

## Annex 4: Protection Ratio Measurement Results

### 1 FM Broadcast as the interferer

#### 1.1 FM Broadcast -> FM stereo reception

Rx: 1 (home stereo rack)

Unwanted: **FM** Modulated according to ITU-R BS.641

Frequency: variable

Full level: 12 dBm at 0 dB atten.

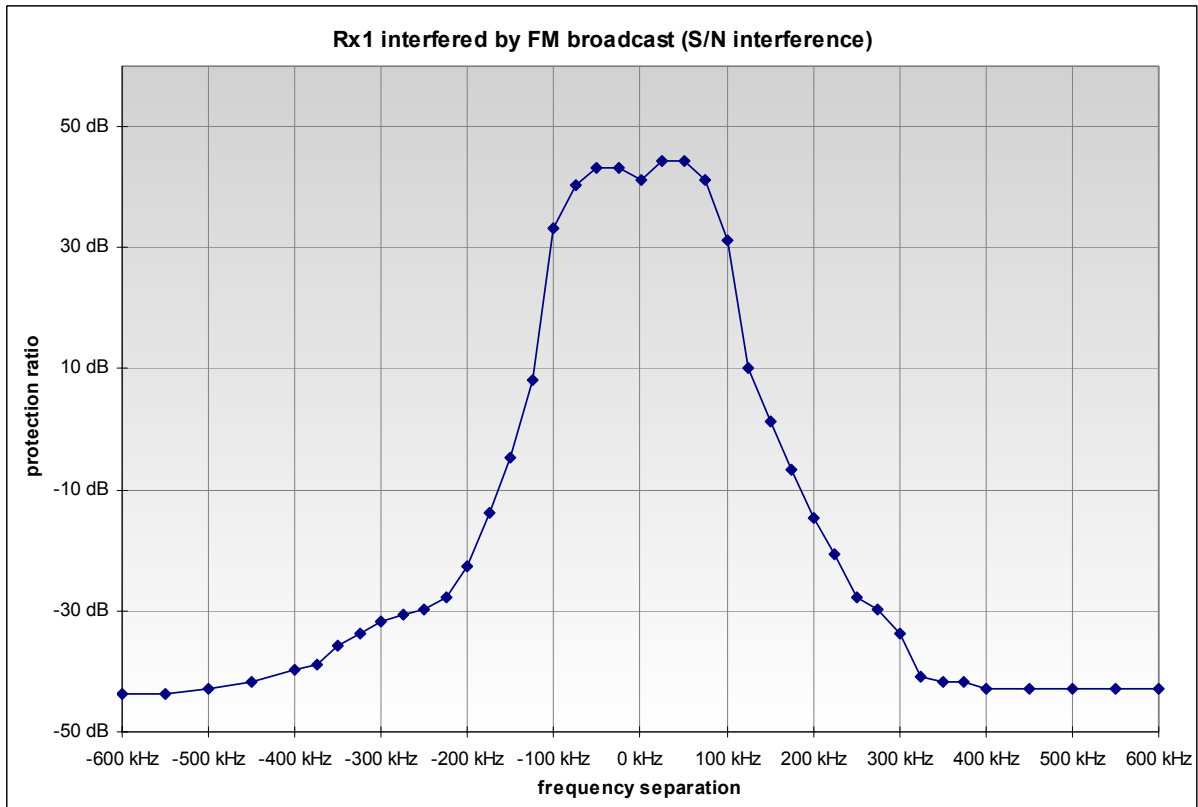
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: -51 dBm

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		FM atten.	FM level	prot. ratio
87,000 MHz	-600 kHz	19 dB	-7 dBm	-44 dB
87,050 MHz	-550 kHz	19 dB	-7 dBm	-44 dB
87,100 MHz	-500 kHz	20 dB	-8 dBm	-43 dB
87,150 MHz	-450 kHz	21 dB	-9 dBm	-42 dB
87,200 MHz	-400 kHz	23 dB	-11 dBm	-40 dB
87,225 MHz	-375 kHz	24 dB	-12 dBm	-39 dB
87,250 MHz	-350 kHz	27 dB	-15 dBm	-36 dB
87,275 MHz	-325 kHz	29 dB	-17 dBm	-34 dB
87,300 MHz	-300 kHz	31 dB	-19 dBm	-32 dB
87,325 MHz	-275 kHz	32 dB	-20 dBm	-31 dB
87,350 MHz	-250 kHz	33 dB	-21 dBm	-30 dB
87,375 MHz	-225 kHz	35 dB	-23 dBm	-28 dB
87,400 MHz	-200 kHz	40 dB	-28 dBm	-23 dB
87,425 MHz	-175 kHz	49 dB	-37 dBm	-14 dB
87,450 MHz	-150 kHz	58 dB	-46 dBm	-5 dB
87,475 MHz	-125 kHz	71 dB	-59 dBm	8 dB
87,500 MHz	-100 kHz	96 dB	-84 dBm	33 dB
87,525 MHz	-75 kHz	103 dB	-91 dBm	40 dB
87,550 MHz	-50 kHz	106 dB	-94 dBm	43 dB
87,575 MHz	-25 kHz	106 dB	-94 dBm	43 dB
87,600 MHz	0 kHz	104 dB	-92 dBm	41 dB
87,625 MHz	25 kHz	107 dB	-95 dBm	44 dB
87,650 MHz	50 kHz	107 dB	-95 dBm	44 dB
87,675 MHz	75 kHz	104 dB	-92 dBm	41 dB
87,700 MHz	100 kHz	94 dB	-82 dBm	31 dB
87,725 MHz	125 kHz	73 dB	-61 dBm	10 dB
87,750 MHz	150 kHz	64 dB	-52 dBm	1 dB
87,775 MHz	175 kHz	56 dB	-44 dBm	-7 dB
87,800 MHz	200 kHz	48 dB	-36 dBm	-15 dB
87,825 MHz	225 kHz	42 dB	-30 dBm	-21 dB
87,850 MHz	250 kHz	35 dB	-23 dBm	-28 dB
87,875 MHz	275 kHz	33 dB	-21 dBm	-30 dB
87,900 MHz	300 kHz	29 dB	-17 dBm	-34 dB
87,925 MHz	325 kHz	22 dB	-10 dBm	-41 dB
87,950 MHz	350 kHz	21 dB	-9 dBm	-42 dB
87,975 MHz	375 kHz	21 dB	-9 dBm	-42 dB
88,000 MHz	400 kHz	20 dB	-8 dBm	-43 dB
88,050 MHz	450 kHz	20 dB	-8 dBm	-43 dB
88,100 MHz	500 kHz	20 dB	-8 dBm	-43 dB
88,150 MHz	550 kHz	20 dB	-8 dBm	-43 dB
88,200 MHz	600 kHz	20 dB	-8 dBm	-43 dB



Rx: 2 (car radio)

Unwanted: **FM** Modulated according to ITU-R BS.641

Frequency: variable

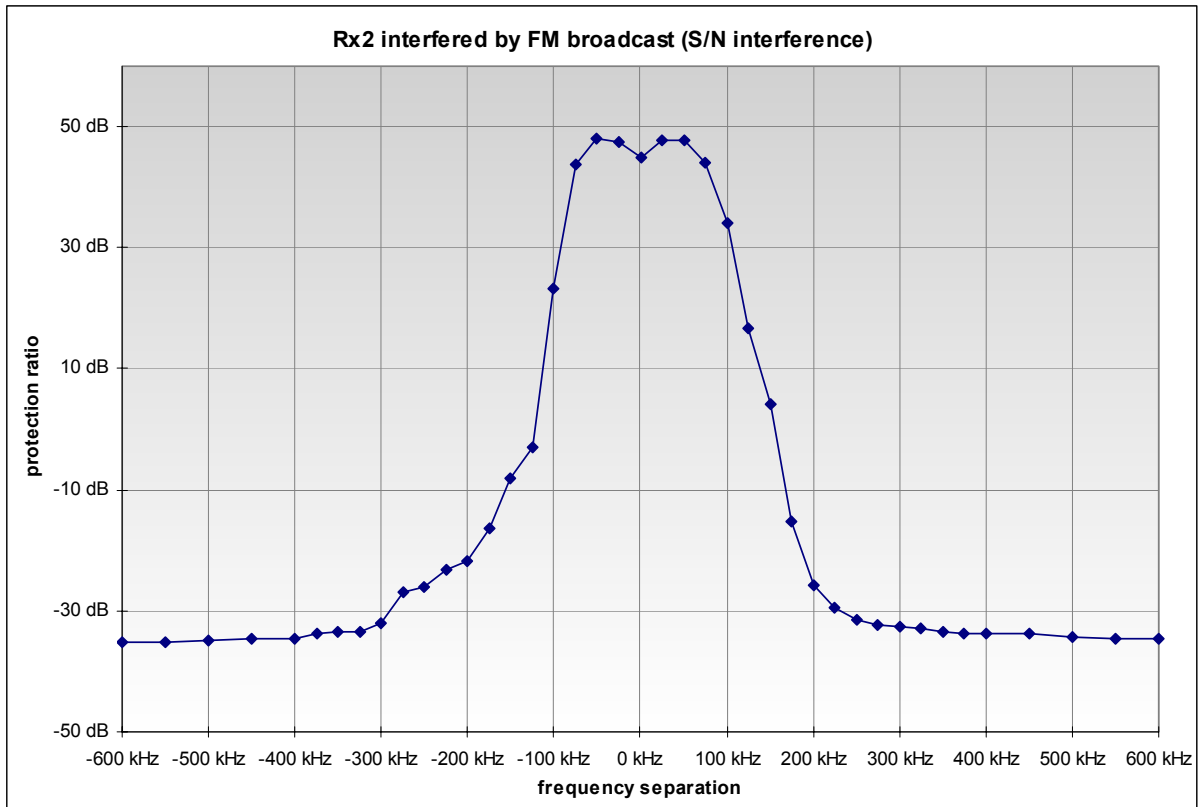
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-51 dBm**

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		FM-Generator Level	FM-Level Receiver	prot. ratio
87,000 MHz	-600 kHz	-3 dBm	-15 dBm	-35 dB
87,050 MHz	-550 kHz	-3 dBm	-15 dBm	-35 dB
87,100 MHz	-500 kHz	-4 dBm	-16 dBm	-35 dB
87,150 MHz	-450 kHz	-4 dBm	-16 dBm	-35 dB
87,200 MHz	-400 kHz	-4 dBm	-16 dBm	-35 dB
87,225 MHz	-375 kHz	-5 dBm	-17 dBm	-34 dB
87,250 MHz	-350 kHz	-5 dBm	-17 dBm	-34 dB
87,275 MHz	-325 kHz	-5 dBm	-17 dBm	-34 dB
87,300 MHz	-300 kHz	-7 dBm	-19 dBm	-32 dB
87,325 MHz	-275 kHz	-12 dBm	-24 dBm	-27 dB
87,350 MHz	-250 kHz	-13 dBm	-25 dBm	-26 dB
87,375 MHz	-225 kHz	-15 dBm	-27 dBm	-23 dB
87,400 MHz	-200 kHz	-17 dBm	-29 dBm	-22 dB
87,425 MHz	-175 kHz	-22 dBm	-34 dBm	-16 dB
87,450 MHz	-150 kHz	-31 dBm	-43 dBm	-8 dB
87,475 MHz	-125 kHz	-36 dBm	-48 dBm	-3 dB
87,500 MHz	-100 kHz	-62 dBm	-74 dBm	23 dB
87,525 MHz	-75 kHz	-82 dBm	-94 dBm	44 dB
87,550 MHz	-50 kHz	-87 dBm	-99 dBm	48 dB
87,575 MHz	-25 kHz	-86 dBm	-98 dBm	48 dB
87,600 MHz	0 kHz	-84 dBm	-96 dBm	45 dB
87,625 MHz	25 kHz	-86 dBm	-98 dBm	48 dB
87,650 MHz	50 kHz	-86 dBm	-98 dBm	48 dB
87,675 MHz	75 kHz	-83 dBm	-95 dBm	44 dB
87,700 MHz	100 kHz	-73 dBm	-85 dBm	34 dB
87,725 MHz	125 kHz	-55 dBm	-67 dBm	17 dB
87,750 MHz	150 kHz	-43 dBm	-55 dBm	4 dB
87,775 MHz	175 kHz	-24 dBm	-36 dBm	-15 dB
87,800 MHz	200 kHz	-13 dBm	-25 dBm	-26 dB
87,825 MHz	225 kHz	-9 dBm	-21 dBm	-30 dB
87,850 MHz	250 kHz	-7 dBm	-19 dBm	-32 dB
87,875 MHz	275 kHz	-6 dBm	-18 dBm	-32 dB
87,900 MHz	300 kHz	-6 dBm	-18 dBm	-33 dB
87,925 MHz	325 kHz	-6 dBm	-18 dBm	-33 dB
87,950 MHz	350 kHz	-5 dBm	-17 dBm	-33 dB
87,975 MHz	375 kHz	-5 dBm	-17 dBm	-34 dB
88,000 MHz	400 kHz	-5 dBm	-17 dBm	-34 dB
88,050 MHz	450 kHz	-5 dBm	-17 dBm	-34 dB
88,100 MHz	500 kHz	-4 dBm	-16 dBm	-34 dB
88,150 MHz	550 kHz	-4 dBm	-16 dBm	-35 dB
88,200 MHz	600 kHz	-4 dBm	-16 dBm	-35 dB



