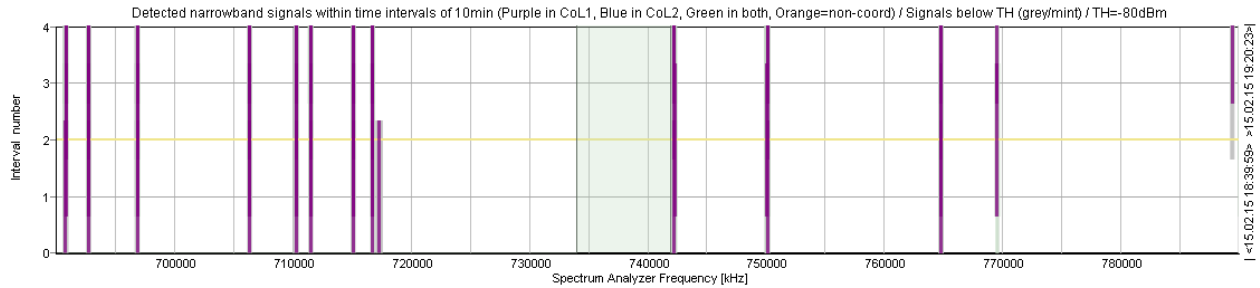
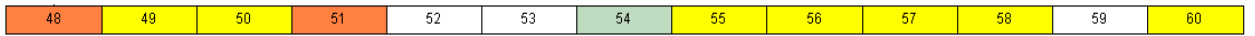
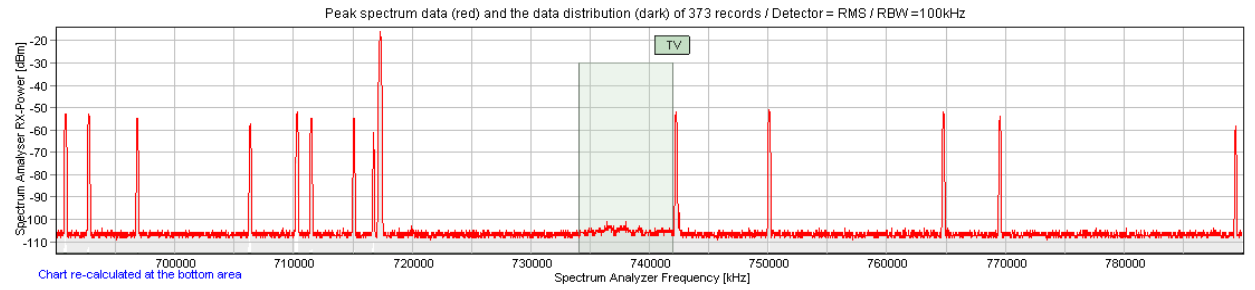
Note: Graphic does not contain manual marked carrier



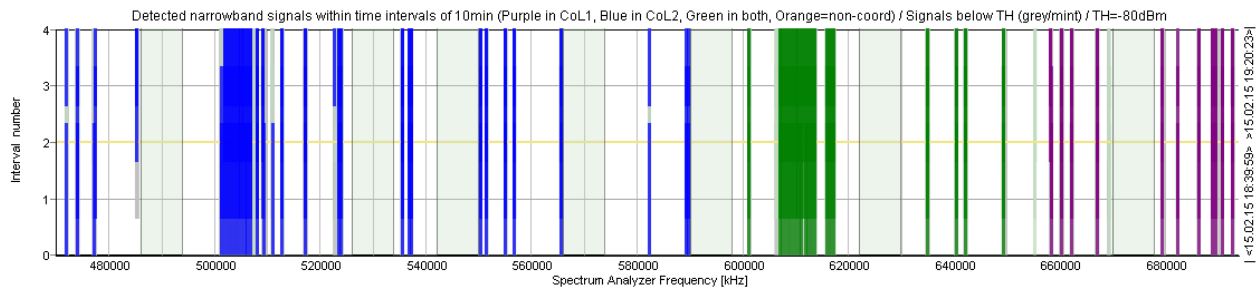
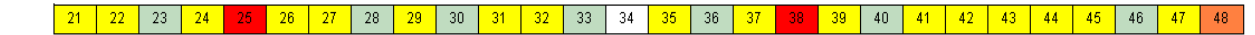
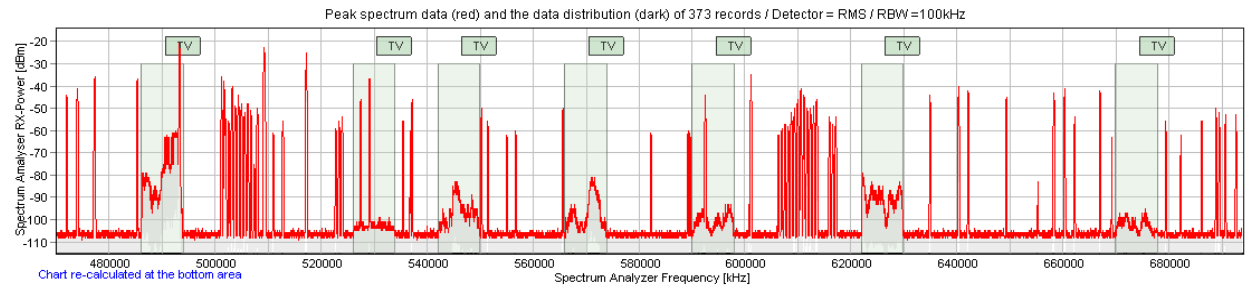
Graphic 1-2: spectrum allocation which exceed the stat threshold level 470-862 MHz



Graphic 1-3: aggregate spectrum allocation which exceed the stat threshold level 470-862 MHz



Graphic 2: recorded spectrum allocation 690-790 MHz
 Note: Graphic does not contain manual marked carrier



Graphic 3: recorded spectrum allocation 470-690 MHz
 Note: Graphic does not contain manual marked carrier

3) Scan statistic information

| Table 1: recorded spectrum allocation | | | | | | | | | |
|---------------------------------------|---------|-------|----------|---------|------|-------|-------|-----|------|
| GapStart | GapStop | GapBW | CarStart | CarStop | BW | CoL1? | CoL2? | TV? | LTE? |
| kHz | kHz | kHz | kHz | kHz | kHz | 0/1 | 0/1 | 0/1 | 0/1 |
| 470000 | 471980 | 1980 | 471980 | 472040 | 60 | 0 | 1 | 0 | 0 |
| 472040 | 473980 | 1940 | 473980 | 474040 | 60 | 0 | 1 | 0 | 0 |
| 474040 | 477280 | 3240 | 477280 | 477340 | 60 | 0 | 1 | 0 | 0 |
| 477340 | 485280 | 7940 | 485280 | 485340 | 60 | 0 | 1 | 0 | 0 |
| 485340 | 486040 | 700 | 486040 | 493920 | 7880 | 0 | 0 | 1 | 0 |
| 493920 | 501200 | 7280 | 501200 | 501260 | 60 | 0 | 1 | 0 | 0 |
| 501260 | 501680 | 420 | 501680 | 501740 | 60 | 0 | 1 | 0 | 0 |
| 501740 | 501960 | 220 | 501960 | 502020 | 60 | 0 | 1 | 0 | 0 |
| 502020 | 502600 | 580 | 502600 | 502660 | 60 | 0 | 1 | 0 | 0 |
| 502660 | 503140 | 480 | 503140 | 503200 | 60 | 0 | 1 | 0 | 0 |
| 503200 | 503740 | 540 | 503740 | 503800 | 60 | 0 | 1 | 0 | 0 |
| 503800 | 504400 | 600 | 504400 | 504460 | 60 | 0 | 1 | 0 | 0 |
| 504460 | 504980 | 520 | 504980 | 505040 | 60 | 0 | 1 | 0 | 0 |
| 505040 | 505560 | 520 | 505560 | 505620 | 60 | 0 | 1 | 0 | 0 |
| 505620 | 506160 | 540 | 506160 | 506220 | 60 | 0 | 1 | 0 | 0 |
| 506220 | 506780 | 560 | 506780 | 506840 | 60 | 0 | 1 | 0 | 0 |
| 506840 | 507380 | 540 | 507380 | 507440 | 60 | 0 | 1 | 0 | 0 |
| 507440 | 507980 | 540 | 507980 | 508040 | 60 | 0 | 1 | 0 | 0 |
| 508040 | 509200 | 1160 | 509200 | 509260 | 60 | 0 | 1 | 0 | 0 |
| 509260 | 509360 | 100 | 509360 | 509420 | 60 | 0 | 1 | 0 | 0 |
| 509420 | 510960 | 1540 | 510960 | 511020 | 60 | 0 | 1 | 0 | 0 |
| 511020 | 512740 | 1720 | 512740 | 512800 | 60 | 0 | 1 | 0 | 0 |
| 512800 | 517200 | 4400 | 517200 | 517260 | 60 | 0 | 1 | 0 | 0 |
| 517260 | 522720 | 5460 | 522720 | 522780 | 60 | 0 | 1 | 0 | 0 |
| 522780 | 523400 | 620 | 523400 | 523460 | 60 | 0 | 1 | 0 | 0 |
| 523460 | 523980 | 520 | 523980 | 524040 | 60 | 0 | 1 | 0 | 0 |
| 524040 | 526040 | 2000 | 526040 | 533920 | 7880 | 0 | 0 | 1 | 0 |
| 533920 | 535460 | 1540 | 535460 | 535520 | 60 | 0 | 1 | 0 | 0 |
| 535520 | 536820 | 1300 | 536820 | 536880 | 60 | 0 | 1 | 0 | 0 |
| 536880 | 537160 | 280 | 537160 | 537220 | 60 | 0 | 1 | 0 | 0 |
| 537220 | 542040 | 4820 | 542040 | 549920 | 7880 | 0 | 0 | 1 | 0 |
| 549920 | 550280 | 360 | 550280 | 550340 | 60 | 0 | 1 | 0 | 0 |
| 550340 | 551460 | 1120 | 551460 | 551520 | 60 | 0 | 1 | 0 | 0 |
| 551520 | 555100 | 3580 | 555100 | 555160 | 60 | 0 | 1 | 0 | 0 |
| 555160 | 556740 | 1580 | 556740 | 556800 | 60 | 0 | 1 | 0 | 0 |
| 556800 | 565640 | 8840 | 565640 | 565700 | 60 | 0 | 1 | 0 | 0 |
| 565700 | 566040 | 340 | 566040 | 573920 | 7880 | 0 | 0 | 1 | 0 |
| 573920 | 582260 | 8340 | 582260 | 582320 | 60 | 0 | 1 | 0 | 0 |
| 582320 | 589280 | 6960 | 589280 | 589340 | 60 | 0 | 1 | 0 | 0 |
| 589340 | 589660 | 320 | 589660 | 589720 | 60 | 0 | 1 | 0 | 0 |
| 589720 | 590040 | 320 | 590040 | 597920 | 7880 | 0 | 0 | 1 | 0 |
| 597920 | 601160 | 3240 | 601160 | 601220 | 60 | 1 | 1 | 0 | 0 |
| 601220 | 606940 | 5720 | 606940 | 607000 | 60 | 1 | 1 | 0 | 0 |
| 607000 | 607540 | 540 | 607540 | 607600 | 60 | 1 | 1 | 0 | 0 |
| 607600 | 608140 | 540 | 608140 | 608200 | 60 | 1 | 1 | 0 | 0 |
| 608200 | 608740 | 540 | 608740 | 608800 | 60 | 1 | 1 | 0 | 0 |
| 608800 | 609360 | 560 | 609360 | 609420 | 60 | 1 | 1 | 0 | 0 |
| 609420 | 609900 | 480 | 609900 | 609960 | 60 | 1 | 1 | 0 | 0 |
| 609960 | 610500 | 540 | 610500 | 610560 | 60 | 1 | 1 | 0 | 0 |
| 610560 | 611140 | 580 | 611140 | 611200 | 60 | 1 | 1 | 0 | 0 |
| 611200 | 611780 | 580 | 611780 | 611840 | 60 | 1 | 1 | 0 | 0 |
| 611840 | 612340 | 500 | 612340 | 612400 | 60 | 1 | 1 | 0 | 0 |

| | | | | | | | | | |
|--------|--------|-------|--------|--------|-------|---|---|---|---|
| 612400 | 612980 | 580 | 612980 | 613040 | 60 | 1 | 1 | 0 | 0 |
| 613040 | 613600 | 560 | 613600 | 613660 | 60 | 1 | 1 | 0 | 0 |
| 613660 | 616000 | 2340 | 616000 | 616060 | 60 | 1 | 1 | 0 | 0 |
| 616060 | 616540 | 480 | 616540 | 616600 | 60 | 1 | 1 | 0 | 0 |
| 616600 | 617100 | 500 | 617100 | 617160 | 60 | 1 | 1 | 0 | 0 |
| 617160 | 622040 | 4880 | 622040 | 629920 | 7880 | 0 | 0 | 1 | 0 |
| 629920 | 634980 | 5060 | 634980 | 635040 | 60 | 1 | 1 | 0 | 0 |
| 635040 | 640360 | 5320 | 640360 | 640420 | 60 | 1 | 1 | 0 | 0 |
| 640420 | 642160 | 1740 | 642160 | 642220 | 60 | 1 | 1 | 0 | 0 |
| 642220 | 649400 | 7180 | 649400 | 649460 | 60 | 1 | 1 | 0 | 0 |
| 649460 | 658300 | 8840 | 658300 | 658360 | 60 | 1 | 0 | 0 | 0 |
| 658360 | 660360 | 2000 | 660360 | 660420 | 60 | 1 | 0 | 0 | 0 |
| 660420 | 662280 | 1860 | 662280 | 662340 | 60 | 1 | 0 | 0 | 0 |
| 662340 | 667080 | 4740 | 667080 | 667140 | 60 | 1 | 0 | 0 | 0 |
| 667140 | 669300 | 2160 | 669300 | 669360 | 60 | 1 | 0 | 0 | 0 |
| 669360 | 670040 | 680 | 670040 | 677920 | 7880 | 0 | 0 | 1 | 0 |
| 677920 | 679480 | 1560 | 679480 | 679540 | 60 | 1 | 0 | 0 | 0 |
| 679540 | 682320 | 2780 | 682320 | 682380 | 60 | 1 | 0 | 0 | 0 |
| 682380 | 686300 | 3920 | 686300 | 686360 | 60 | 1 | 0 | 0 | 0 |
| 686360 | 688960 | 2600 | 688960 | 689020 | 60 | 1 | 0 | 0 | 0 |
| 689020 | 689560 | 540 | 689560 | 689620 | 60 | 1 | 0 | 0 | 0 |
| 689620 | 690780 | 1160 | 690780 | 690840 | 60 | 1 | 0 | 0 | 0 |
| 690840 | 692740 | 1900 | 692740 | 692800 | 60 | 1 | 0 | 0 | 0 |
| 692800 | 696820 | 4020 | 696820 | 696880 | 60 | 1 | 0 | 0 | 0 |
| 696880 | 706340 | 9460 | 706340 | 706400 | 60 | 1 | 0 | 0 | 0 |
| 706400 | 710260 | 3860 | 710260 | 710320 | 60 | 1 | 0 | 0 | 0 |
| 710320 | 711480 | 1160 | 711480 | 711540 | 60 | 1 | 0 | 0 | 0 |
| 711540 | 715060 | 3520 | 715060 | 715120 | 60 | 1 | 0 | 0 | 0 |
| 715120 | 716740 | 1620 | 716740 | 716800 | 60 | 1 | 0 | 0 | 0 |
| 716800 | 717280 | 480 | 717280 | 717340 | 60 | 1 | 0 | 0 | 0 |
| 717340 | 734040 | 16700 | 734040 | 741920 | 7880 | 0 | 0 | 1 | 0 |
| 741920 | 742220 | 300 | 742220 | 742280 | 60 | 1 | 0 | 0 | 0 |
| 742280 | 750080 | 7800 | 750080 | 750140 | 60 | 1 | 0 | 0 | 0 |
| 750140 | 764760 | 14620 | 764760 | 764820 | 60 | 1 | 0 | 0 | 0 |
| 764820 | 769520 | 4700 | 769520 | 769580 | 60 | 1 | 0 | 0 | 0 |
| 769580 | 789400 | 19820 | 789400 | 789460 | 60 | 1 | 0 | 0 | 0 |
| 789460 | 790080 | 620 | 790080 | 790140 | 60 | 1 | 0 | 0 | 0 |
| 790140 | 800980 | 10840 | 800980 | 810980 | 10000 | 0 | 0 | 0 | 1 |
| 810980 | 822980 | 12000 | 822980 | 823040 | 60 | 1 | 0 | 0 | 0 |
| 823040 | 823980 | 940 | 823980 | 824040 | 60 | 1 | 0 | 0 | 0 |
| 824040 | 824500 | 460 | 824500 | 824560 | 60 | 1 | 0 | 0 | 0 |
| 824560 | 825000 | 440 | 825000 | 825060 | 60 | 1 | 0 | 0 | 0 |
| 825060 | 825500 | 440 | 825500 | 825560 | 60 | 1 | 0 | 0 | 0 |
| 825560 | 830380 | 4820 | 830380 | 830440 | 60 | 1 | 0 | 0 | 0 |
| 830440 | 830880 | 440 | 830880 | 830940 | 60 | 1 | 0 | 0 | 0 |
| 830940 | 831280 | 340 | 831280 | 831340 | 60 | 1 | 0 | 0 | 0 |
| 831340 | 831960 | 620 | 831960 | 832020 | 60 | 0 | 0 | 0 | 0 |
| 832020 | 841980 | 9960 | 841980 | 851980 | 10000 | 0 | 0 | 0 | 1 |
| 851980 | 861800 | 10020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

List of abbreviations:

| | |
|----------|---|
| GapStart | Start frequency of spectrum block below threshold level |
| GapStop | Stop frequency of spectrum block below threshold level |
| GapBW | Bandwidth of spectrum block below threshold level |
| CarStart | Start frequency of carrier above threshold level |
| CarStop | Stop frequency of carrier above threshold level |
| BW | Bandwidth of carrier above threshold level |
| CoL1? | Is the carrier contained in 1st coordination list? |
| CoL2? | Is the carrier contained in 2nd coordination list? |

| | |
|--|--------------------------------------|
| TV? | Is the carrier marked as TV channel? |
| LTE? | Is the carrier marked as LTE block? |
| Note: table does not contain manual marked carrier | |

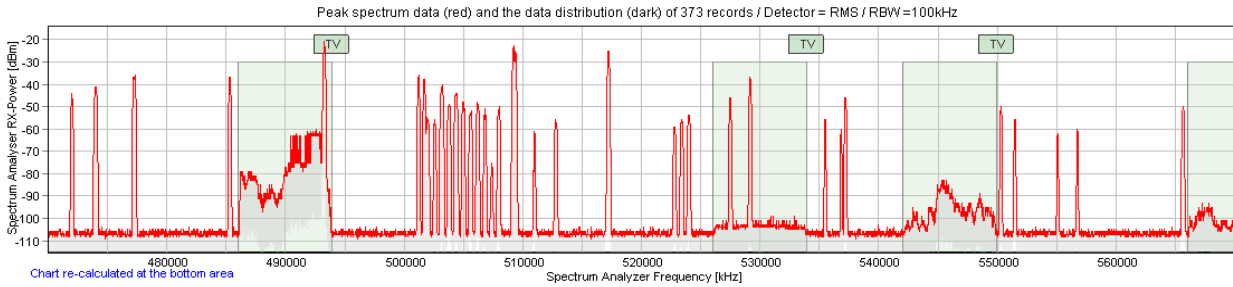
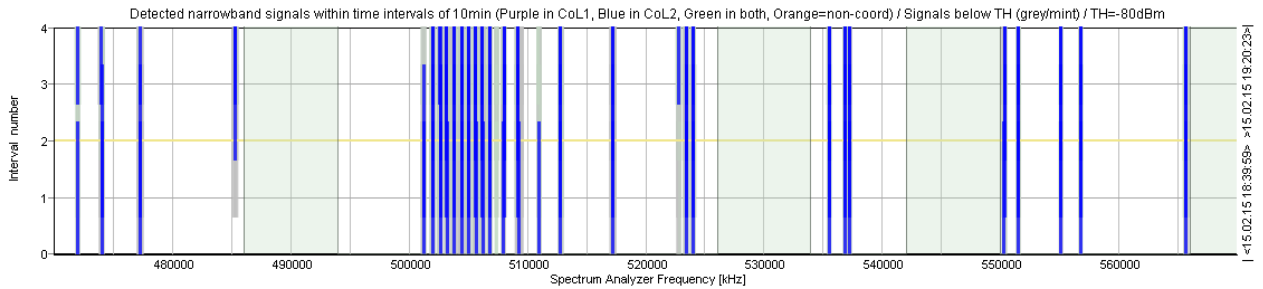
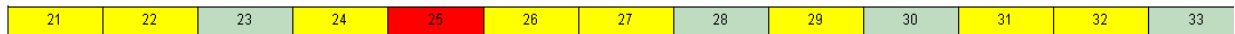


Chart re-calculated at the bottom area



Graphic 4: recorded spectrum allocation 470-570 MHz
 Note: Graphic does not contain manual marked carrier

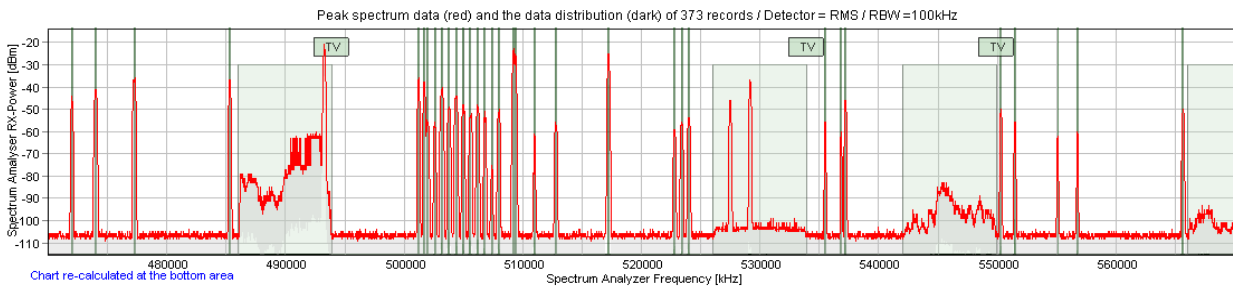
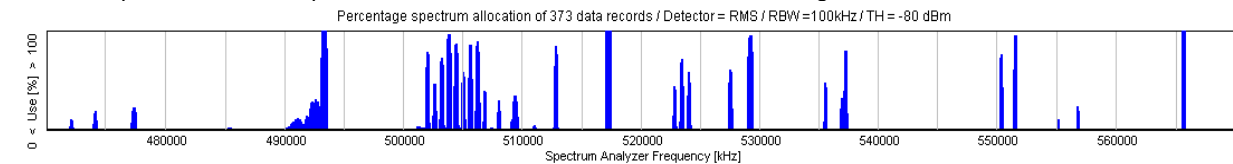
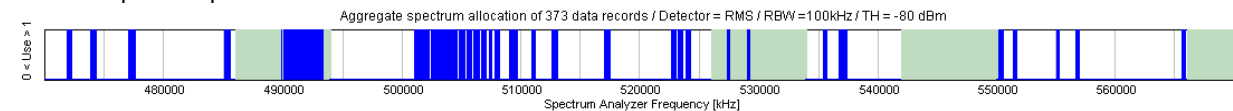