Rx: 2 (car radio)

Unwanted: **FM Modulated according to ITU-R BS.641**

Frequency: variable

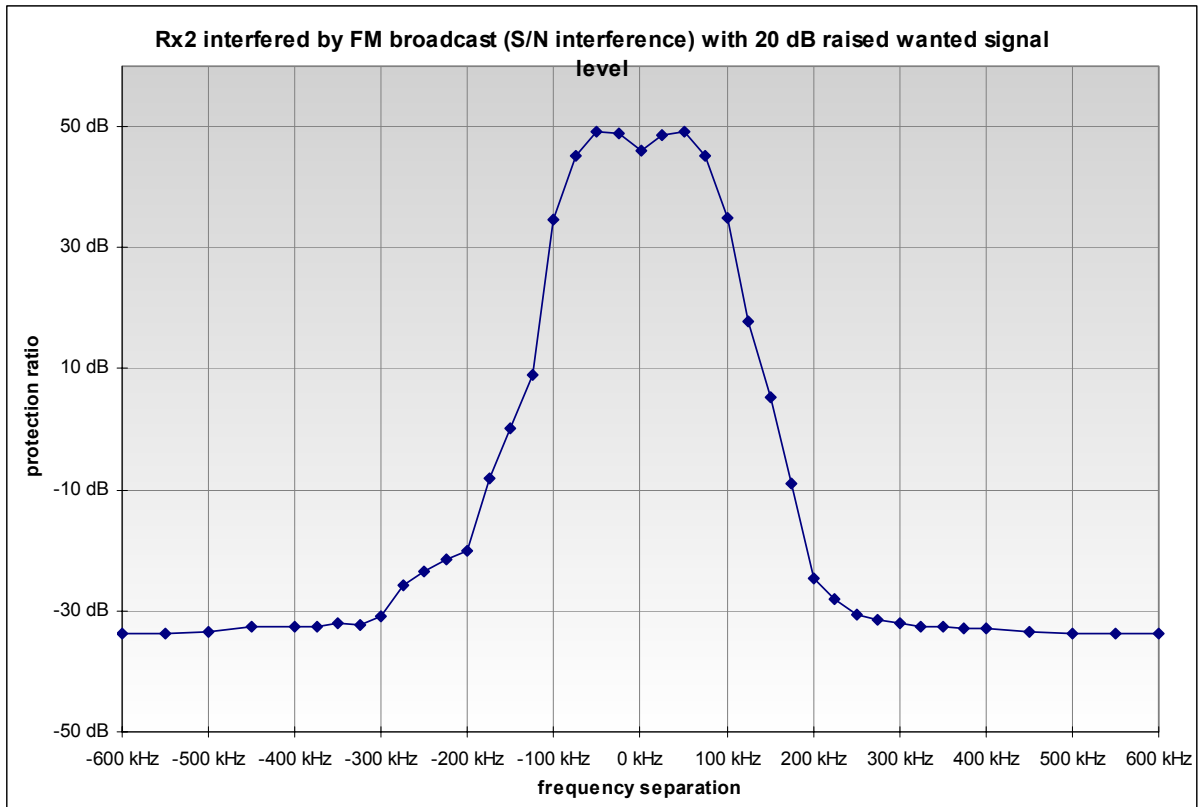
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-30 dBm**

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		FM-Generator Level	FM-Level Receiver	prot. ratio
87,000 MHz	-600 kHz	16 dBm	4 dBm	-34 dB
87,050 MHz	-550 kHz	16 dBm	4 dBm	-34 dB
87,100 MHz	-500 kHz	16 dBm	4 dBm	-34 dB
87,150 MHz	-450 kHz	15 dBm	3 dBm	-33 dB
87,200 MHz	-400 kHz	15 dBm	3 dBm	-33 dB
87,225 MHz	-375 kHz	15 dBm	3 dBm	-33 dB
87,250 MHz	-350 kHz	14 dBm	2 dBm	-32 dB
87,275 MHz	-325 kHz	15 dBm	3 dBm	-32 dB
87,300 MHz	-300 kHz	13 dBm	1 dBm	-31 dB
87,325 MHz	-275 kHz	8 dBm	-4 dBm	-26 dB
87,350 MHz	-250 kHz	6 dBm	-6 dBm	-24 dB
87,375 MHz	-225 kHz	4 dBm	-8 dBm	-22 dB
87,400 MHz	-200 kHz	3 dBm	-10 dBm	-20 dB
87,425 MHz	-175 kHz	-10 dBm	-22 dBm	-8 dB
87,450 MHz	-150 kHz	-18 dBm	-30 dBm	0 dB
87,475 MHz	-125 kHz	-27 dBm	-39 dBm	9 dB
87,500 MHz	-100 kHz	-52 dBm	-64 dBm	35 dB
87,525 MHz	-75 kHz	-63 dBm	-75 dBm	45 dB
87,550 MHz	-50 kHz	-67 dBm	-79 dBm	49 dB
87,575 MHz	-25 kHz	-67 dBm	-79 dBm	49 dB
87,600 MHz	0 kHz	-64 dBm	-76 dBm	46 dB
87,625 MHz	25 kHz	-66 dBm	-78 dBm	49 dB
87,650 MHz	50 kHz	-67 dBm	-79 dBm	49 dB
87,675 MHz	75 kHz	-63 dBm	-75 dBm	45 dB
87,700 MHz	100 kHz	-53 dBm	-65 dBm	35 dB
87,725 MHz	125 kHz	-36 dBm	-48 dBm	18 dB
87,750 MHz	150 kHz	-23 dBm	-35 dBm	5 dB
87,775 MHz	175 kHz	-9 dBm	-21 dBm	-9 dB
87,800 MHz	200 kHz	7 dBm	-5 dBm	-25 dB
87,825 MHz	225 kHz	10 dBm	-2 dBm	-28 dB
87,850 MHz	250 kHz	13 dBm	1 dBm	-31 dB
87,875 MHz	275 kHz	14 dBm	2 dBm	-32 dB
87,900 MHz	300 kHz	14 dBm	2 dBm	-32 dB
87,925 MHz	325 kHz	15 dBm	3 dBm	-33 dB
87,950 MHz	350 kHz	15 dBm	3 dBm	-33 dB
87,975 MHz	375 kHz	15 dBm	3 dBm	-33 dB
88,000 MHz	400 kHz	15 dBm	3 dBm	-33 dB
88,050 MHz	450 kHz	16 dBm	4 dBm	-34 dB
88,100 MHz	500 kHz	16 dBm	4 dBm	-34 dB
88,150 MHz	550 kHz	16 dBm	4 dBm	-34 dB
88,200 MHz	600 kHz	16 dBm	4 dBm	-34 dB



Rx: 4 (home hifi receiver)

Unwanted: **FM Modulated according to ITU-R BS.641**

Frequency: variable

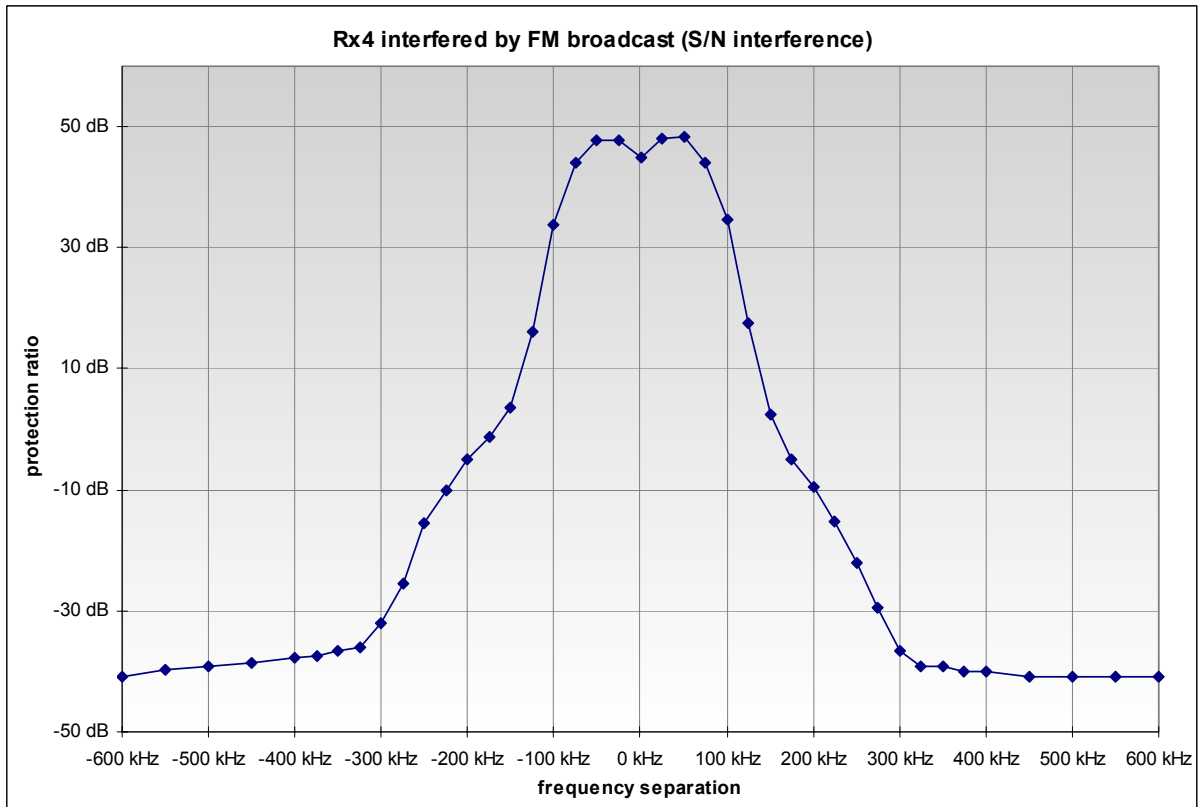
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-55 dBm**

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		FM-Generator Level	FM-Level Receiver	prot. ratio
87,000 MHz	-600 kHz	-2 dBm	-14 dBm	-41 dB
87,050 MHz	-550 kHz	-3 dBm	-15 dBm	-40 dB
87,100 MHz	-500 kHz	-4 dBm	-16 dBm	-39 dB
87,150 MHz	-450 kHz	-4 dBm	-16 dBm	-39 dB
87,200 MHz	-400 kHz	-5 dBm	-17 dBm	-38 dB
87,225 MHz	-375 kHz	-6 dBm	-18 dBm	-38 dB
87,250 MHz	-350 kHz	-7 dBm	-19 dBm	-37 dB
87,275 MHz	-325 kHz	-7 dBm	-19 dBm	-36 dB
87,300 MHz	-300 kHz	-11 dBm	-23 dBm	-32 dB
87,325 MHz	-275 kHz	-17 dBm	-29 dBm	-26 dB
87,350 MHz	-250 kHz	-27 dBm	-39 dBm	-16 dB
87,375 MHz	-225 kHz	-33 dBm	-45 dBm	-10 dB
87,400 MHz	-200 kHz	-38 dBm	-50 dBm	-5 dB
87,425 MHz	-175 kHz	-42 dBm	-54 dBm	-1 dB
87,450 MHz	-150 kHz	-47 dBm	-59 dBm	4 dB
87,475 MHz	-125 kHz	-59 dBm	-71 dBm	16 dB
87,500 MHz	-100 kHz	-77 dBm	-89 dBm	34 dB
87,525 MHz	-75 kHz	-87 dBm	-99 dBm	44 dB
87,550 MHz	-50 kHz	-91 dBm	-103 dBm	48 dB
87,575 MHz	-25 kHz	-91 dBm	-103 dBm	48 dB
87,600 MHz	0 kHz	-88 dBm	-100 dBm	45 dB
87,625 MHz	25 kHz	-91 dBm	-103 dBm	48 dB
87,650 MHz	50 kHz	-91 dBm	-103 dBm	48 dB
87,675 MHz	75 kHz	-87 dBm	-99 dBm	44 dB
87,700 MHz	100 kHz	-78 dBm	-90 dBm	35 dB
87,725 MHz	125 kHz	-60 dBm	-72 dBm	17 dB
87,750 MHz	150 kHz	-45 dBm	-57 dBm	2 dB
87,775 MHz	175 kHz	-38 dBm	-50 dBm	-5 dB
87,800 MHz	200 kHz	-33 dBm	-45 dBm	-10 dB
87,825 MHz	225 kHz	-28 dBm	-40 dBm	-15 dB
87,850 MHz	250 kHz	-21 dBm	-33 dBm	-22 dB
87,875 MHz	275 kHz	-14 dBm	-26 dBm	-29 dB
87,900 MHz	300 kHz	-6 dBm	-18 dBm	-37 dB
87,925 MHz	325 kHz	-4 dBm	-16 dBm	-39 dB
87,950 MHz	350 kHz	-4 dBm	-16 dBm	-39 dB
87,975 MHz	375 kHz	-3 dBm	-15 dBm	-40 dB
88,000 MHz	400 kHz	-3 dBm	-15 dBm	-40 dB
88,050 MHz	450 kHz	-2 dBm	-14 dBm	-41 dB
88,100 MHz	500 kHz	-2 dBm	-14 dBm	-41 dB
88,150 MHz	550 kHz	-2 dBm	-14 dBm	-41 dB
88,200 MHz	600 kHz	-2 dBm	-14 dBm	-41 dB





Rx: 4 (home hifi receiver)

Unwanted: **FM Modulated according to ITU-R BS.641**

Frequency: variable

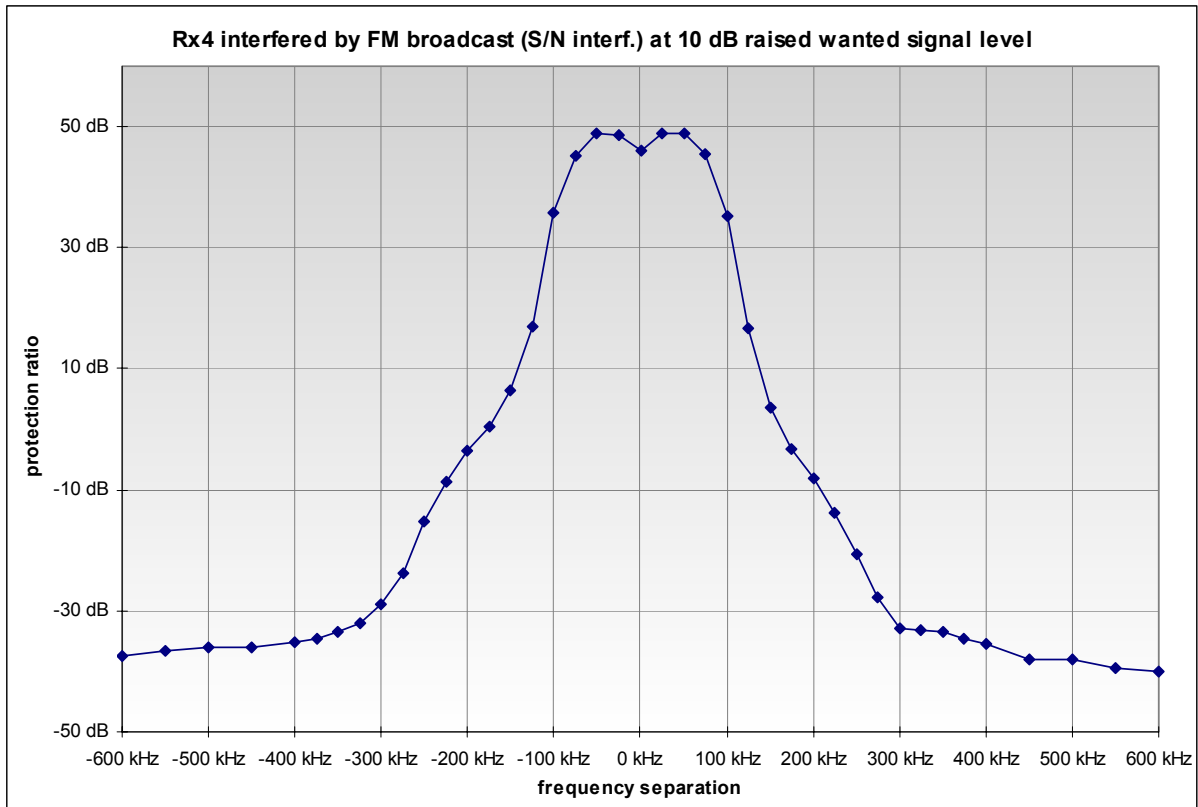
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-45 dBm**

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		FM-Generator Level	FM-Level Receiver	prot. ratio
87,000 MHz	-600 kHz	5 dBm	-8 dBm	-38 dB
87,050 MHz	-550 kHz	4 dBm	-8 dBm	-37 dB
87,100 MHz	-500 kHz	3 dBm	-9 dBm	-36 dB
87,150 MHz	-450 kHz	3 dBm	-9 dBm	-36 dB
87,200 MHz	-400 kHz	2 dBm	-10 dBm	-35 dB
87,225 MHz	-375 kHz	2 dBm	-10 dBm	-35 dB
87,250 MHz	-350 kHz	1 dBm	-12 dBm	-34 dB
87,275 MHz	-325 kHz	-1 dBm	-13 dBm	-32 dB
87,300 MHz	-300 kHz	-4 dBm	-16 dBm	-29 dB
87,325 MHz	-275 kHz	-9 dBm	-21 dBm	-24 dB
87,350 MHz	-250 kHz	-18 dBm	-30 dBm	-15 dB
87,375 MHz	-225 kHz	-24 dBm	-36 dBm	-9 dB
87,400 MHz	-200 kHz	-30 dBm	-42 dBm	-4 dB
87,425 MHz	-175 kHz	-33 dBm	-45 dBm	0 dB
87,450 MHz	-150 kHz	-39 dBm	-51 dBm	6 dB
87,475 MHz	-125 kHz	-50 dBm	-62 dBm	17 dB
87,500 MHz	-100 kHz	-69 dBm	-81 dBm	36 dB
87,525 MHz	-75 kHz	-78 dBm	-90 dBm	45 dB
87,550 MHz	-50 kHz	-82 dBm	-94 dBm	49 dB
87,575 MHz	-25 kHz	-82 dBm	-94 dBm	49 dB
87,600 MHz	0 kHz	-79 dBm	-91 dBm	46 dB
87,625 MHz	25 kHz	-82 dBm	-94 dBm	49 dB
87,650 MHz	50 kHz	-82 dBm	-94 dBm	49 dB
87,675 MHz	75 kHz	-79 dBm	-91 dBm	46 dB
87,700 MHz	100 kHz	-68 dBm	-80 dBm	35 dB
87,725 MHz	125 kHz	-50 dBm	-62 dBm	17 dB
87,750 MHz	150 kHz	-37 dBm	-49 dBm	4 dB
87,775 MHz	175 kHz	-30 dBm	-42 dBm	-3 dB
87,800 MHz	200 kHz	-25 dBm	-37 dBm	-8 dB
87,825 MHz	225 kHz	-19 dBm	-31 dBm	-14 dB
87,850 MHz	250 kHz	-12 dBm	-24 dBm	-21 dB
87,875 MHz	275 kHz	-5 dBm	-17 dBm	-28 dB
87,900 MHz	300 kHz	0 dBm	-12 dBm	-33 dB
87,925 MHz	325 kHz	0 dBm	-12 dBm	-33 dB
87,950 MHz	350 kHz	1 dBm	-11 dBm	-34 dB
87,975 MHz	375 kHz	2 dBm	-11 dBm	-35 dB
88,000 MHz	400 kHz	3 dBm	-10 dBm	-36 dB
88,050 MHz	450 kHz	5 dBm	-7 dBm	-38 dB
88,100 MHz	500 kHz	5 dBm	-7 dBm	-38 dB
88,150 MHz	550 kHz	6 dBm	-6 dBm	-39 dB
88,200 MHz	600 kHz	7 dBm	-5 dBm	-40 dB



Rx: **4** (home hifi receiver)

Unwanted: **FM** Modulated according to ITU-R BS.641

Frequency: variable

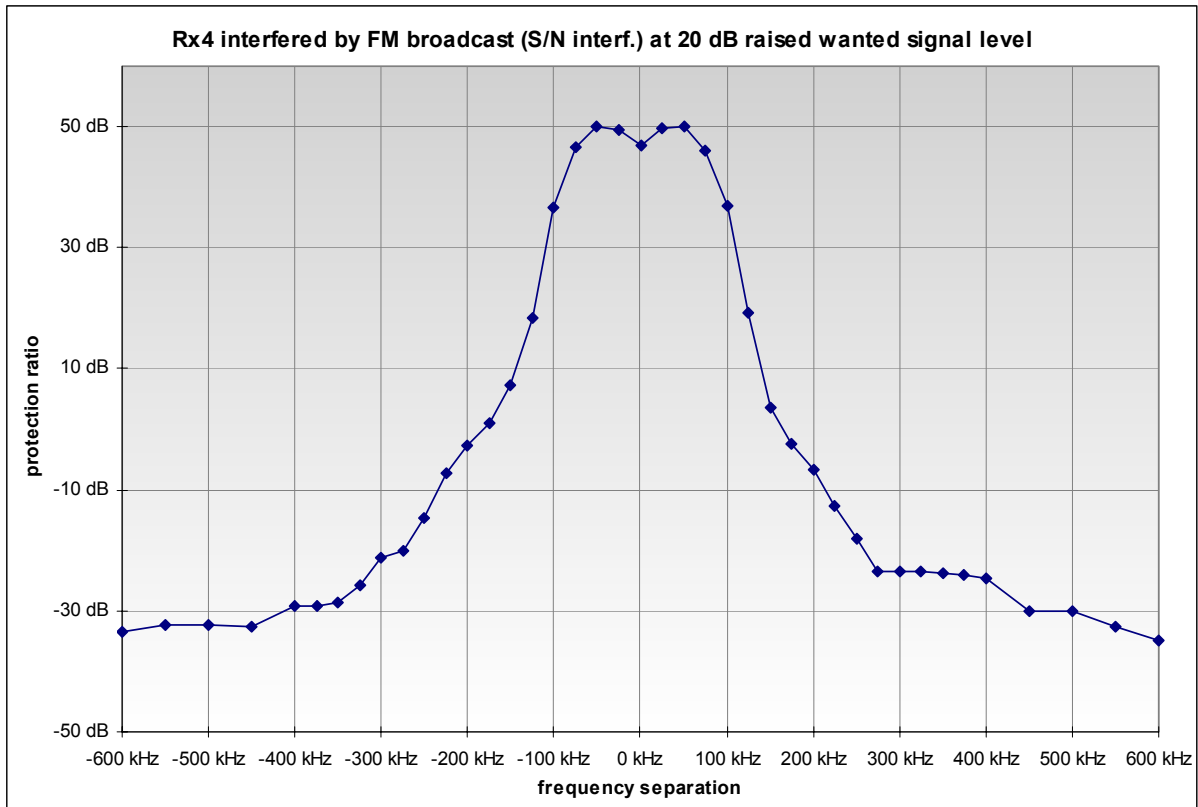
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-35 dBm**

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		FM-Generator Level	FM-Level Receiver	prot. ratio
87,000 MHz	-600 kHz	11 dBm	-1 dBm	-33 dB
87,050 MHz	-550 kHz	10 dBm	-2 dBm	-32 dB
87,100 MHz	-500 kHz	10 dBm	-2 dBm	-32 dB
87,150 MHz	-450 kHz	10 dBm	-2 dBm	-33 dB
87,200 MHz	-400 kHz	7 dBm	-5 dBm	-29 dB
87,225 MHz	-375 kHz	7 dBm	-5 dBm	-29 dB
87,250 MHz	-350 kHz	6 dBm	-6 dBm	-29 dB
87,275 MHz	-325 kHz	3 dBm	-9 dBm	-26 dB
87,300 MHz	-300 kHz	-1 dBm	-13 dBm	-21 dB
87,325 MHz	-275 kHz	-3 dBm	-15 dBm	-20 dB
87,350 MHz	-250 kHz	-8 dBm	-20 dBm	-15 dB
87,375 MHz	-225 kHz	-15 dBm	-27 dBm	-7 dB
87,400 MHz	-200 kHz	-20 dBm	-32 dBm	-3 dB
87,425 MHz	-175 kHz	-23 dBm	-35 dBm	1 dB
87,450 MHz	-150 kHz	-30 dBm	-42 dBm	7 dB
87,475 MHz	-125 kHz	-41 dBm	-53 dBm	19 dB
87,500 MHz	-100 kHz	-59 dBm	-71 dBm	37 dB
87,525 MHz	-75 kHz	-69 dBm	-81 dBm	47 dB
87,550 MHz	-50 kHz	-73 dBm	-85 dBm	50 dB
87,575 MHz	-25 kHz	-72 dBm	-84 dBm	50 dB
87,600 MHz	0 kHz	-70 dBm	-82 dBm	47 dB
87,625 MHz	25 kHz	-72 dBm	-84 dBm	50 dB
87,650 MHz	50 kHz	-72 dBm	-84 dBm	50 dB
87,675 MHz	75 kHz	-69 dBm	-81 dBm	46 dB
87,700 MHz	100 kHz	-60 dBm	-72 dBm	37 dB
87,725 MHz	125 kHz	-42 dBm	-54 dBm	19 dB
87,750 MHz	150 kHz	-26 dBm	-38 dBm	4 dB
87,775 MHz	175 kHz	-20 dBm	-32 dBm	-2 dB
87,800 MHz	200 kHz	-16 dBm	-28 dBm	-7 dB
87,825 MHz	225 kHz	-10 dBm	-22 dBm	-13 dB
87,850 MHz	250 kHz	-4 dBm	-16 dBm	-18 dB
87,875 MHz	275 kHz	1 dBm	-11 dBm	-24 dB
87,900 MHz	300 kHz	1 dBm	-11 dBm	-24 dB
87,925 MHz	325 kHz	1 dBm	-11 dBm	-24 dB
87,950 MHz	350 kHz	1 dBm	-11 dBm	-24 dB
87,975 MHz	375 kHz	2 dBm	-10 dBm	-24 dB
88,000 MHz	400 kHz	2 dBm	-10 dBm	-25 dB
88,050 MHz	450 kHz	8 dBm	-4 dBm	-30 dB
88,100 MHz	500 kHz	8 dBm	-4 dBm	-30 dB
88,150 MHz	550 kHz	10 dBm	-2 dBm	-33 dB
88,200 MHz	600 kHz	13 dBm	1 dBm	-35 dB



Rx: 7 (car radio)

Unwanted: **FM** Modulated according to ITU-R BS.641

Frequency: variable

Full level: 15 dBm at 0 dB atten.