Chart re-calculated at the bottom area

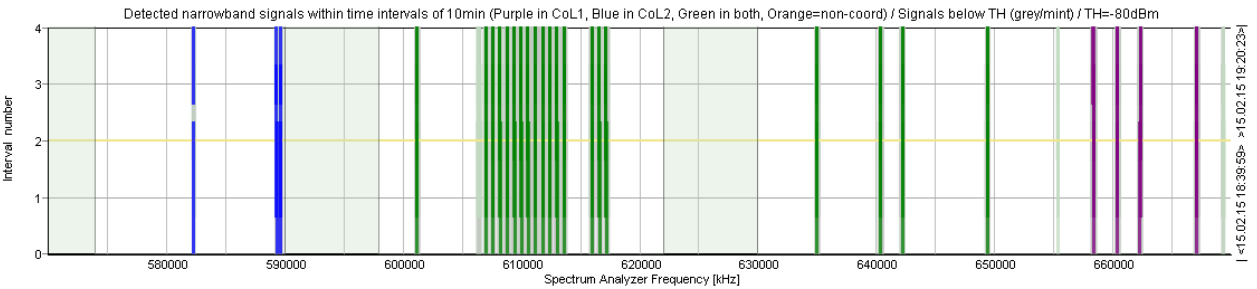
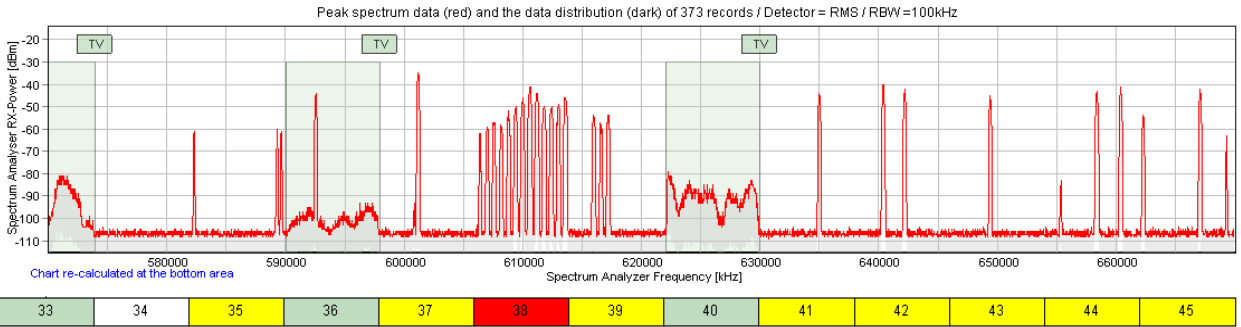
Graphic 5: recorded spectrum allocation and detected narrow band signals 470-570 MHz



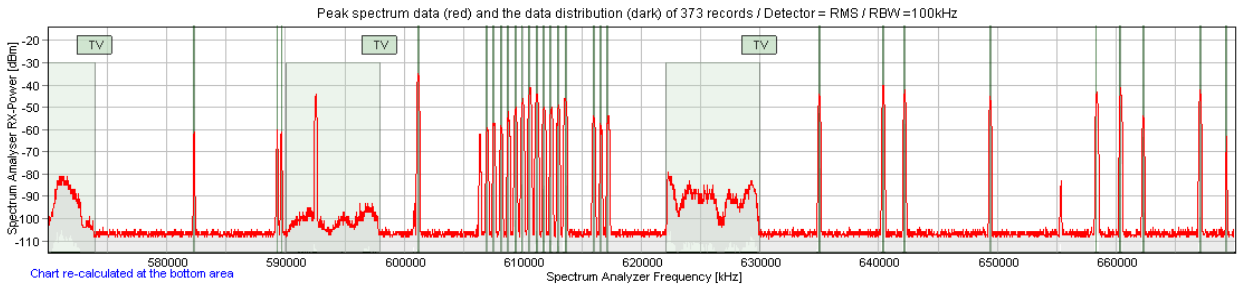
Graphic 6: spectrum allocation which exceed the stat threshold level 470-570 MHz



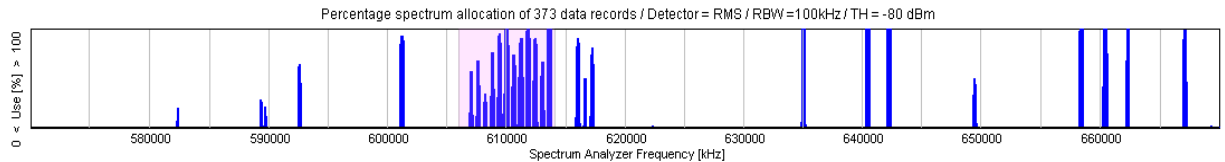
Graphic 7: aggregate spectrum allocation which exceed the stat threshold level 470-570 MHz



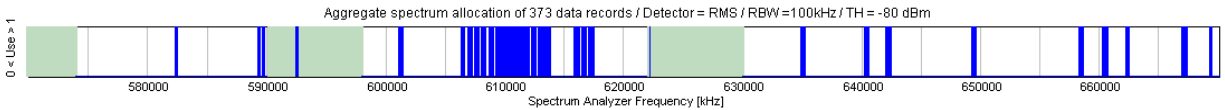
Graphic 8: recorded spectrum allocation 570-670 MHz
 Note: Graphic does not contain manual marked carrier



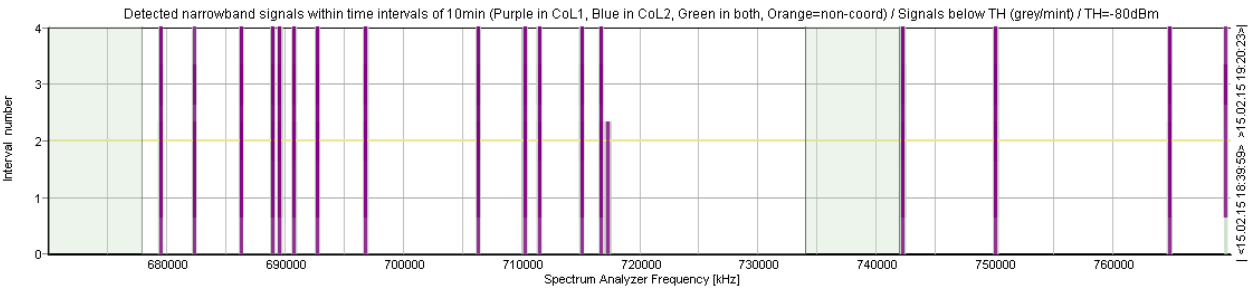
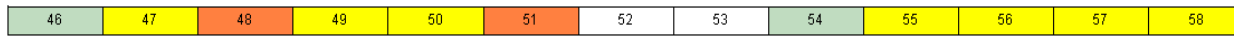
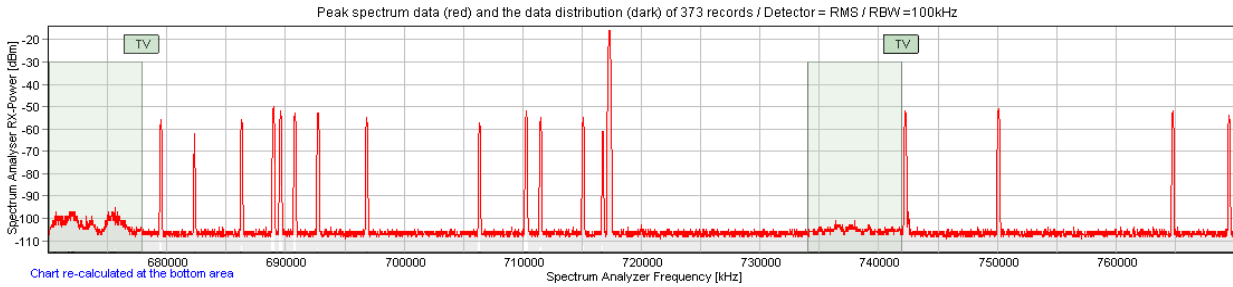
Graphic 9: recorded spectrum allocation and detected narrow band signals 570-670 MHz



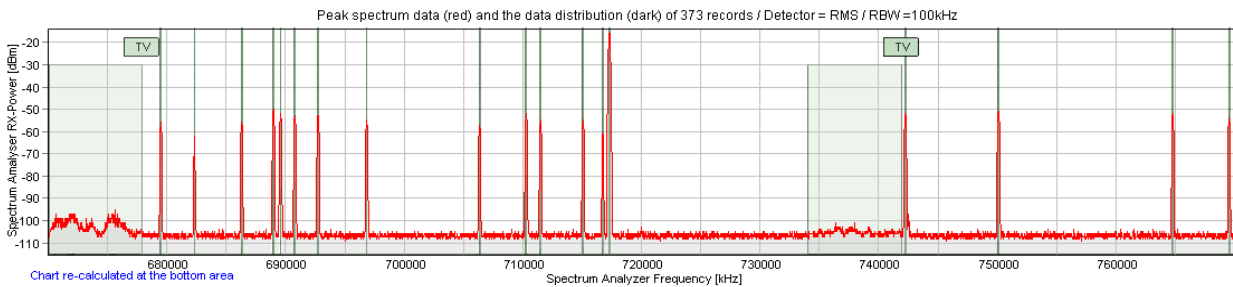
Graphic 10: spectrum allocation which exceed the stat threshold level 570-670 MHz



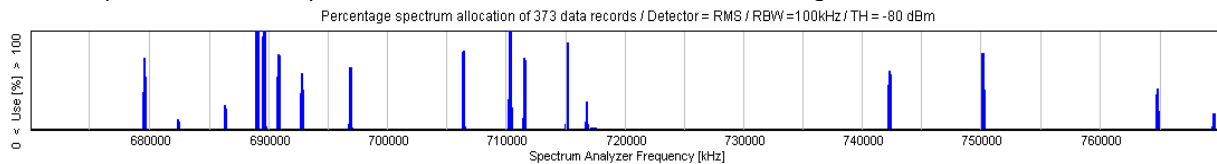
Graphic 11: aggregate spectrum allocation which exceed the stat threshold level 570-670 MHz



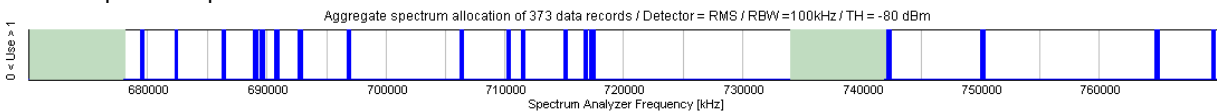
Graphic 12: recorded spectrum allocation 670-770 MHz
 Note: Graphic does not contain manual marked carrier



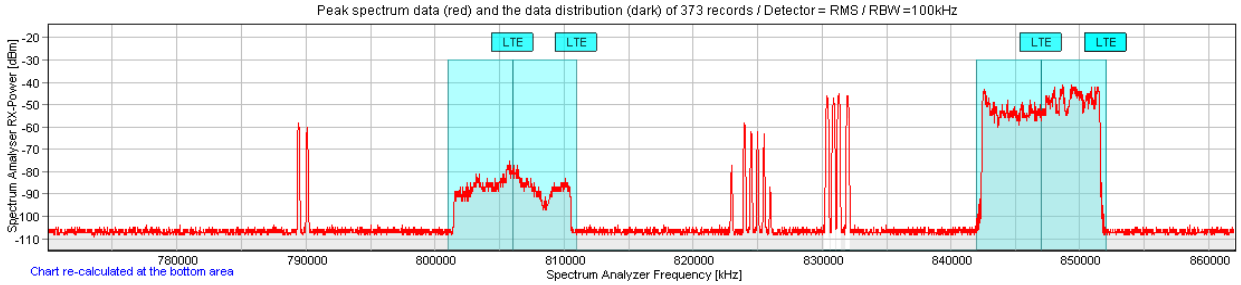
Graphic 13: recorded spectrum allocation and detected narrow band signals 670-770 MHz



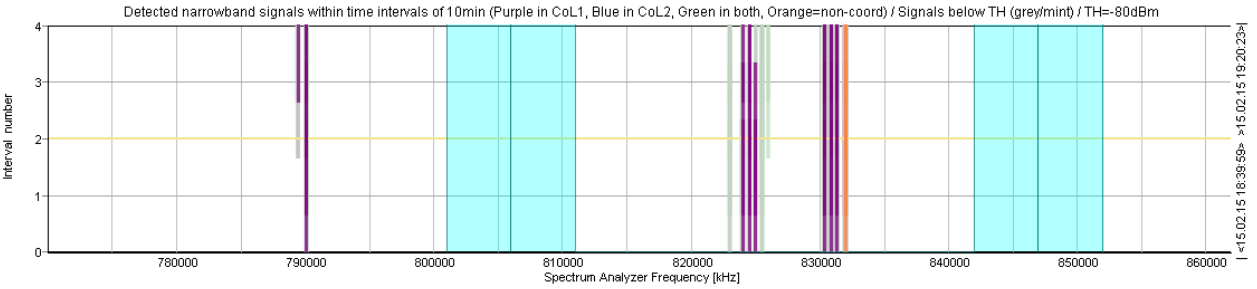
Graphic 14: spectrum allocation which exceed the stat threshold level 670-770 MHz



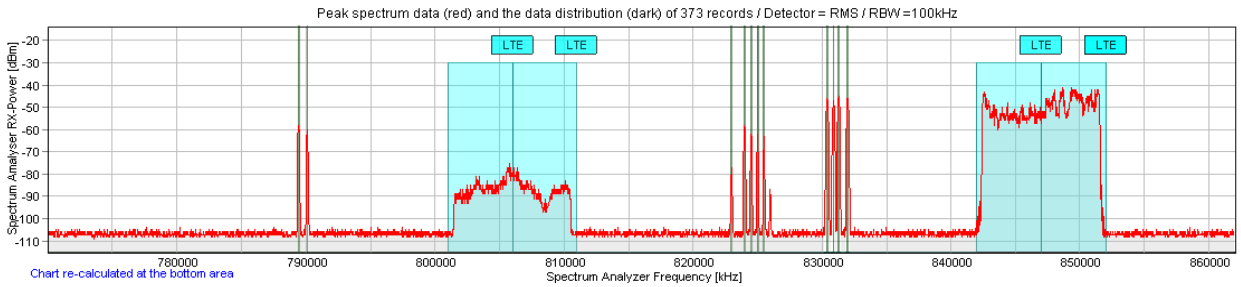
Graphic 15: aggregate spectrum allocation which exceed the stat threshold level 670-770 MHz



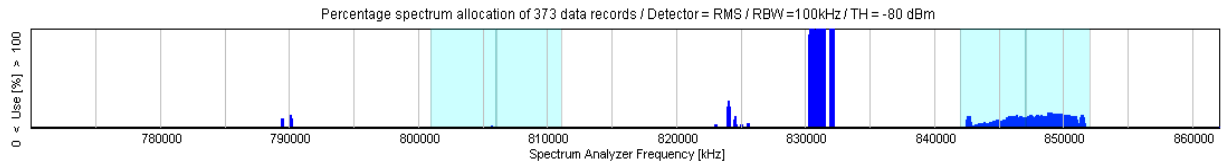
| | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
|----|----|----|----|----|----|----|----|----|----|----|----|



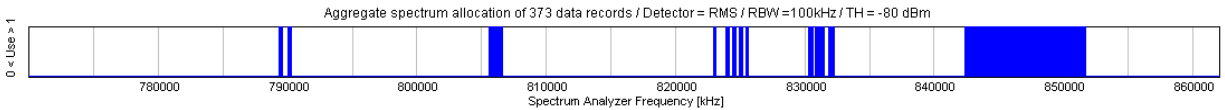
Graphic 16: recorded spectrum allocation 770-862 MHz
 Note: Graphic does not contain manual marked carrier



Graphic 17: recorded spectrum allocation and detected narrow band signals 770-862 MHz



Graphic 18: spectrum allocation which exceed the stat threshold level 770-862 MHz



Graphic 19: aggregate spectrum allocation which exceed the stat threshold level 770-862 MHz

| Table 2: statistics of scanned carrier | | | | | | |
|--|--------------------------|----------|----------|---------|------|------------|
| File# | FileName | CarStart | Date | Time | Car# | Comment(s) |
| 1 | Scan0215151839599569.txt | 501990 | 15.02.15 | 1839:59 | 1 | |
| 1 | Scan0215151839599569.txt | 503770 | 15.02.15 | 1839:59 | 2 | |
| 1 | Scan0215151839599569.txt | 504430 | 15.02.15 | 1839:59 | 3 | |
| 1 | Scan0215151839599569.txt | 506190 | 15.02.15 | 1839:59 | 4 | |
| 1 | Scan0215151839599569.txt | 509390 | 15.02.15 | 1839:59 | 5 | |
| 1 | Scan0215151839599569.txt | 517230 | 15.02.15 | 1839:59 | 6 | |
| 1 | Scan0215151839599569.txt | 524010 | 15.02.15 | 1839:59 | 7 | |
| 1 | Scan0215151839599569.txt | 550310 | 15.02.15 | 1839:59 | 8 | |
| 1 | Scan0215151839599569.txt | 565670 | 15.02.15 | 1839:59 | 9 | |
| 1 | Scan0215151839599569.txt | 601190 | 15.02.15 | 1839:59 | 10 | |
| 1 | Scan0215151839599569.txt | 609390 | 15.02.15 | 1839:59 | 11 | |
| 1 | Scan0215151839599569.txt | 609930 | 15.02.15 | 1839:59 | 12 | |
| 1 | Scan0215151839599569.txt | 613010 | 15.02.15 | 1839:59 | 13 | |
| 1 | Scan0215151839599569.txt | 616030 | 15.02.15 | 1839:59 | 14 | |
| 1 | Scan0215151839599569.txt | 635010 | 15.02.15 | 1839:59 | 15 | |
| 1 | Scan0215151839599569.txt | 640390 | 15.02.15 | 1839:59 | 16 | |
| 1 | Scan0215151839599569.txt | 642190 | 15.02.15 | 1839:59 | 17 | |
| 1 | Scan0215151839599569.txt | 658330 | 15.02.15 | 1839:59 | 18 | |
| 1 | Scan0215151839599569.txt | 660390 | 15.02.15 | 1839:59 | 19 | |
| 1 | Scan0215151839599569.txt | 662310 | 15.02.15 | 1839:59 | 20 | |
| 1 | Scan0215151839599569.txt | 667110 | 15.02.15 | 1839:59 | 21 | |
| 1 | Scan0215151839599569.txt | 688990 | 15.02.15 | 1839:59 | 22 | |
| 1 | Scan0215151839599569.txt | 689590 | 15.02.15 | 1839:59 | 23 | |
| 1 | Scan0215151839599569.txt | 692770 | 15.02.15 | 1839:59 | 24 | |
| 1 | Scan0215151839599569.txt | 710290 | 15.02.15 | 1839:59 | 25 | |
| 1 | Scan0215151839599569.txt | 711510 | 15.02.15 | 1839:59 | 26 | |
| 1 | Scan0215151839599569.txt | 717310 | 15.02.15 | 1839:59 | 27 | |
| 1 | Scan0215151839599569.txt | 742250 | 15.02.15 | 1839:59 | 28 | |
| 1 | Scan0215151839599569.txt | 750110 | 15.02.15 | 1839:59 | 29 | |
| 1 | Scan0215151839599569.txt | 830410 | 15.02.15 | 1839:59 | 30 | |
| 1 | Scan0215151839599569.txt | 830910 | 15.02.15 | 1839:59 | 31 | |
| 1 | Scan0215151839599569.txt | 831310 | 15.02.15 | 1839:59 | 32 | |
| 1 | Scan0215151839599569.txt | 831990 | 15.02.15 | 1839:59 | 33 | |
| 2 | Scan0215151840068737.txt | 502630 | 15.02.15 | 1840:06 | 34 | |
| 2 | Scan0215151840068737.txt | 505010 | 15.02.15 | 1840:06 | 35 | |
| 2 | Scan0215151840068737.txt | 523430 | 15.02.15 | 1840:06 | 36 | |
| 2 | Scan0215151840068737.txt | 535490 | 15.02.15 | 1840:06 | 37 | |
| 2 | Scan0215151840068737.txt | 537190 | 15.02.15 | 1840:06 | 38 | |
| 2 | Scan0215151840068737.txt | 551490 | 15.02.15 | 1840:06 | 39 | |
| 2 | Scan0215151840068737.txt | 611810 | 15.02.15 | 1840:06 | 40 | |
| 2 | Scan0215151840068737.txt | 612370 | 15.02.15 | 1840:06 | 41 | |
| 2 | Scan0215151840068737.txt | 613630 | 15.02.15 | 1840:06 | 42 | |
| 2 | Scan0215151840068737.txt | 679510 | 15.02.15 | 1840:06 | 43 | |
| 2 | Scan0215151840068737.txt | 706370 | 15.02.15 | 1840:06 | 44 | |
| 2 | Scan0215151840068737.txt | 716770 | 15.02.15 | 1840:06 | 45 | |
| 2 | Scan0215151840068737.txt | 824530 | 15.02.15 | 1840:06 | 46 | |
| 3 | Scan0215151840134708.txt | 505590 | 15.02.15 | 1840:13 | 47 | |
| 3 | Scan0215151840134708.txt | 536850 | 15.02.15 | 1840:13 | 48 | |
| 4 | Scan0215151840134708.txt | 556770 | 15.02.15 | 1840:21 | 49 | |
| 4 | Scan0215151840134708.txt | 690810 | 15.02.15 | 1840:21 | 50 | |
| 5 | Scan0215151840134708.txt | 474010 | 15.02.15 | 1840:28 | 51 | |
| 5 | Scan0215151840134708.txt | 503170 | 15.02.15 | 1840:28 | 52 | |
| 5 | Scan0215151840134708.txt | 555130 | 15.02.15 | 1840:28 | 53 | |
| 5 | Scan0215151840134708.txt | 682350 | 15.02.15 | 1840:28 | 54 | |
| 5 | Scan0215151840134708.txt | 715090 | 15.02.15 | 1840:28 | 55 | |

| | | | | | | |
|-----|--------------------------|--------|----------|---------|----|--|
| 6 | Scan0215151840134708.txt | 477310 | 15.02.15 | 1840:36 | 56 | |
| 6 | Scan0215151840134708.txt | 696850 | 15.02.15 | 1840:36 | 57 | |
| 7 | Scan0215151840134708.txt | 764790 | 15.02.15 | 1840:43 | 58 | |
| 8 | Scan0215151840134708.txt | 501230 | 15.02.15 | 1840:50 | 59 | |
| 8 | Scan0215151840134708.txt | 512770 | 15.02.15 | 1840:50 | 60 | |
| 13 | Scan0215151841124165.txt | 472010 | 15.02.15 | 1841:27 | 61 | |
| 17 | Scan0215151841124165.txt | 607570 | 15.02.15 | 1841:57 | 62 | |
| 18 | Scan0215151841124165.txt | 589690 | 15.02.15 | 1842:04 | 63 | |
| 18 | Scan0215151841124165.txt | 610530 | 15.02.15 | 1842:04 | 64 | |
| 19 | Scan0215151841124165.txt | 582290 | 15.02.15 | 1842:12 | 65 | |
| 19 | Scan0215151841124165.txt | 606970 | 15.02.15 | 1842:12 | 66 | |
| 19 | Scan0215151841124165.txt | 617130 | 15.02.15 | 1842:12 | 67 | |
| 20 | Scan0215151841124165.txt | 506810 | 15.02.15 | 1842:19 | 68 | |
| 21 | Scan0215151842262278.txt | 509230 | 15.02.15 | 1842:26 | 69 | |
| 22 | Scan0215151842262278.txt | 510990 | 15.02.15 | 1842:34 | 70 | |
| 24 | Scan0215151842262278.txt | 589310 | 15.02.15 | 1842:49 | 71 | |
| 24 | Scan0215151842262278.txt | 611170 | 15.02.15 | 1842:49 | 72 | |
| 25 | Scan0215151842262278.txt | 686330 | 15.02.15 | 1842:56 | 73 | |
| 25 | Scan0215151842262278.txt | 824010 | 15.02.15 | 1842:56 | 74 | |
| 33 | Scan0215151843403058.txt | 608170 | 15.02.15 | 1843:55 | 75 | |
| 35 | Scan0215151843403058.txt | 508010 | 15.02.15 | 1844:10 | 76 | |
| 40 | Scan0215151843403058.txt | 649430 | 15.02.15 | 1844:47 | 77 | |
| 62 | Scan0215151847222611.txt | 616570 | 15.02.15 | 1847:29 | 78 | |
| 64 | Scan0215151847222611.txt | 608770 | 15.02.15 | 1847:44 | 79 | |
| 66 | Scan0215151847222611.txt | 790110 | 15.02.15 | 1847:59 | 80 | |
| 68 | Scan0215151847222611.txt | 825030 | 15.02.15 | 1848:14 | 81 | |
| 111 | Scan0215151853329426.txt | 769550 | 15.02.15 | 1853:32 | 82 | |
| 126 | Scan0215151854469923.txt | 823010 | 15.02.15 | 1855:23 | 83 | |
| 137 | Scan0215151856005805.txt | 485310 | 15.02.15 | 1856:44 | 84 | |
| 176 | Scan0215151900551158.txt | 522750 | 15.02.15 | 1901:32 | 85 | |
| 244 | Scan0215151909336202.txt | 507410 | 15.02.15 | 1909:55 | 86 | |
| 253 | Scan0215151910466849.txt | 789430 | 15.02.15 | 1911:01 | 87 | |
| 335 | Scan0215151920381593.txt | 669330 | 15.02.15 | 1921:07 | 88 | |
| 355 | Scan0215151923068217.txt | 501710 | 15.02.15 | 1923:35 | 89 | |
| 355 | Scan0215151923068217.txt | 825530 | 15.02.15 | 1923:35 | 90 | |