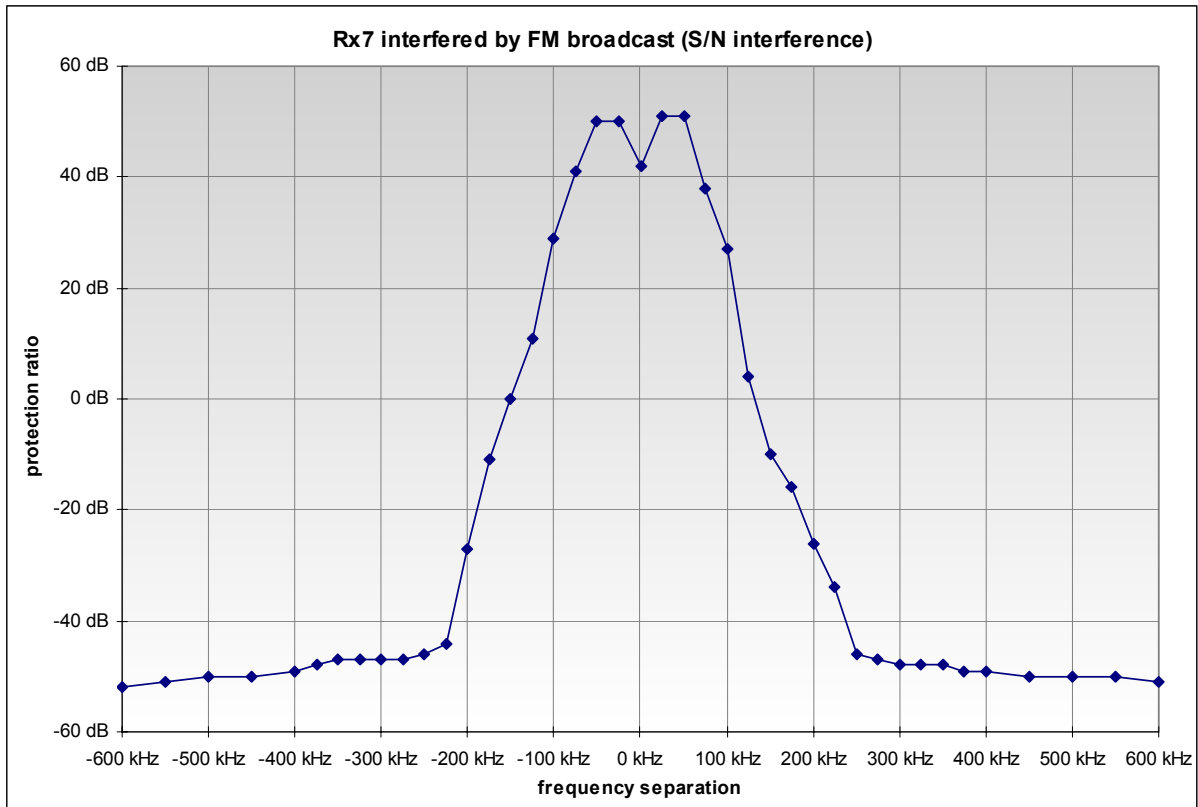
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: -51 dBm

Criteria: **FM-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted	S/N Interference			
frequency	freq.-differ.	FM atten.	FM level	prot. ratio
87,000 MHz	-600 kHz	14 dBm	1 dBm	-52 dB
87,050 MHz	-550 kHz	15 dBm	0 dBm	-51 dB
87,100 MHz	-500 kHz	16 dBm	-1 dBm	-50 dB
87,150 MHz	-450 kHz	16 dBm	-1 dBm	-50 dB
87,200 MHz	-400 kHz	17 dBm	-2 dBm	-49 dB
87,225 MHz	-375 kHz	18 dBm	-3 dBm	-48 dB
87,250 MHz	-350 kHz	19 dBm	-4 dBm	-47 dB
87,275 MHz	-325 kHz	19 dBm	-4 dBm	-47 dB
87,300 MHz	-300 kHz	19 dBm	-4 dBm	-47 dB
87,325 MHz	-275 kHz	19 dBm	-4 dBm	-47 dB
87,350 MHz	-250 kHz	20 dBm	-5 dBm	-46 dB
87,375 MHz	-225 kHz	22 dBm	-7 dBm	-44 dB
87,400 MHz	-200 kHz	39 dBm	-24 dBm	-27 dB
87,425 MHz	-175 kHz	55 dBm	-40 dBm	-11 dB
87,450 MHz	-150 kHz	66 dBm	-51 dBm	0 dB
87,475 MHz	-125 kHz	77 dBm	-62 dBm	11 dB
87,500 MHz	-100 kHz	95 dBm	-80 dBm	29 dB
87,525 MHz	-75 kHz	107 dBm	-92 dBm	41 dB
87,550 MHz	-50 kHz	116 dBm	-101 dBm	50 dB
87,575 MHz	-25 kHz	116 dBm	-101 dBm	50 dB
87,600 MHz	0 kHz	108 dBm	-93 dBm	42 dB
87,625 MHz	25 kHz	117 dBm	-102 dBm	51 dB
87,650 MHz	50 kHz	117 dBm	-102 dBm	51 dB
87,675 MHz	75 kHz	104 dBm	-89 dBm	38 dB
87,700 MHz	100 kHz	93 dBm	-78 dBm	27 dB
87,725 MHz	125 kHz	70 dBm	-55 dBm	4 dB
87,750 MHz	150 kHz	56 dBm	-41 dBm	-10 dB
87,775 MHz	175 kHz	50 dBm	-35 dBm	-16 dB
87,800 MHz	200 kHz	40 dBm	-25 dBm	-26 dB
87,825 MHz	225 kHz	32 dBm	-17 dBm	-34 dB
87,850 MHz	250 kHz	20 dBm	-5 dBm	-46 dB
87,875 MHz	275 kHz	19 dBm	-4 dBm	-47 dB
87,900 MHz	300 kHz	18 dBm	-3 dBm	-48 dB
87,925 MHz	325 kHz	18 dBm	-3 dBm	-48 dB
87,950 MHz	350 kHz	18 dBm	-3 dBm	-48 dB
87,975 MHz	375 kHz	17 dBm	-2 dBm	-49 dB
88,000 MHz	400 kHz	17 dBm	-2 dBm	-49 dB
88,050 MHz	450 kHz	16 dBm	-1 dBm	-50 dB
88,100 MHz	500 kHz	16 dBm	-1 dBm	-50 dB
88,150 MHz	550 kHz	16 dBm	-1 dBm	-50 dB
88,200 MHz	600 kHz	15 dBm	0 dBm	-51 dB



Rx: **5 (portable radio)**

Unwanted: **FM** **Modulated according to ITU-R BS.641**

Frequency: variable

Path Att. 12 dB

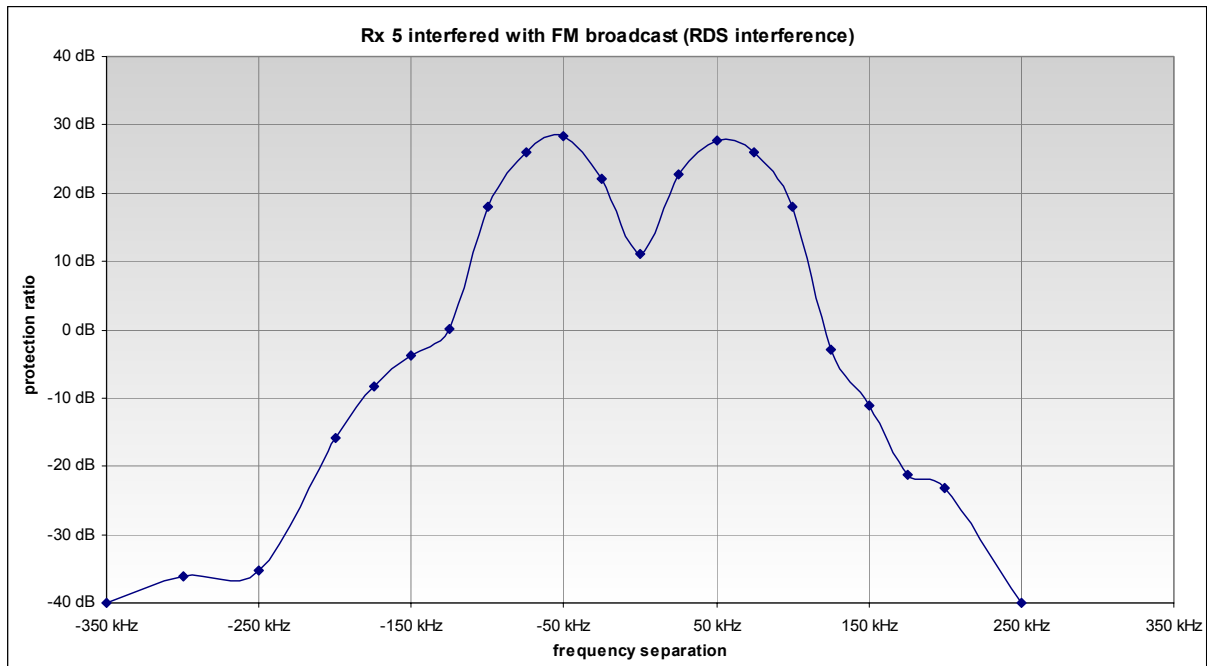
Wanted: **RDS-Service**

Frequency: 87,600 MHz

Level: -36 dBm

Criteria: **first occurrence of bit errors**

unwanted		RDS Interference		
frequency	freq.-differ.	FM Gen. Lev.	FM level	prot. ratio
87,250 MHz	-350 kHz	16 dBm	4 dBm	-40 dB
87,300 MHz	-300 kHz	12 dBm	0 dBm	-36 dB
87,350 MHz	-250 kHz	11 dBm	-1 dBm	-35 dB
87,400 MHz	-200 kHz	-8 dBm	-20 dBm	-16 dB
87,425 MHz	-175 kHz	-16 dBm	-28 dBm	-8 dB
87,450 MHz	-150 kHz	-20 dBm	-32 dBm	-4 dB
87,475 MHz	-125 kHz	-24 dBm	-36 dBm	0 dB
87,500 MHz	-100 kHz	-42 dBm	-54 dBm	18 dB
87,525 MHz	-75 kHz	-50 dBm	-62 dBm	26 dB
87,550 MHz	-50 kHz	-52 dBm	-64 dBm	28 dB
87,575 MHz	-25 kHz	-46 dBm	-58 dBm	22 dB
87,600 MHz	0 kHz	-35 dBm	-47 dBm	11 dB
87,625 MHz	25 kHz	-47 dBm	-59 dBm	23 dB
87,650 MHz	50 kHz	-52 dBm	-64 dBm	28 dB
87,675 MHz	75 kHz	-50 dBm	-62 dBm	26 dB
87,700 MHz	100 kHz	-42 dBm	-54 dBm	18 dB
87,725 MHz	125 kHz	-21 dBm	-33 dBm	-3 dB
87,750 MHz	150 kHz	-13 dBm	-25 dBm	-11 dB
87,775 MHz	175 kHz	-3 dBm	-15 dBm	-21 dB
87,800 MHz	200 kHz	-1 dBm	-13 dBm	-23 dB
87,850 MHz	250 kHz	16 dBm	4 dBm	-40 dB





Rx: **7 (car radio)**

Unwanted: **FM** **Modulated according to ITU-R BS.641**

Frequency: variable

Full level: 11 dBm at 0 dB atten.

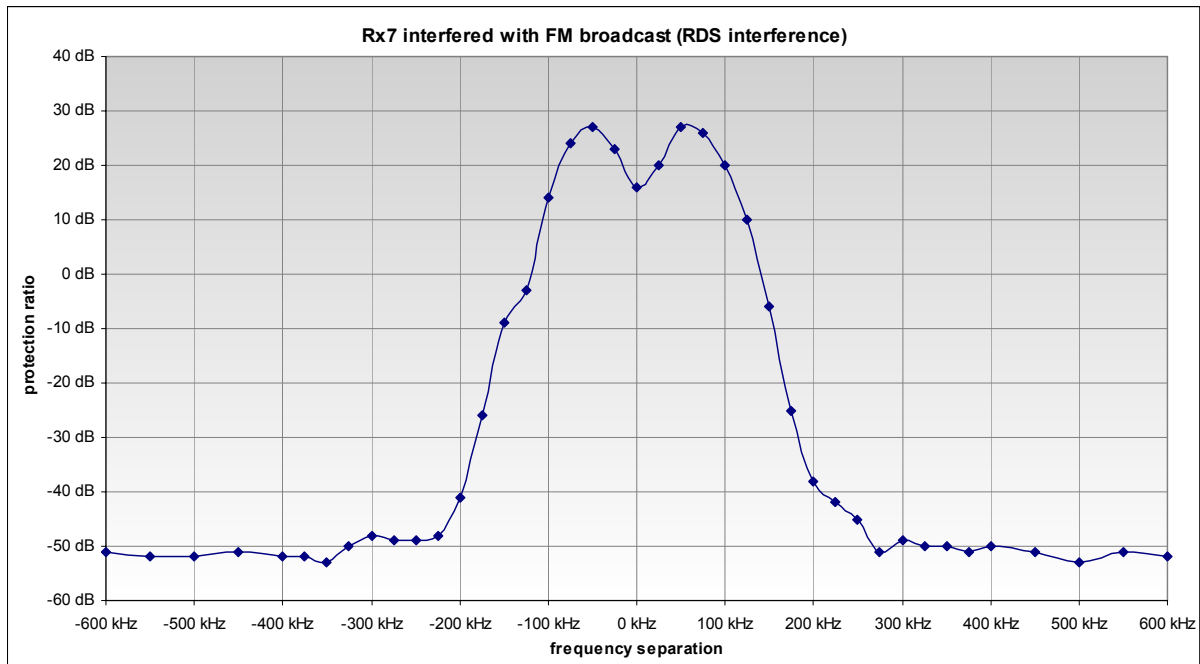
Wanted: **RDS-Service**

Frequency: 87,600 MHz

Level: -46 dBm

Criteria: **first occurrence of bit errors**

unwanted frequency	freq.-differ.	RDS Interference		
		FM atten.	FM level	prot. ratio
87,000 MHz	-600 kHz	6 dB	5 dBm	-51 dB
87,050 MHz	-550 kHz	5 dB	6 dBm	-52 dB
87,100 MHz	-500 kHz	5 dB	6 dBm	-52 dB
87,150 MHz	-450 kHz	6 dB	5 dBm	-51 dB
87,200 MHz	-400 kHz	5 dB	6 dBm	-52 dB
87,225 MHz	-375 kHz	5 dB	6 dBm	-52 dB
87,250 MHz	-350 kHz	4 dB	7 dBm	-53 dB
87,275 MHz	-325 kHz	7 dB	4 dBm	-50 dB
87,300 MHz	-300 kHz	9 dB	2 dBm	-48 dB
87,325 MHz	-275 kHz	8 dB	3 dBm	-49 dB
87,350 MHz	-250 kHz	8 dB	3 dBm	-49 dB
87,375 MHz	-225 kHz	9 dB	2 dBm	-48 dB
87,400 MHz	-200 kHz	16 dB	-5 dBm	-41 dB
87,425 MHz	-175 kHz	31 dB	-20 dBm	-26 dB
87,450 MHz	-150 kHz	48 dB	-37 dBm	-9 dB
87,475 MHz	-125 kHz	54 dB	-43 dBm	-3 dB
87,500 MHz	-100 kHz	71 dB	-60 dBm	14 dB
87,525 MHz	-75 kHz	81 dB	-70 dBm	24 dB
87,550 MHz	-50 kHz	84 dB	-73 dBm	27 dB
87,575 MHz	-25 kHz	80 dB	-69 dBm	23 dB
87,600 MHz	0 kHz	73 dB	-62 dBm	16 dB
87,625 MHz	25 kHz	77 dB	-66 dBm	20 dB
87,650 MHz	50 kHz	84 dB	-73 dBm	27 dB
87,675 MHz	75 kHz	83 dB	-72 dBm	26 dB
87,700 MHz	100 kHz	77 dB	-66 dBm	20 dB
87,725 MHz	125 kHz	67 dB	-56 dBm	10 dB
87,750 MHz	150 kHz	51 dB	-40 dBm	-6 dB
87,775 MHz	175 kHz	32 dB	-21 dBm	-25 dB
87,800 MHz	200 kHz	19 dB	-8 dBm	-38 dB
87,825 MHz	225 kHz	15 dB	-4 dBm	-42 dB
87,850 MHz	250 kHz	12 dB	-1 dBm	-45 dB
87,875 MHz	275 kHz	6 dB	5 dBm	-51 dB
87,900 MHz	300 kHz	8 dB	3 dBm	-49 dB
87,925 MHz	325 kHz	7 dB	4 dBm	-50 dB
87,950 MHz	350 kHz	7 dB	4 dBm	-50 dB
87,975 MHz	375 kHz	6 dB	5 dBm	-51 dB
88,000 MHz	400 kHz	7 dB	4 dBm	-50 dB
88,050 MHz	450 kHz	6 dB	5 dBm	-51 dB
88,100 MHz	500 kHz	4 dB	7 dBm	-53 dB
88,150 MHz	550 kHz	6 dB	5 dBm	-51 dB
88,200 MHz	600 kHz	5 dB	6 dBm	-52 dB



## 1.2 FM broadcast -> Narrowband FM / BOS reception

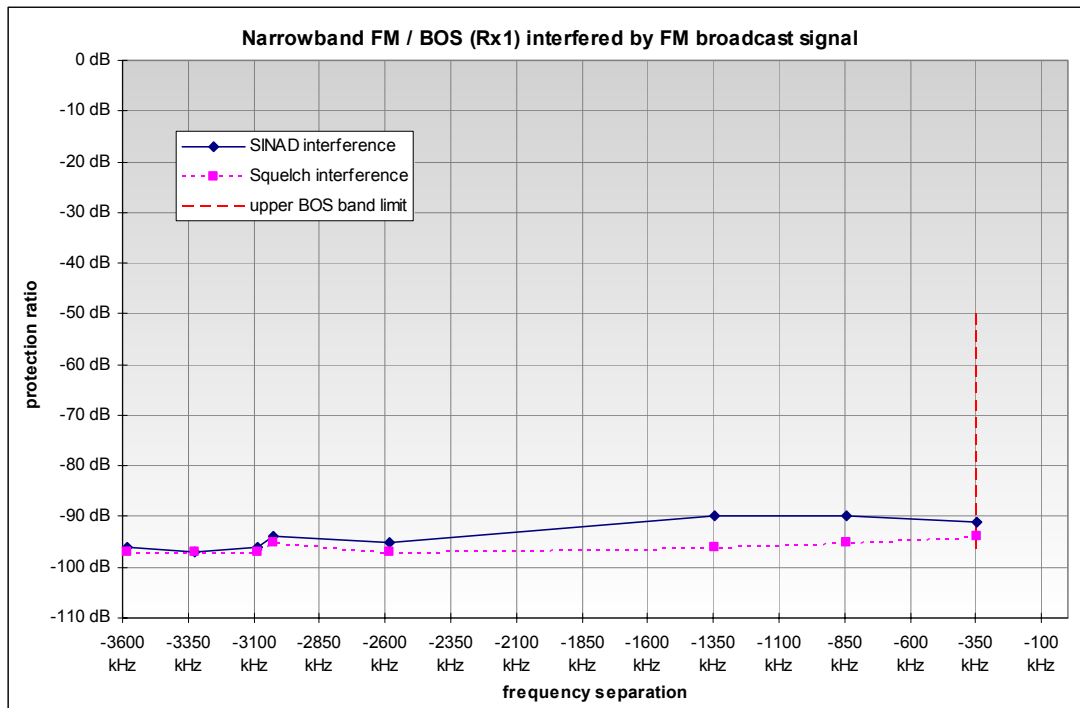
Rx: **1**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity:  
 -114 dBm  
 Squelch sensitivity:  
 -110 dBm

Unwanted: **FM** **Modulated according to ITU-R BS.641**  
 Frequency: 87,600 MHz (center)  
 Full level: 3 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -104 dBm  
 Level for squelch: -100 dBm

Criteria: **FM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and FM signal present ("squelch interference")**  
**FM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		FM atten.	FM level	prot. ratio	FM atten.	FM level	prot. ratio	DRM atten.	DRM level
87,255 MHz	-345 kHz	16 dB	-13 dBm	-91 dB	9 dB	-6 dBm	-94 dB	-	-
86,755 MHz	-845 kHz	17 dB	-14 dBm	-90 dB	8 dB	-5 dBm	-95 dB	-	-
86,255 MHz	-1345 kHz	17 dB	-14 dBm	-90 dB	7 dB	-4 dBm	-96 dB	-	-
85,015 MHz	-2585 kHz	12 dB	-9 dBm	-95 dB	6 dB	-3 dBm	-97 dB	-	-
84,575 MHz	-3025 kHz	13 dB	-10 dBm	-94 dB	8 dB	-5 dBm	-95 dB	-	-
84,515 MHz	-3085 kHz	11 dB	-8 dBm	-96 dB	6 dB	-3 dBm	-97 dB	-	-
84,275 MHz	-3325 kHz	10 dB	-7 dBm	-97 dB	6 dB	-3 dBm	-97 dB	-	-
84,015 MHz	-3585 kHz	11 dB	-8 dBm	-96 dB	6 dB	-3 dBm	-97 dB	-	-



### 1.3 FM broadcast -> Aeronautical Radionavigation (VOR) reception

Rx: 1

Undist. Course

dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1

Sensitivity Course: -98 dBm

Sensitivity Flag: -107 dBm

Unwanted: **FM, modulated according to ITU-R BS.641 (transmitter = Fxi-250)**

Frequency: (variable) (center)

Full level: 8 dBm at 0 dB atten.