List of abbreviations:

| | |
|------------|-------------------------------|
| File# | File number |
| FileName | File name |
| CarStart | Carrier start frequency [kHz] |
| Date | Date information [dd.mm.yy] |
| Time | Time information [hh.mm.ss] |
| Car# | Carrier number |
| Comment(s) | Further information |

| Table 3: UHF TV channel statistic | |
|-----------------------------------|---------------------------------|
| TV channel | Number of carrier |
| Ch21 | 3 |
| Ch22 | 1 |
| Ch23 | 0 / manually marked TV channel |
| Ch24 | 3 |
| Ch25 | 12 |
| Ch26 | 3 |
| Ch27 | 3 |
| Ch28 | 0 / manually marked TV channel |
| Ch29 | 3 |
| Ch30 | 0 / manually marked TV channel |
| Ch31 | 4 |
| Ch32 | 1 |
| Ch33 | 0 / manually marked TV channel |
| Ch34 | 0 |
| Ch35 | 3 |
| Ch36 | 0 / manually marked TV channel |
| Ch37 | 1 |
| Ch38 | 12 |
| Ch39 | 3 |
| Ch40 | 0 / manually marked TV channel |
| Ch41 | 1 |
| Ch42 | 2 |
| Ch43 | 1 |
| Ch44 | 2 |
| Ch45 | 3 |
| Ch46 | 0 / manually marked TV channel |
| Ch47 | 2 |
| Ch48 | 5 |
| Ch49 | 1 |
| Ch50 | 1 |
| Ch51 | 5 |
| Ch52 | 0 |
| Ch53 | 0 |
| Ch54 | 0 / manually marked TV channel |
| Ch55 | 1 |
| Ch56 | 1 |
| Ch57 | 1 |
| Ch58 | 1 |
| Ch59 | 0 |
| Ch60 | 1 |
| Ch61 | 1 |
| Ch62 | 0 / manually marked LTE channel |
| Ch63 | 0 / manually marked LTE channel |
| Ch64 | 0 |
| Ch65 | 5 |
| Ch66 | 4 |
| Ch67 | 0 / manually marked LTE channel |
| Ch68 | 0 / manually marked LTE channel |
| Ch69 | 0 |

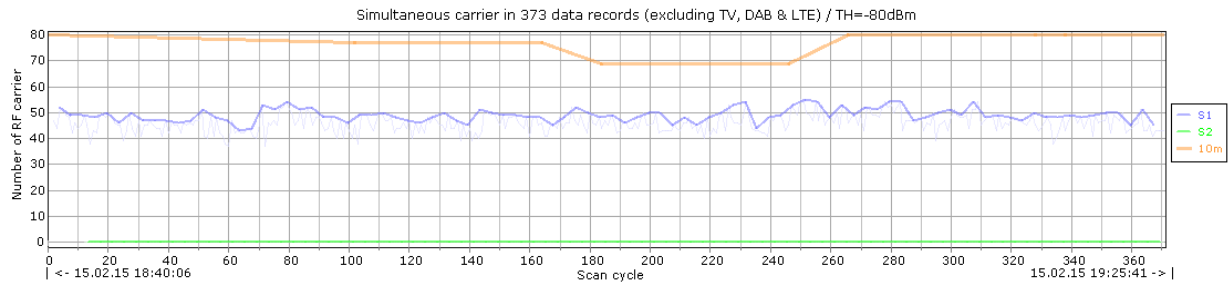
Table 4: carrier consideration in the coordination table(s)

| Carriers found in coordination list(s) | # | % |
|--|----|------|
| | 89 | 98.9 |

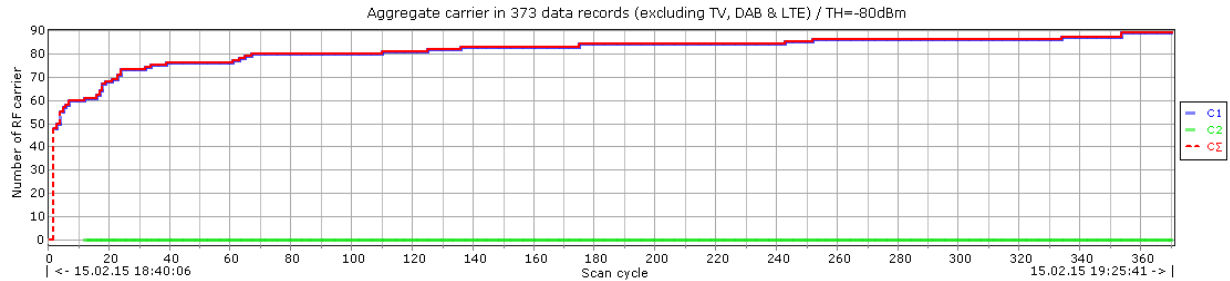
Table 5: frequency segments below the statistic threshold level

| | |
|------------------------|-----|
| BW < 500 kHz | 32 |
| BW 500 to 1000 kHz | 14 |
| BW 1000 to 5000 kHz | 35 |
| BW 5000 to 10000 kHz | 14 |
| BW > 10000 kHz | 6 |
| Total number of gap(s) | 101 |

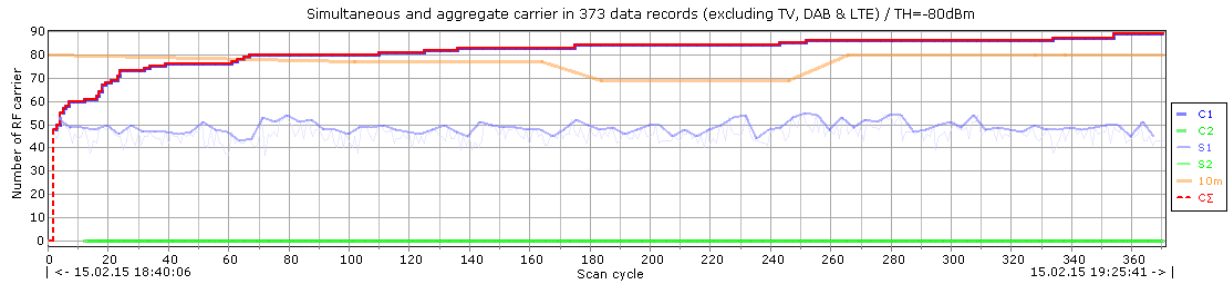
4) Time distribution of recorded narrowband signals



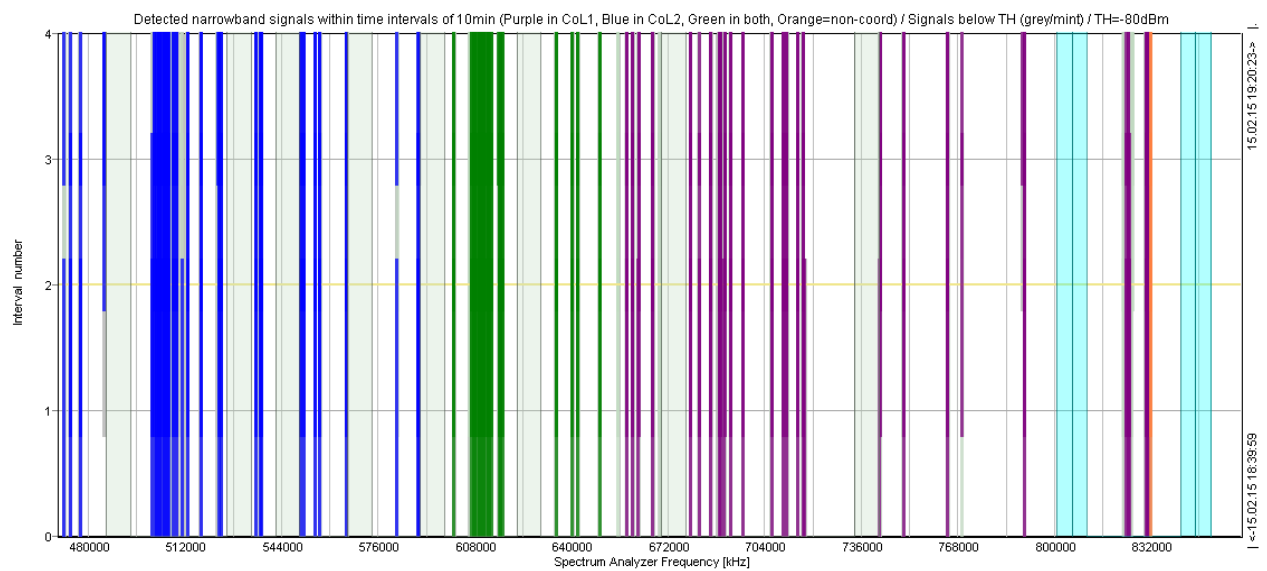
Graphic 20: simultaneous carrier



Graphic 21: aggregate carrier
Note: Graphic does not contain manual marked carrier



Graphic 22: simultaneous and aggregate carrier



5.1) Manually marked TV channel(s)

| Table 6-1: manually marked/excluded TV frequencies | | | |
|--|----------------------------------|--------|--------|
| TvCenter | TvStart | TvStop | TvChNo |
| kHz | kHz | kHz | none |
| 490000 | 486050 | 493950 | 23 |
| 530000 | 526050 | 533950 | 28 |
| 546000 | 542050 | 549950 | 30 |
| 570000 | 566050 | 573950 | 33 |
| 594000 | 590050 | 597950 | 36 |
| 626000 | 622050 | 629950 | 40 |
| 674000 | 670050 | 677950 | 46 |
| 738000 | 734050 | 741950 | 54 |
| List of abbreviations: | | | |
| TvCenter | Center frequency of TV channel | | |
| TvStart | Lower frequency of TV channel | | |
| TvStop | Upper frequency of TV channel | | |
| TvChNo | TV channel number (ITU Region 1) | | |

5.2) Manually marked LTE block(s)

| Table 6-2: manually marked/excluded LTE frequencies | | | |
|---|---------------------------------|--------|--------|
| LTECenter | LTEStart | LTETop | LTECh# |
| kHz | kHz | kHz | none |
| 803500 | 801000 | 806000 | LTE801 |
| 808500 | 806000 | 811000 | LTE806 |
| 844500 | 842000 | 847000 | LTE842 |
| 849500 | 847000 | 852000 | LTE847 |
| List of abbreviations: | | | |
| LTECenter | Center frequency of LTE channel | | |
| LTEStart | Lower frequency of LTE channel | | |
| LTETop | Upper frequency of LTE channel | | |
| LTECh# | LTE channel number | | |

6) Manually marked PMSE signals

No manually marked PMSE signals; table 7-1 disabled

7) Manually excluded frequency segments

| Segment | Frequency |
|---------|------------------|
| # | kHz |
| 1 | 473860 to 473940 |
| 2 | 501840 to 501920 |
| 3 | 502460 to 502540 |
| 4 | 503040 to 503120 |
| 5 | 503620 to 503700 |
| 6 | 504240 to 504320 |
| 7 | 505440 to 505520 |
| 8 | 506020 to 506100 |
| 9 | 522820 to 522900 |
| 10 | 523280 to 523360 |
| 11 | 608860 to 608940 |
| 12 | 609240 to 609320 |
| 13 | 610400 to 610480 |
| 14 | 611020 to 611100 |
| 15 | 611220 to 611300 |
| 16 | 611660 to 611740 |
| 17 | 613420 to 613500 |
| 18 | 615860 to 615940 |
| 19 | 634840 to 634920 |
| 20 | 666940 to 667020 |
| 21 | 830240 to 830320 |

8) Analysis of coordination information

| Table 8-1: data analysis of 1st coordination list | | | | | | |
|---|-------------|--------|--------------|-------------|-----|------|
| GapStartFreq | GapStopFreq | GapBW | CarStartFreq | CarStopFreq | BW | CoL? |
| kHz | kHz | kHz | kHz | kHz | kHz | 0/1 |
| 470000 | 601080 | 131080 | 601090 | 601310 | 220 | 0 |
| 601100 | 606320 | 5220 | 606330 | 606530 | 200 | 0 |
| 606340 | 606820 | 480 | 606830 | 607050 | 220 | 0 |
| 606840 | 607420 | 580 | 607430 | 607650 | 220 | 0 |
| 607440 | 608080 | 640 | 608090 | 608310 | 220 | 0 |
| 608100 | 608640 | 540 | 608650 | 608850 | 200 | 0 |
| 608660 | 609280 | 620 | 609290 | 609510 | 220 | 0 |
| 609300 | 609840 | 540 | 609850 | 610050 | 200 | 0 |
| 609860 | 610420 | 560 | 610430 | 610630 | 200 | 0 |
| 610440 | 611040 | 600 | 611050 | 611250 | 200 | 0 |
| 611060 | 611660 | 600 | 611670 | 611870 | 200 | 0 |
| 611680 | 612240 | 560 | 612250 | 612450 | 200 | 0 |
| 612260 | 612920 | 660 | 612930 | 613130 | 200 | 0 |
| 612940 | 613480 | 540 | 613490 | 613710 | 220 | 0 |
| 613500 | 615940 | 2440 | 615950 | 616150 | 200 | 0 |
| 615960 | 616440 | 480 | 616450 | 616650 | 200 | 0 |
| 616460 | 616980 | 520 | 616990 | 617210 | 220 | 0 |
| 617000 | 634920 | 17920 | 634930 | 635130 | 200 | 0 |
| 634940 | 640280 | 5340 | 640290 | 640510 | 220 | 0 |
| 640300 | 642080 | 1780 | 642090 | 642310 | 220 | 0 |
| 642100 | 649280 | 7180 | 649290 | 649510 | 220 | 0 |
| 649300 | 655240 | 5940 | 655250 | 655450 | 200 | 0 |
| 655260 | 658240 | 2980 | 658250 | 658450 | 200 | 0 |
| 658260 | 660320 | 2060 | 660330 | 660530 | 200 | 0 |
| 660340 | 662220 | 1880 | 662230 | 662430 | 200 | 0 |
| 662240 | 667020 | 4780 | 667030 | 667230 | 200 | 0 |
| 667040 | 669180 | 2140 | 669190 | 669410 | 220 | 0 |
| 669200 | 679360 | 10160 | 679370 | 679590 | 220 | 0 |
| 679380 | 682200 | 2820 | 682210 | 682430 | 220 | 0 |
| 682220 | 686180 | 3960 | 686190 | 686410 | 220 | 0 |
| 686200 | 688840 | 2640 | 688850 | 689070 | 220 | 0 |
| 688860 | 689480 | 620 | 689490 | 689710 | 220 | 0 |
| 689500 | 690660 | 1160 | 690670 | 690890 | 220 | 0 |
| 690680 | 692660 | 1980 | 692670 | 692870 | 200 | 0 |
| 692680 | 696700 | 4020 | 696710 | 696930 | 220 | 0 |
| 696720 | 706220 | 9500 | 706230 | 706450 | 220 | 0 |
| 706240 | 710180 | 3940 | 710190 | 710410 | 220 | 0 |
| 710200 | 711360 | 1160 | 711370 | 711590 | 220 | 0 |
| 711380 | 714940 | 3560 | 714950 | 715170 | 220 | 0 |
| 714960 | 716620 | 1660 | 716630 | 716850 | 220 | 0 |
| 716640 | 717160 | 520 | 717170 | 717390 | 220 | 0 |
| 717180 | 742100 | 24920 | 742110 | 742330 | 220 | 0 |

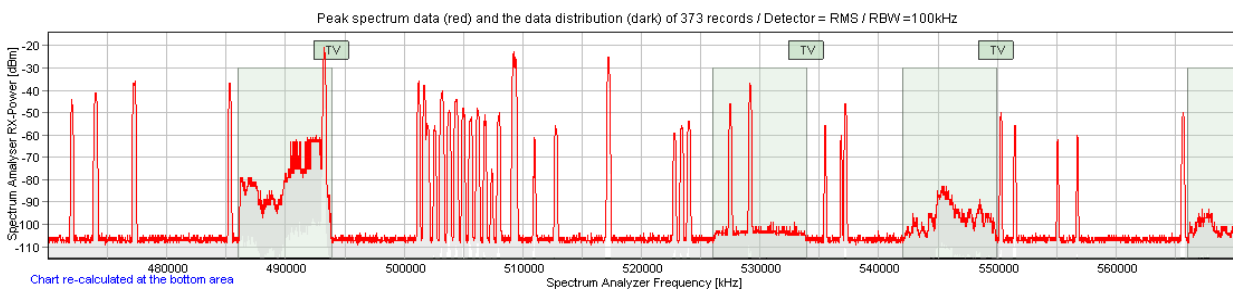
| | | | | | | |
|--------|--------|-------|--------|--------|-----|---|
| 742120 | 749960 | 7840 | 749970 | 750190 | 220 | 0 |
| 749980 | 764660 | 14680 | 764670 | 764890 | 220 | 0 |
| 764680 | 769400 | 4720 | 769410 | 769630 | 220 | 0 |
| 769420 | 789280 | 19860 | 789290 | 789510 | 220 | 0 |
| 789300 | 789960 | 660 | 789970 | 790190 | 220 | 0 |
| 789980 | 822860 | 32880 | 822870 | 823090 | 220 | 0 |
| 822880 | 823860 | 980 | 823870 | 824090 | 220 | 0 |
| 823880 | 824380 | 500 | 824390 | 824610 | 220 | 0 |
| 824400 | 824880 | 480 | 824890 | 825110 | 220 | 0 |
| 824900 | 825360 | 460 | 825370 | 825590 | 220 | 0 |
| 825380 | 825880 | 500 | 825890 | 826090 | 200 | 0 |
| 825900 | 830260 | 4360 | 830270 | 830490 | 220 | 0 |
| 830280 | 830760 | 480 | 830770 | 830990 | 220 | 0 |
| 830780 | 831160 | 380 | 831170 | 831390 | 220 | 0 |

List of abbreviations

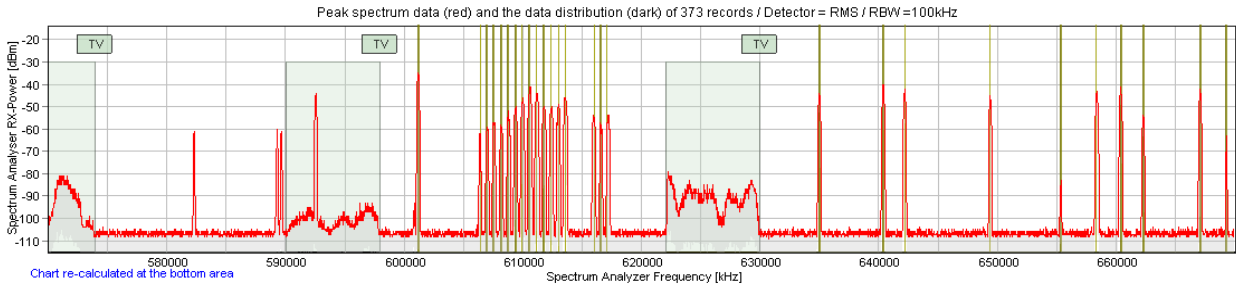
| | |
|----------|---|
| GapStart | Start frequency of spectrum block below threshold level |
| GapStop | Stop frequency of spectrum block below threshold level |
| GapBW | Bandwidth of spectrum block below threshold level |
| CarStart | Start frequency of carrier above threshold level |
| CarStop | Stop frequency of carrier above threshold level |
| BW | Bandwidth of carrier above threshold level |
| CoL? | Is the carrier contained in the coordination list? |

Table 8-2: summary of table 8-1

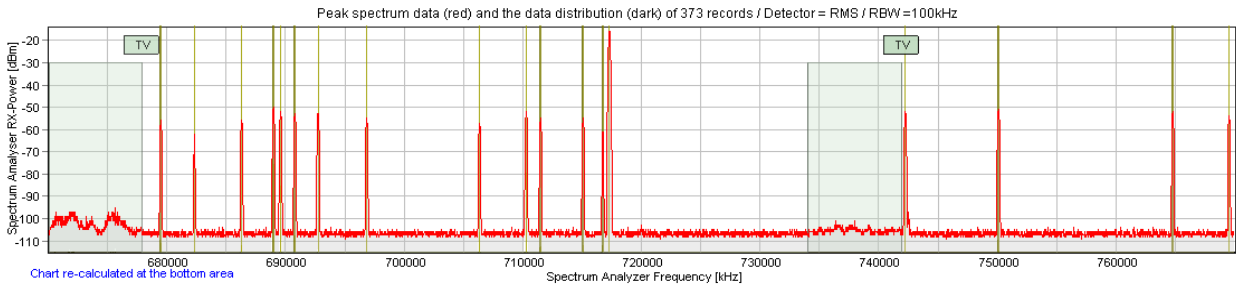
| Carrier bandwidth | Carrier | |
|-------------------|---------|----------------------------|
| kHz | # | |
| <500 | 56 | probably narrow band links |
| 500..1000 | 0 | probably narrow band links |
| 1000..5000 | 0 | |
| 5000..10000 | 0 | probably TV or LTE |
| >10000 | 0 | |
| Total | 56 | |



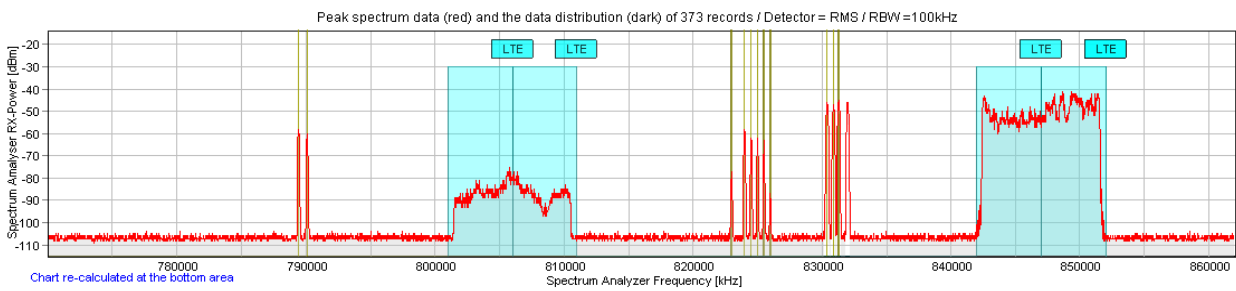
Graphic 23-1: coordination information (yellow) and recorded spectrum 470-570 MHz



Graphic 23-2: coordination information (yellow) and recorded spectrum 570-670 MHz



Graphic 23-3: coordination information (yellow) and recorded spectrum 670-770 MHz