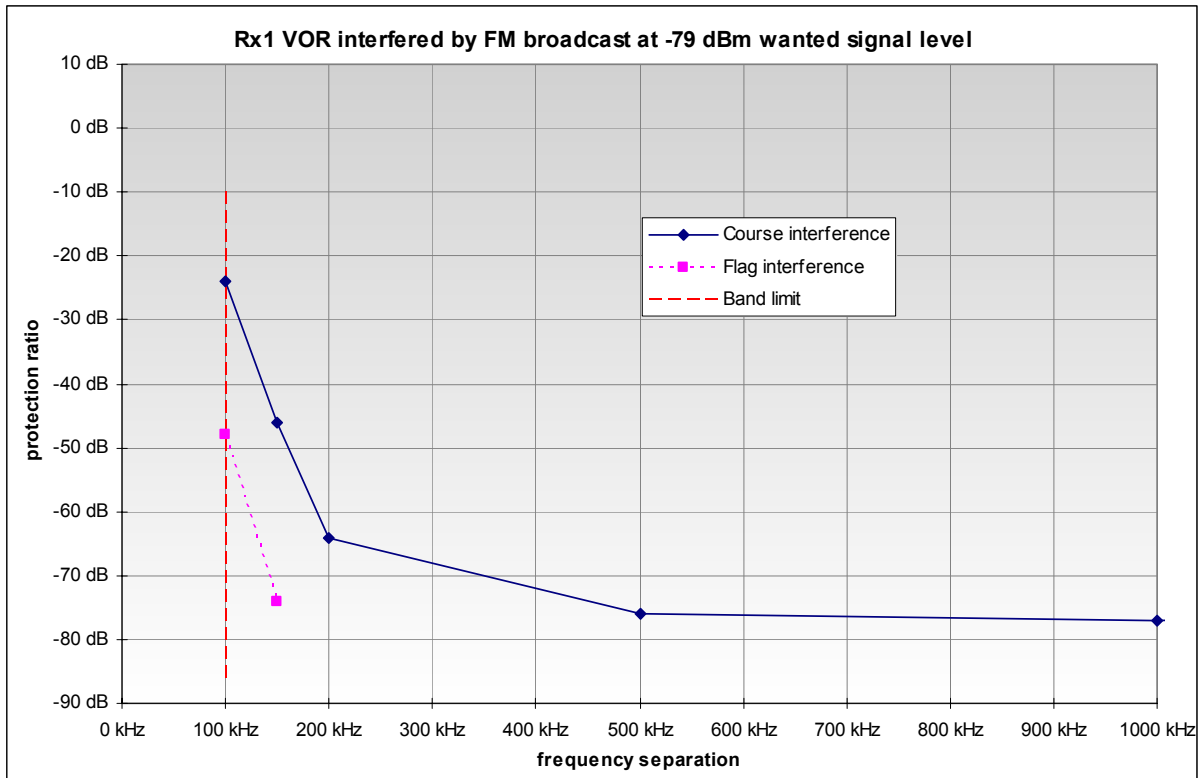
Wanted: **VOR**

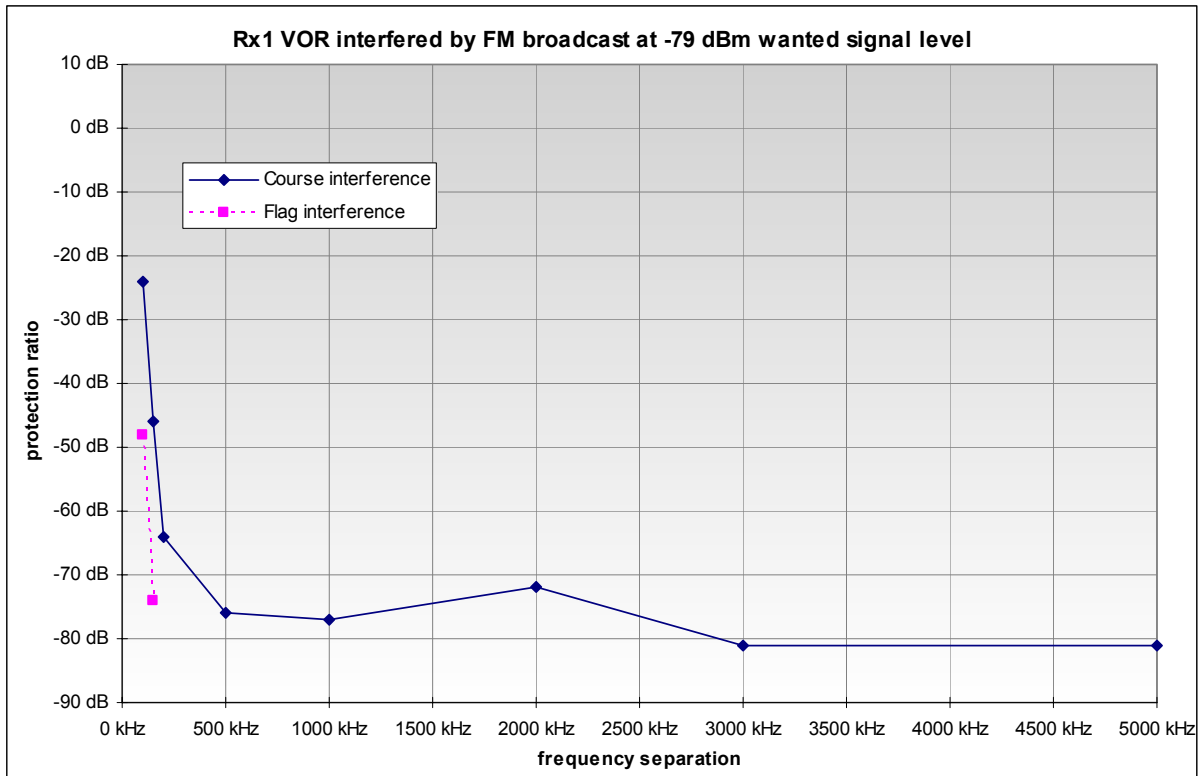
Frequency: 108,0 MHz

Level: **-79 dBm**

Criteria: **FM Signal degrades course accuracy by more than 0.3° ("Course interference")  
FM Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		FM atten.	FM level	prot. ratio	FM-atten.	FM level	prot. ratio
107,900 MHz	100 kHz	63 dB	-55 dBm	-24 dB	39 dB	-31 dBm	-48 dB
107,850 MHz	150 kHz	41 dB	-33 dBm	-46 dB	13 dB	-5 dBm	-74 dB
107,800 MHz	200 kHz	23 dB	-15 dBm	-64 dB	< 0 dB	> 8 dBm	< -87 dB
107,500 MHz	500 kHz	11 dB	-3 dBm	-76 dB		8 dBm	-87 dB
107,000 MHz	1000 kHz	10 dB	-2 dBm	-77 dB		8 dBm	-87 dB
106,000 MHz	2000 kHz	15 dB	-7 dBm	-72 dB		8 dBm	-87 dB
105,000 MHz	3000 kHz	6 dB	2 dBm	-81 dB		8 dBm	-87 dB
103,000 MHz	5000 kHz	6 dB	2 dBm	-81 dB		8 dBm	-87 dB
98,000 MHz	10000 kHz	< 0 dB	> 8 dBm	< -87 dB		8 dBm	-87 dB





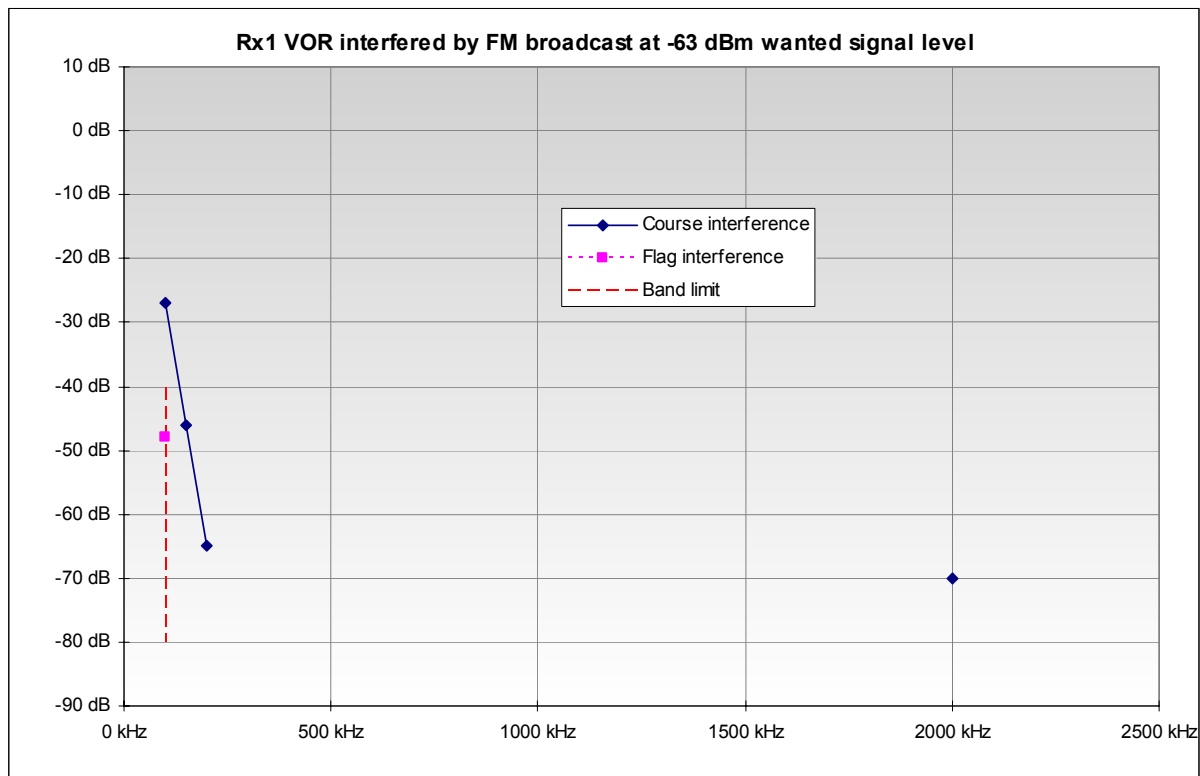
Rx: **1**  
 Undist. Course dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

Unwanted: **FM modulated according to ITU-R BS.641 (transmitter = Fxi-250)**  
 Frequency: (variable) (center)  
 Full level: 8 dBm at 0 dB atten.

Wanted: **VOR**  
 Frequency: 108,0 MHz  
 Level: -63 dBm

Criteria: **FM Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**FM Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		FM atten.	FM level	prot. ratio	FM-atten.	FM level	prot. ratio
107,900 MHz	100 kHz	44 dB	-36 dBm	-27 dB	23 dB	-15 dBm	-48 dB
107,850 MHz	150 kHz	25 dB	-17 dBm	-46 dB	< 0 dB	> 8 dBm	< -71 dB
107,800 MHz	200 kHz	6 dB	2 dBm	-65 dB			
107,500 MHz	500 kHz	< 0 dB	> 8 dBm	< -71 dB			
107,000 MHz	1000 kHz	< 0 dB	> 8 dBm	< -71 dB			
106,000 MHz	2000 kHz	1 dB	7 dBm	-70 dB			
105,000 MHz	3000 kHz	< 0 dB	> 8 dBm	< -71 dB			



Rx: **1 Collins ILS/VOR/MB-900**  
 Undist. Course on analogur voltmeter, equals to 0.3° course deviation according to Rec  
 dev.: +/-2,25 mV IS.1140 5.4.1.1  
 Sensitivity  
 Course: -98 dBm  
 Sensitivity Flag: -107 dBm

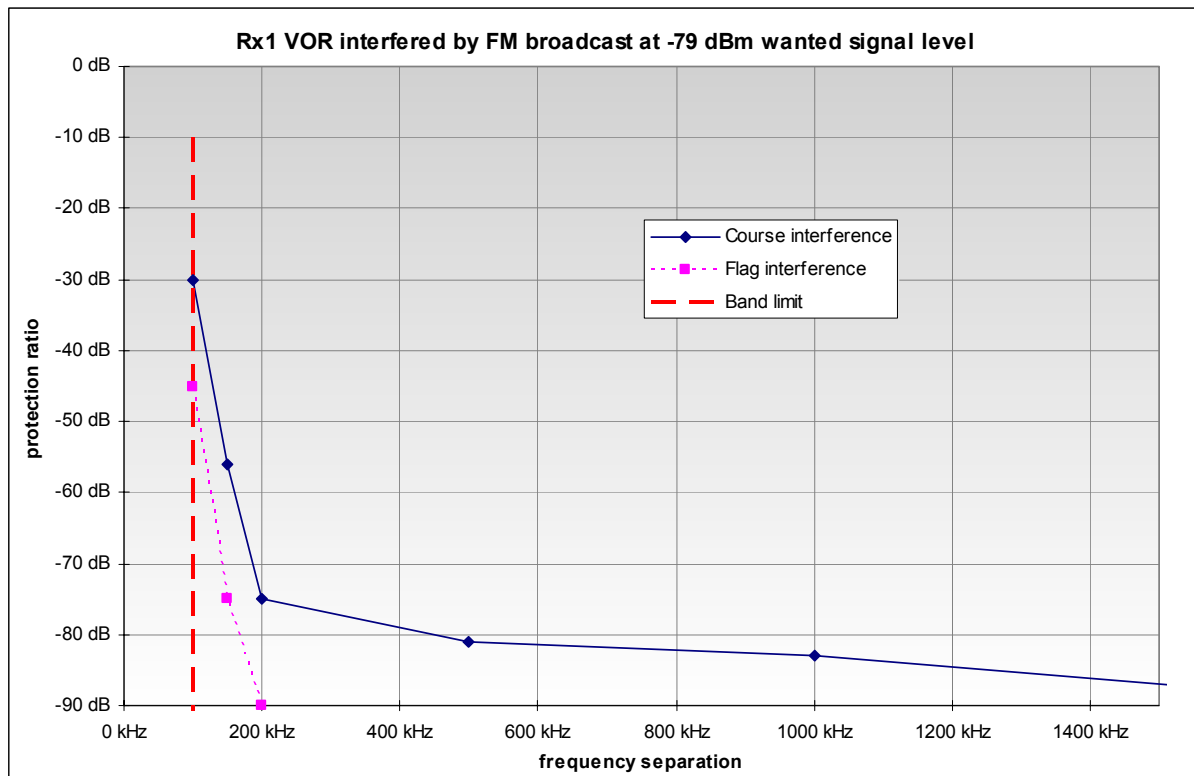
**FM stereo, noise modulated L=0.5R according to ITU-R IS.1009 (transmitter = ITELCO)**

Unwanted:  
 Frequency: (variable) (center)  
 Full level: 12 dBm at 0 dB atten.