Graphic 23-4: coordination information (yellow) and recorded spectrum 770-862 MHz

| Table 8-3: data analysis of 2nd coordination list | | | | | | |
|---|-------------|-------|--------------|-------------|-----|------|
| GapStartFreq | GapStopFreq | GapBW | CarStartFreq | CarStopFreq | BW | CoL? |
| kHz | kHz | kHz | kHz | kHz | kHz | 0/1 |
| 470000 | 471860 | 1860 | 471870 | 472070 | 200 | 0 |
| 471880 | 473860 | 1980 | 473870 | 474070 | 200 | 0 |
| 473880 | 477160 | 3280 | 477170 | 477370 | 200 | 0 |
| 477180 | 485160 | 7980 | 485170 | 485370 | 200 | 0 |
| 485180 | 501080 | 15900 | 501090 | 501310 | 220 | 0 |
| 501100 | 501560 | 460 | 501570 | 501770 | 200 | 0 |
| 501580 | 501880 | 300 | 501890 | 502110 | 220 | 0 |
| 501900 | 502480 | 580 | 502490 | 502710 | 220 | 0 |
| 502500 | 503040 | 540 | 503050 | 503250 | 200 | 0 |
| 503060 | 503660 | 600 | 503670 | 503870 | 200 | 0 |
| 503680 | 504240 | 560 | 504250 | 504450 | 200 | 0 |
| 504260 | 504860 | 600 | 504870 | 505090 | 220 | 0 |
| 504880 | 505440 | 560 | 505450 | 505650 | 200 | 0 |
| 505460 | 506080 | 620 | 506090 | 506310 | 220 | 0 |
| 506100 | 506660 | 560 | 506670 | 506890 | 220 | 0 |
| 506680 | 507320 | 640 | 507330 | 507530 | 200 | 0 |
| 507340 | 507860 | 520 | 507870 | 508070 | 200 | 0 |
| 507880 | 509080 | 1200 | 509090 | 509510 | 420 | 0 |
| 509100 | 510840 | 1740 | 510850 | 511050 | 200 | 0 |
| 510860 | 512640 | 1780 | 512650 | 512850 | 200 | 0 |
| 512660 | 517120 | 4460 | 517130 | 517330 | 200 | 0 |
| 517140 | 522620 | 5480 | 522630 | 522830 | 200 | 0 |
| 522640 | 523280 | 640 | 523290 | 523510 | 220 | 0 |
| 523300 | 523880 | 580 | 523890 | 524110 | 220 | 0 |
| 523900 | 535340 | 11440 | 535350 | 535550 | 200 | 0 |
| 535360 | 536720 | 1360 | 536730 | 536930 | 200 | 0 |
| 536740 | 537060 | 320 | 537070 | 537270 | 200 | 0 |
| 537080 | 550180 | 13100 | 550190 | 550410 | 220 | 0 |
| 550200 | 551340 | 1140 | 551350 | 551550 | 200 | 0 |
| 551360 | 554980 | 3620 | 554990 | 555210 | 220 | 0 |
| 555000 | 556640 | 1640 | 556650 | 556850 | 200 | 0 |
| 556660 | 565580 | 8920 | 565590 | 565810 | 220 | 0 |
| 565600 | 582140 | 16540 | 582150 | 582350 | 200 | 0 |
| 582160 | 589160 | 7000 | 589170 | 589370 | 200 | 0 |
| 589180 | 589540 | 360 | 589550 | 589750 | 200 | 0 |
| 589560 | 601080 | 11520 | 601090 | 601310 | 220 | 0 |
| 601100 | 606320 | 5220 | 606330 | 606530 | 200 | 0 |
| 606340 | 606820 | 480 | 606830 | 607050 | 220 | 0 |
| 606840 | 607420 | 580 | 607430 | 607650 | 220 | 0 |
| 607440 | 608080 | 640 | 608090 | 608310 | 220 | 0 |
| 608100 | 608640 | 540 | 608650 | 608850 | 200 | 0 |
| 608660 | 609280 | 620 | 609290 | 609510 | 220 | 0 |

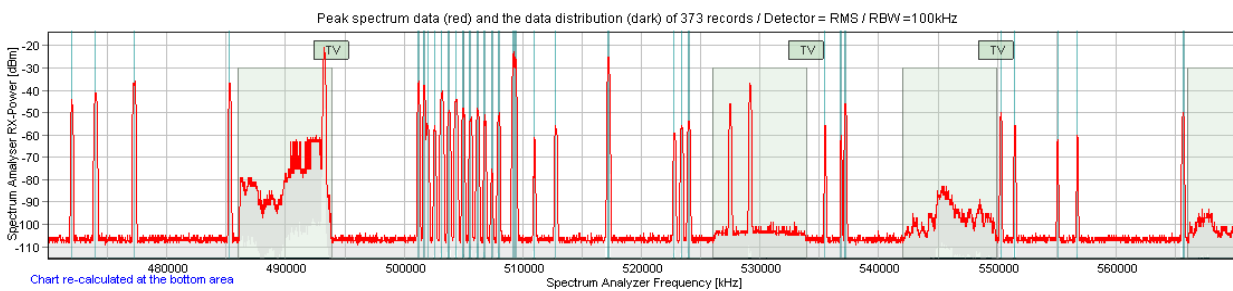
| | | | | | | |
|--------|--------|-------|--------|--------|-----|---|
| 609300 | 609840 | 540 | 609850 | 610050 | 200 | 0 |
| 609860 | 610420 | 560 | 610430 | 610630 | 200 | 0 |
| 610440 | 611040 | 600 | 611050 | 611250 | 200 | 0 |
| 611060 | 611660 | 600 | 611670 | 611870 | 200 | 0 |
| 611680 | 612240 | 560 | 612250 | 612450 | 200 | 0 |
| 612260 | 612920 | 660 | 612930 | 613130 | 200 | 0 |
| 612940 | 613480 | 540 | 613490 | 613710 | 220 | 0 |
| 613500 | 615940 | 2440 | 615950 | 616150 | 200 | 0 |
| 615960 | 616440 | 480 | 616450 | 616650 | 200 | 0 |
| 616460 | 616980 | 520 | 616990 | 617210 | 220 | 0 |
| 617000 | 634920 | 17920 | 634930 | 635130 | 200 | 0 |
| 634940 | 640280 | 5340 | 640290 | 640510 | 220 | 0 |
| 640300 | 642080 | 1780 | 642090 | 642310 | 220 | 0 |
| 642100 | 649280 | 7180 | 649290 | 649510 | 220 | 0 |

List of abbreviations

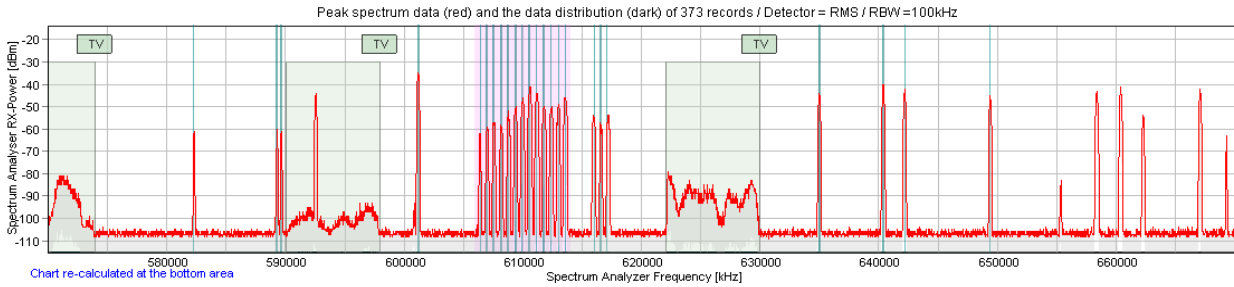
| | |
|----------|---|
| GapStart | Start frequency of spectrum block below threshold level |
| GapStop | Stop frequency of spectrum block below threshold level |
| GapBW | Bandwidth of spectrum block below threshold level |
| CarStart | Start frequency of carrier above threshold level |
| CarStop | Stop frequency of carrier above threshold level |
| BW | Bandwidth of carrier above threshold level |
| CoL? | Is the carrier contained in the coordination list? |

Table 8-4: summary of table 8-3

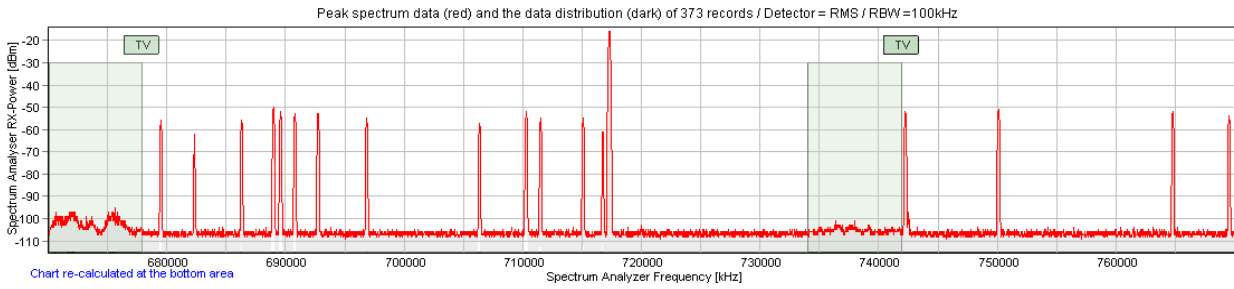
| Carrier bandwidth | Carrier | |
|-------------------|---------|----------------------------|
| kHz | # | |
| <500 | 56 | probably narrow band links |
| 500..1000 | 0 | probably narrow band links |
| 1000..5000 | 0 | |
| 5000..10000 | 0 | probably TV or LTE |
| >10000 | 0 | |
| Total | 56 | |



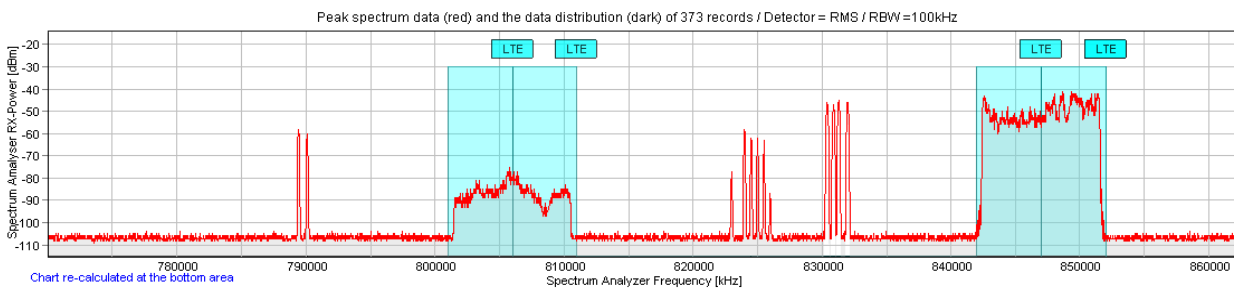
Graphic 23-5: coordination information (blue) and recorded spectrum 470-570 MHz



Graphic 23-6: coordination information (blue) and recorded spectrum 570-670 MHz



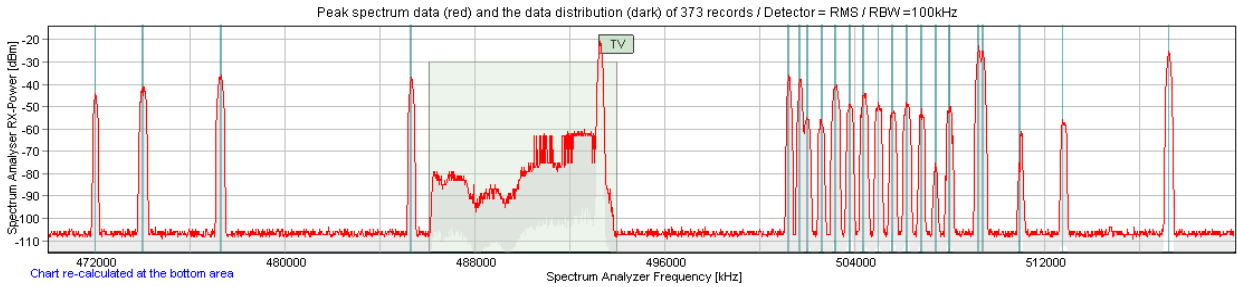
Graphic 23-7: coordination information (blue) and recorded spectrum 670-770 MHz