Wanted: **VOR**  
 Frequency: 108,0 MHz  
 Level: -79 dBm

Criteria: **FM Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**FM Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		FM atten.	FM level	prot. ratio	FM-atten.	FM level	prot. ratio
107,900 MHz	100 kHz	61 dB	-49 dBm	-30 dB	46 dB	-34 dBm	-45 dB
107,850 MHz	150 kHz	35 dB	-23 dBm	-56 dB	16 dB	-4 dBm	-75 dB
107,800 MHz	200 kHz	16 dB	-4 dBm	-75 dB	1 dB	11 dBm	-90 dB
107,500 MHz	500 kHz	10 dB	2 dBm	-81 dB		> 12 dBm	< -91 dB
107,000 MHz	1000 kHz	8 dB	4 dBm	-83 dB			
106,000 MHz	2000 kHz	0 dB	12 dBm	-91 dB			
105,000 MHz	3000 kHz		> 12 dBm	< -91 dB			





### 1.4 FM broadcast -> Aeronautical Radionavigation (ILS) reception

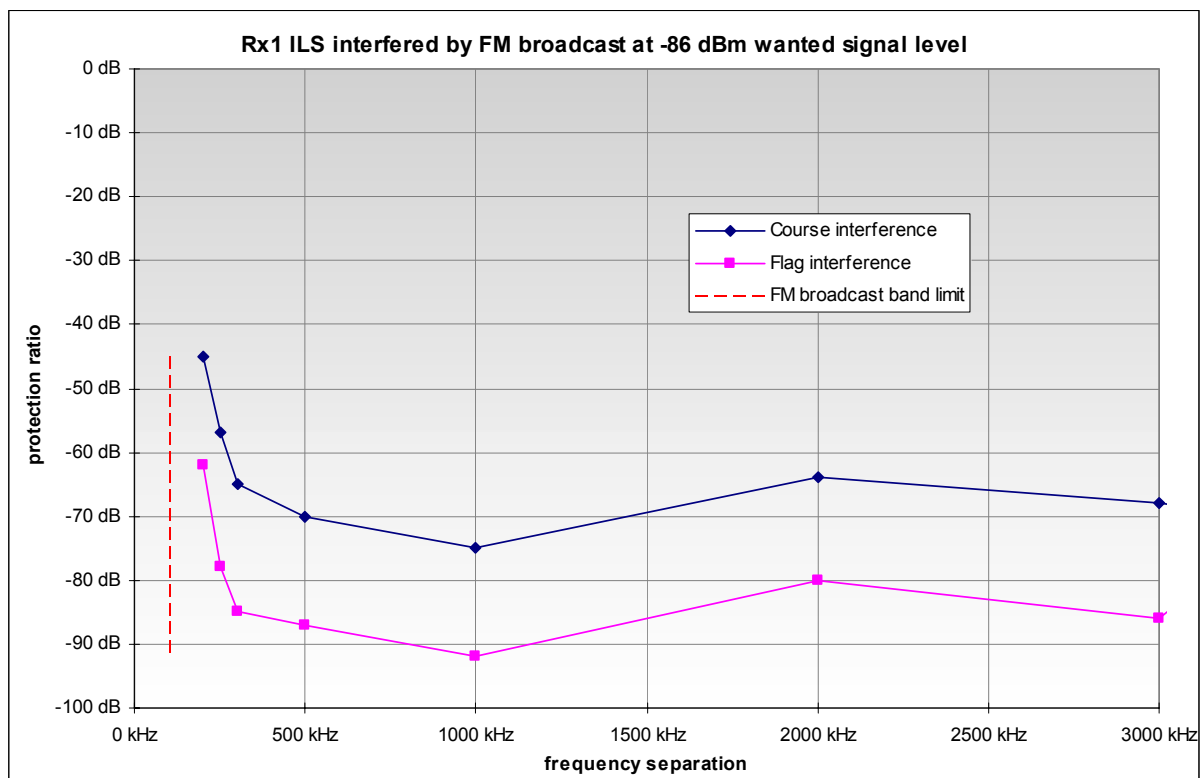
Rx: **1**  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

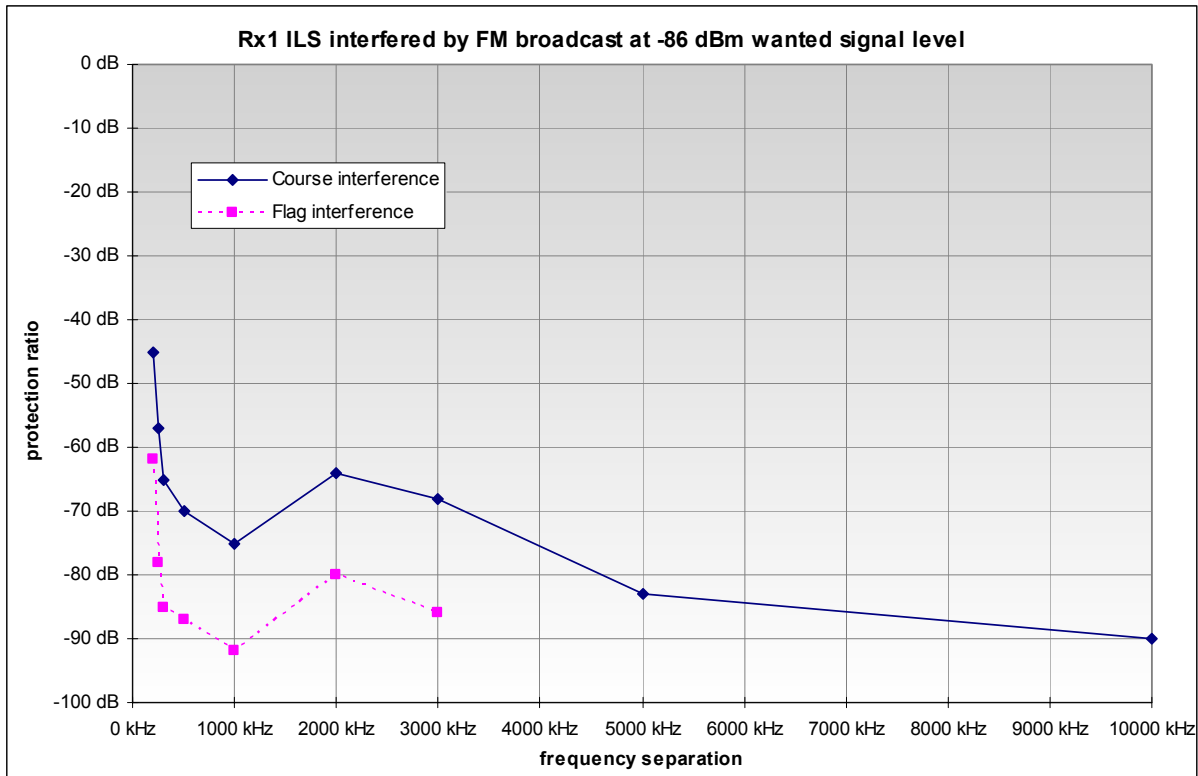
Unwanted: **FM, modulated according to ITU-R BS.641 (transmitter = Fxi-250)**  
 Frequency: (variable) (center)  
 Full level: 8 dBm at 0 dB atten.

Wanted: **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: **-86 dBm**

Criteria: **FM Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**FM Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM- atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	49 dB	-41 dBm	-45 dB	32 dB	-24 dBm	-62 dB
107,850 MHz	250 kHz	37 dB	-29 dBm	-57 dB	16 dB	-8 dBm	-78 dB
107,800 MHz	300 kHz	29 dB	-21 dBm	-65 dB	9 dB	-1 dBm	-85 dB
107,600 MHz	500 kHz	24 dB	-16 dBm	-70 dB	7 dB	1 dBm	-87 dB
107,100 MHz	1000 kHz	19 dB	-11 dBm	-75 dB	2 dB	6 dBm	-92 dB
106,100 MHz	2000 kHz	30 dB	-22 dBm	-64 dB	14 dB	-6 dBm	-80 dB
105,100 MHz	3000 kHz	26 dB	-18 dBm	-68 dB	8 dB	0 dBm	-86 dB
103,100 MHz	5000 kHz	11 dB	-3 dBm	-83 dB	< 0 dB	> 8 dBm	< -94 dB
98,100 MHz	10000 kHz	4 dB	4 dBm	-90 dB			





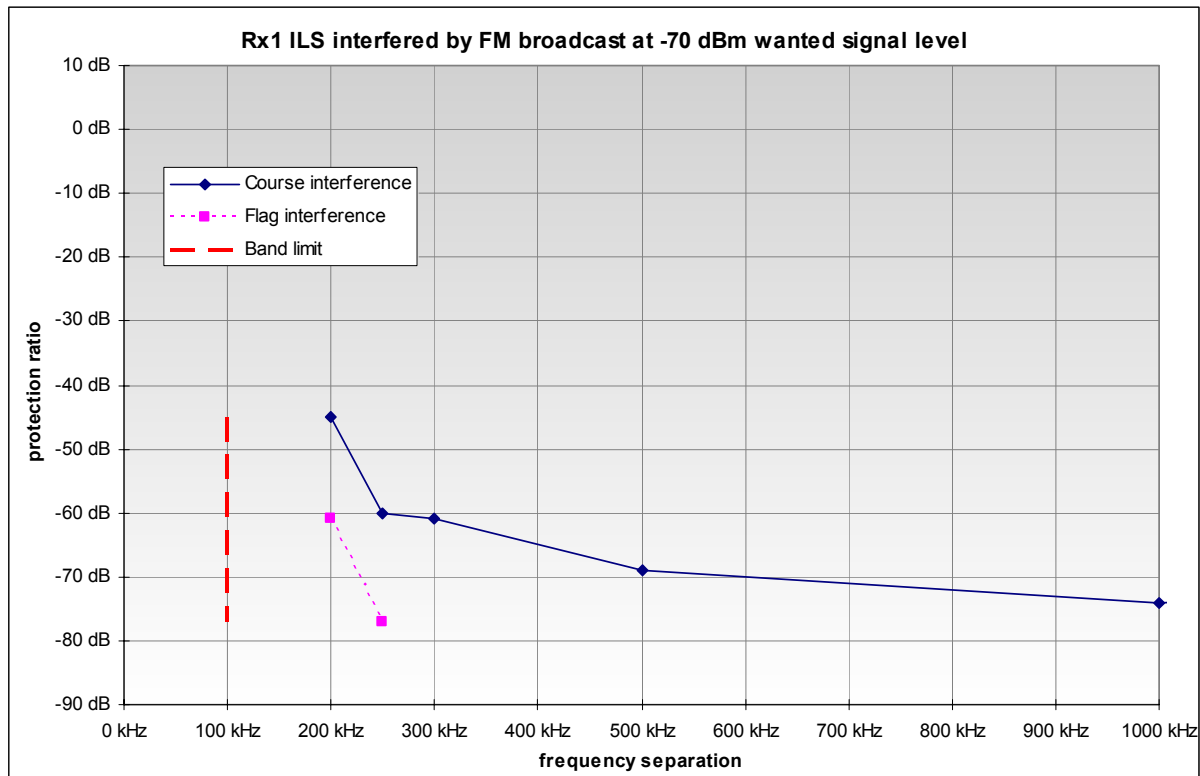
Rx: **1**  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

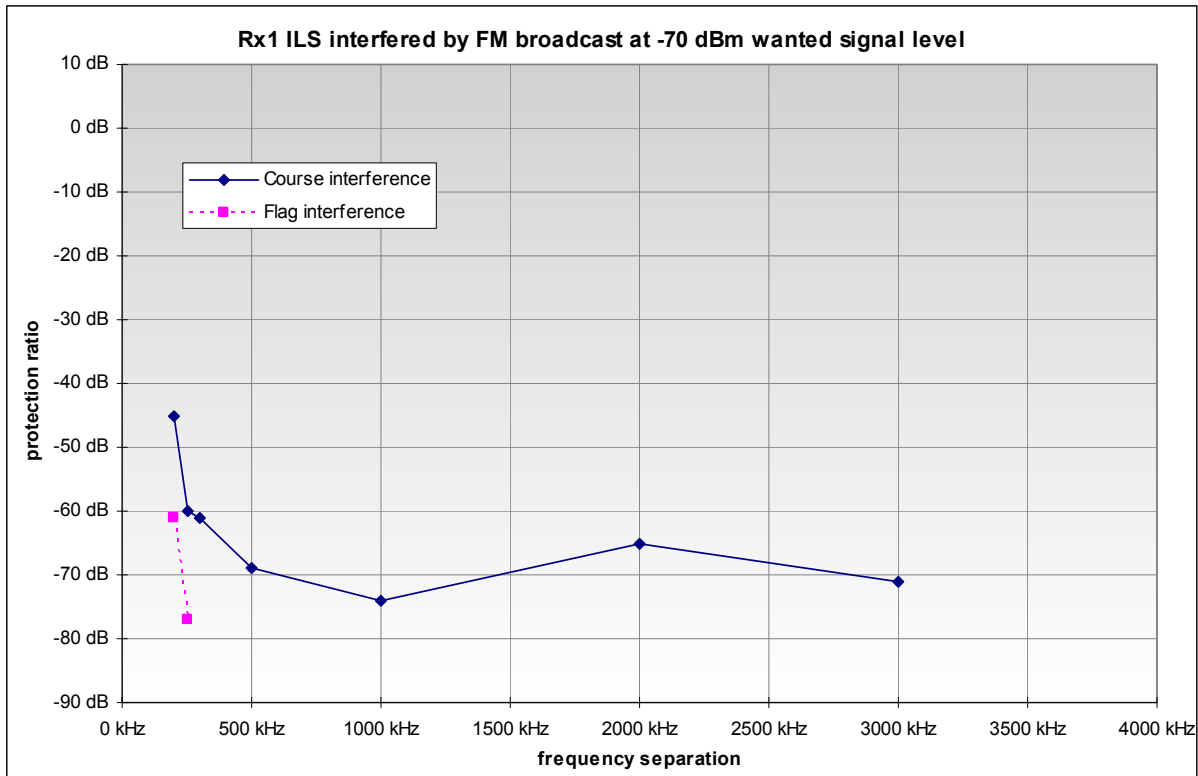
Unwanted: **FM, modulated according to ITU-R BS.641 (transmitter = Fxi-250)**  
 Frequency: (variable) (center)  
 Full level: 8 dBm at 0 dB atten.