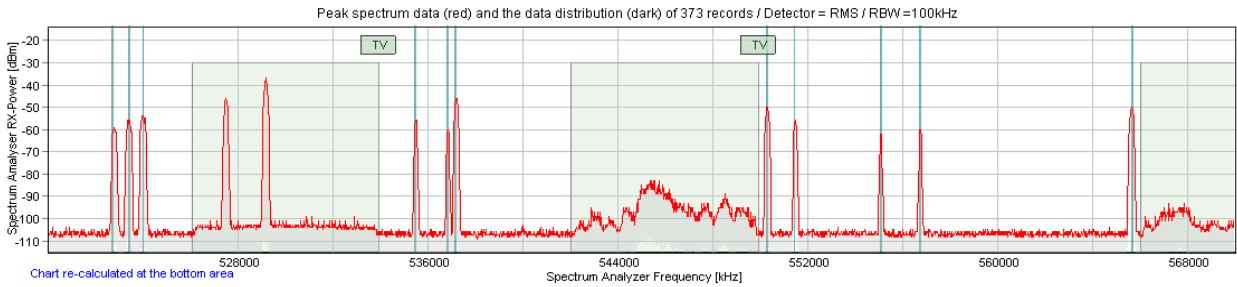
Graphic 23-8: coordination information (blue) and recorded spectrum 770-862 MHz

9) Coordinated and un-coordinated narrow band signals

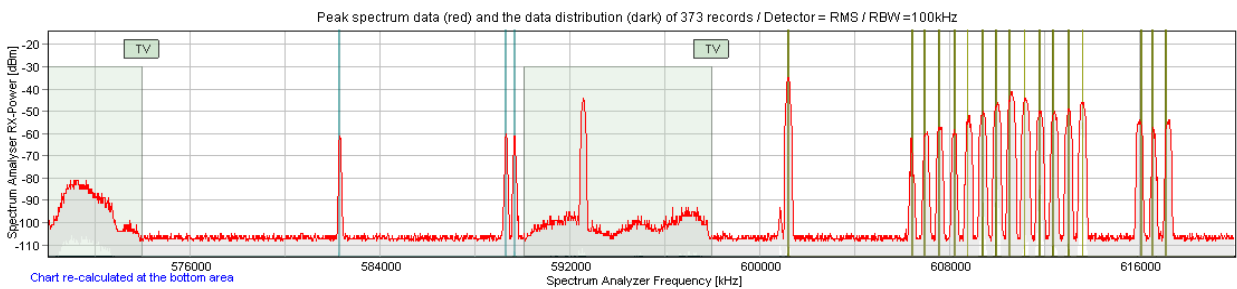
| Table 9: recorded carrier, not coordinated | |
|--|-----------|
| Car | Frequency |
| # | kHz |
| 1 | 831940 |



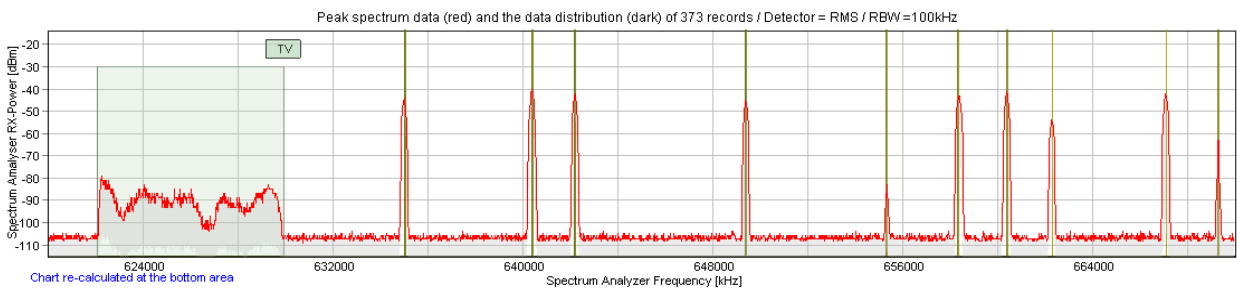
Graphic 24-1: coordinated (yellow) and un-coordinated (blue) narrow band signals 470-520 MHz



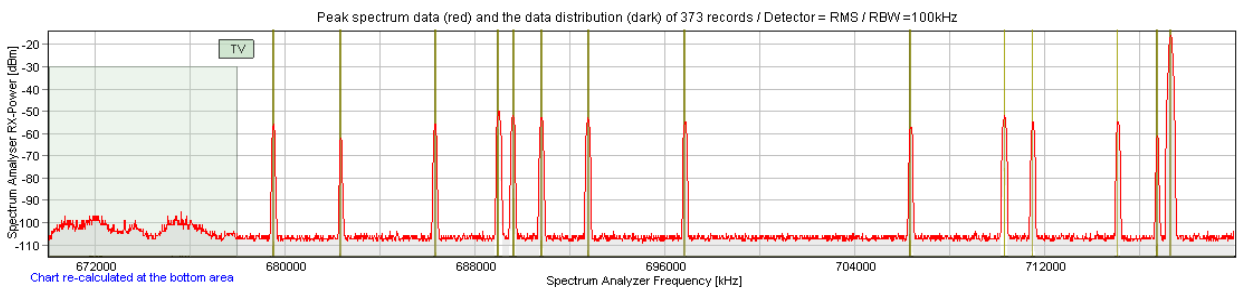
Graphic 24-2: coordinated (yellow) and un-coordinated (blue) narrow band signals 520-570 MHz



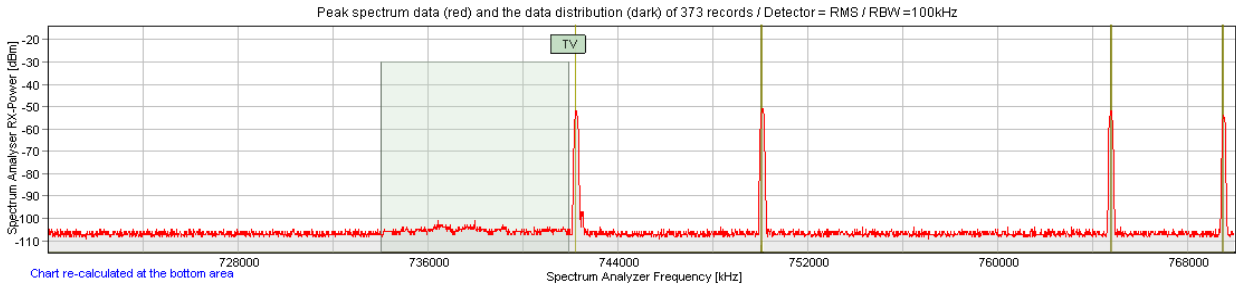
Graphic 24-3: coordinated (yellow) and un-coordinated (blue) narrow band signals 570-620 MHz



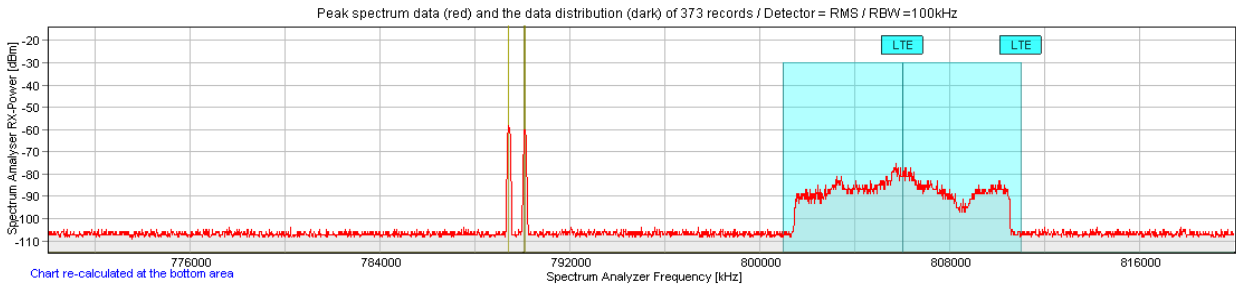
Graphic 24-4: coordinated (yellow) and un-coordinated (blue) narrow band signals 620-670 MHz



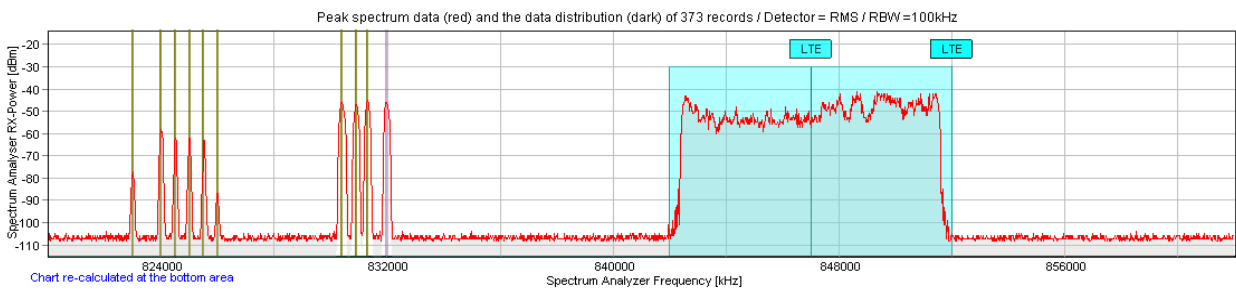
Graphic 24-5: coordinated (yellow) and un-coordinated (blue) narrow band signals 670-720 MHz



Graphic 24-6: coordinated (yellow) and un-coordinated (blue) narrow band signals 720-770 MHz



Graphic 24-7: coordinated (yellow) and un-coordinated (blue) narrow band signals 770-820 MHz



Graphic 24-8: coordinated (yellow) and un-coordinated (blue) narrow band signals 820-862 MHz

10) Assessment of the required spectrum resource

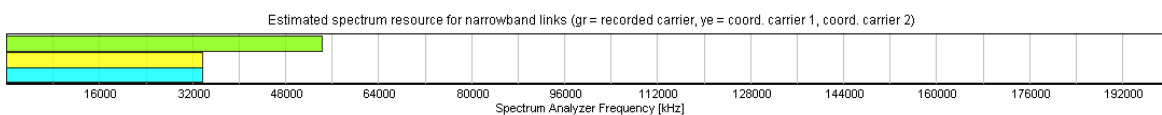
| Table 10: scanned carrier above threshold level | | |
|---|---------|----------------------------|
| Carrier bandwidth | Carrier | |
| kHz | # | |
| <500 | 90 | probably narrow band links |
| 500..1000 | 0 | probably narrow band links |
| 1000..5000 | 0 | |
| 5000..10000 | 12 | probably TV or LTE |
| >10000 | 0 | |
| Total | 102 | |

Note: table contains 0 manual marked carrier

| Table 11: spectrum estimation of recorded carrier | | |
|---|--------------------|----------------------------|
| Carrier bandwidth | Estimated spectrum | |
| kHz | kHz | |
| <500 | 54200 | probably narrow band links |
| 500..1000 | 0 | probably narrow band links |
| 1000..5000 | 0 | |
| 5000..10000 | 84000 | probably TV or LTE |
| >10000 | 0 | |
| Total | 138200 | |

Note: table contains manual marked carrier

| Table 12: summary of narrow band link spectrum estimation | | | |
|---|-------|-----|--------------------------|
| Recorded carrier | 54.20 | MHz | see the green bar below |
| Carrier listed in 1st coordination list | 33.60 | MHz | see the yellow bar below |
| Carrier listed in 2nd coordination list | 33.60 | MHz | see the blue bar below |



Graphic 25: estimated spectrum resource to scanned and coordinated narrowband links

Warning:

This estimated spectrum demand does not represent the real spectrum demand of PMSE.

The real spectrum demand might be significant higher.

Note: because of hidden node problem the coordinated links are different to the recorded ones.

11) Further information

Information on maximum scanning receiver input level

| | |
|---|------------|
| Frequency | 717300 kHz |
| Level@RBW=100kHz | -16 dBm |
| Frequency | 717160 kHz |
| Level@RBW=1000kHz | -16 dBm |
| Maximum scanner input attenuator position | 10 dB |

| | |
|---------------------------|---------------------------------------|
| Stat software version | PMSE Occupation Recorder V3.3v |
| Stat creation starts | 09.06.16 12:47:54 [DD.MM.YY hh:mm:ss] |
| Stat creation finalized | 09.06.16 12:48:13 [DD.MM.YY hh:mm:ss] |
| Time for stat calculation | 00:00:00:19 [DD:hh:mm:ss] |

Statistic PC information

| | |
|----------------------|--|
| Computer name | FSCS7514 |
| User name | Matthias |
| Number of processors | 4 |
| Processor name | Intel(R) Core(TM) i7-2640M CPU @ 2.80GHz |
| Windows version | Windows 7 Professional |