Wanted: **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: **-70 dBm**

Criteria: **FM Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**FM Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	33 dB	-25 dBm	-45 dB	17 dB	-9 dBm	-61 dB
107,850 MHz	250 kHz	18 dB	-10 dBm	-60 dB	1 dB	7 dBm	-77 dB
107,800 MHz	300 kHz	17 dB	-9 dBm	-61 dB	< 0 dB	> 8 dBm	< -78 dB
107,600 MHz	500 kHz	9 dB	-1 dBm	-69 dB			
107,100 MHz	1000 kHz	4 dB	4 dBm	-74 dB			
106,100 MHz	2000 kHz	13 dB	-5 dBm	-65 dB			
105,100 MHz	3000 kHz	7 dB	1 dBm	-71 dB			
103,100 MHz	5000 kHz	< 0 dB	> 8 dBm	< -78 dB			





Rx: **1 Collins ILS/VOR/MB-900**  
 Undist. Course dev.: +/-2,25 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

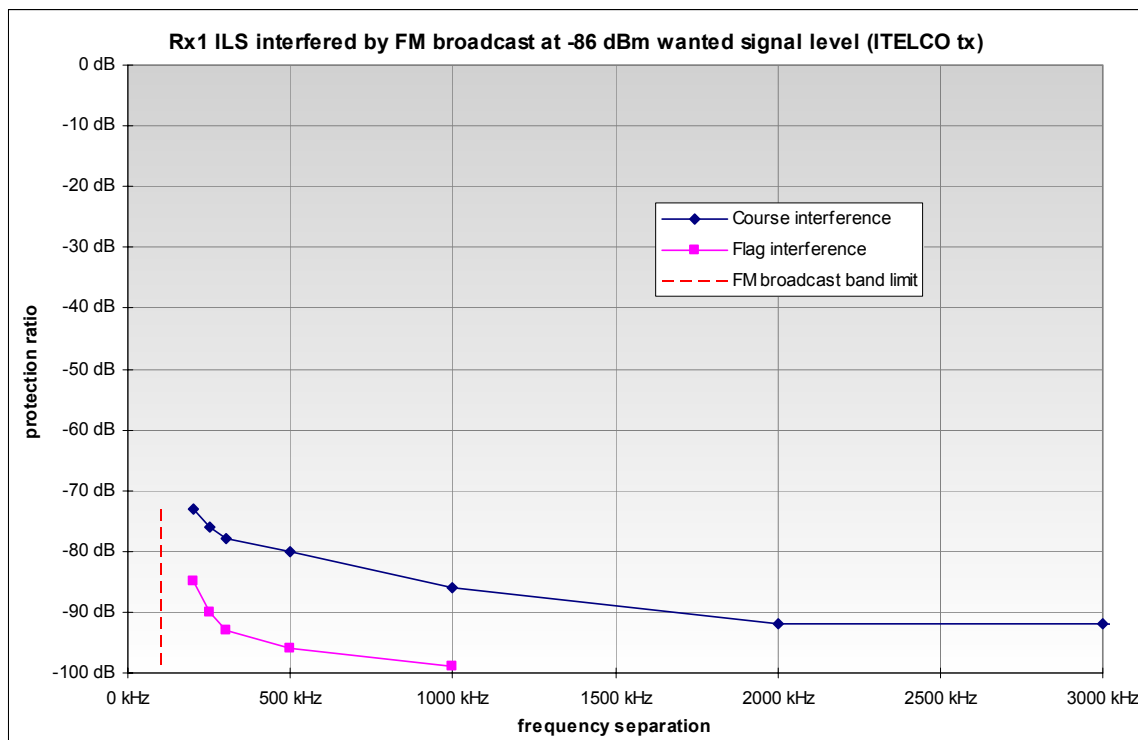
**FM stereo, noise modulated L=0.5R according to ITU-R IS.1009 (transmitter = ITELCO)**

Unwanted:  
 Frequency: (variable) (center)  
 Full level: 12 dBm at 0 dB atten.

Wanted: **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: -86 dBm

Criteria: **FM Signal degrades course accuracy by more than 0.3° ("Course interference")  
 FM Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	25 dB	-13 dBm	-73 dB	13 dB	-1 dBm	-85 dB
107,850 MHz	250 kHz	22 dB	-10 dBm	-76 dB	8 dB	4 dBm	-90 dB
107,800 MHz	300 kHz	20 dB	-8 dBm	-78 dB	5 dB	7 dBm	-93 dB
107,600 MHz	500 kHz	18 dB	-6 dBm	-80 dB	2 dB	10 dBm	-96 dB
107,100 MHz	1000 kHz	12 dB	0 dBm	-86 dB	-1 dB	13 dBm	-99 dB
106,100 MHz	2000 kHz	6 dB	6 dBm	-92 dB		> 8 dBm	< -94 dB
105,100 MHz	3000 kHz	6 dB	6 dBm	-92 dB			
103,100 MHz	5000 kHz	2 dB	10 dBm	-96 dB			



## 2 DRM120 as the interferer

### 2.1 DRM120 -> FM broadcast reception

Rx: (all)

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: -18 dBm at 0 dB atten.

Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level (Rx1): -51 dBm

Level (Rx2): -49 dBm

Level (Rx3): -36 dBm

Level (Rx4): -54 dBm

Level (Rx7): -47 dBm

Criteria: **DRM+-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	Protection ratios					
		Rx1	Rx2	Rx3 (+11dB )	Rx4	Rx7	ITU-R BS.412
87,000 MHz	-600 kHz	-7 dB	-27 dB	7 dB	-20 dB	2 dB	
87,050 MHz	-550 kHz	-7 dB	-26 dB	8 dB	-19 dB	4 dB	
87,100 MHz	-500 kHz	-6 dB	-26 dB	8 dB	-19 dB	4 dB	
87,150 MHz	-450 kHz	-5 dB	-25 dB	9 dB	-18 dB	5 dB	
87,200 MHz	-400 kHz	-5 dB	-25 dB	9 dB	-17 dB	5 dB	-20 dB
87,225 MHz	-375 kHz	-4 dB	-25 dB	9 dB	-17 dB	5 dB	-18 dB
87,250 MHz	-350 kHz	-4 dB	-26 dB	9 dB	-17 dB	5 dB	-15 dB
87,275 MHz	-325 kHz	-4 dB	-20 dB	9 dB	-17 dB	6 dB	-12 dB
87,300 MHz	-300 kHz	-3 dB	-18 dB	9 dB	-17 dB	6 dB	-7 dB
87,325 MHz	-275 kHz	-3 dB	-8 dB	9 dB	-17 dB	6 dB	-2 dB
87,350 MHz	-250 kHz	-3 dB	-6 dB	10 dB	-17 dB	6 dB	2 dB
87,375 MHz	-225 kHz	-2 dB	-5 dB	10 dB	-14 dB	6 dB	5 dB
87,400 MHz	-200 kHz	-2 dB	-4 dB	10 dB	-7 dB	6 dB	7 dB
87,425 MHz	-175 kHz	-1 dB	-4 dB	10 dB	-1 dB	7 dB	11 dB
87,450 MHz	-150 kHz	5 dB	-5 dB	12 dB	7 dB	7 dB	18 dB
87,475 MHz	-125 kHz	10 dB	-5 dB	14 dB	10 dB	15 dB	25 dB
87,500 MHz	-100 kHz	30 dB	27 dB	32 dB	29 dB	35 dB	33 dB
87,525 MHz	-75 kHz	47 dB	45 dB	48 dB	46 dB	52 dB	45 dB
87,550 MHz	-50 kHz	47 dB	45 dB	49 dB	46 dB	52 dB	51 dB
87,575 MHz	-25 kHz	47 dB	45 dB	49 dB	46 dB	52 dB	51 dB
87,600 MHz	0 kHz	51 dB	48 dB	52 dB	49 dB	53 dB	45 dB
87,625 MHz	25 kHz	50 dB	45 dB	49 dB	46 dB	52 dB	51 dB
87,650 MHz	50 kHz	49 dB	45 dB	49 dB	46 dB	52 dB	51 dB
87,675 MHz	75 kHz	48 dB	45 dB	49 dB	46 dB	52 dB	45 dB
87,700 MHz	100 kHz	30 dB	28 dB	30 dB	29 dB	35 dB	33 dB
87,725 MHz	125 kHz	12 dB	-14 dB	9 dB	8 dB	8 dB	25 dB
87,750 MHz	150 kHz	9 dB	-5 dB	8 dB	4 dB	3 dB	18 dB
87,775 MHz	175 kHz	-1 dB	-6 dB	8 dB	-6 dB	2 dB	11 dB
87,800 MHz	200 kHz	-6 dB	-7 dB	8 dB	-12 dB	2 dB	7 dB
87,825 MHz	225 kHz	-6 dB	-8 dB	8 dB	-19 dB	2 dB	5 dB
87,850 MHz	250 kHz	-7 dB	-8 dB	7 dB	-23 dB	2 dB	2 dB

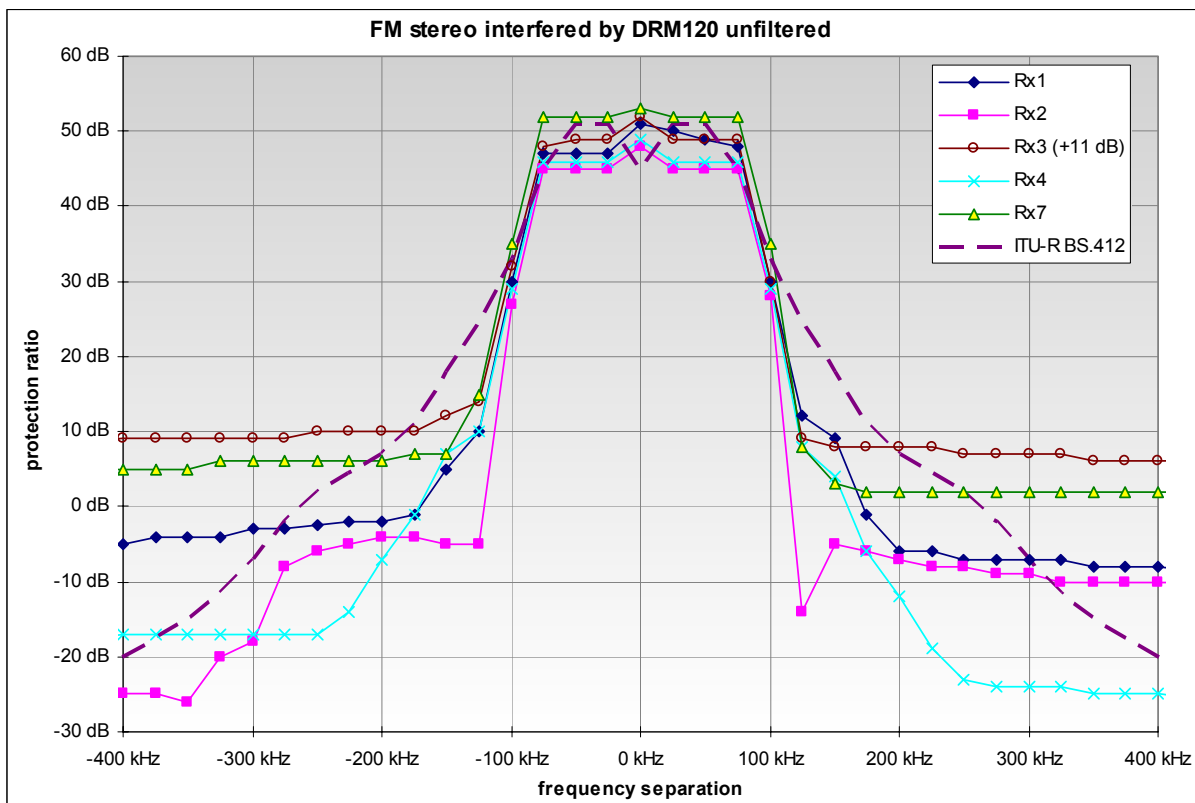
87,875 MHz	275 kHz	-7 dB	-9 dB	7 dB	-24 dB	2 dB	-2 dB
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unwanted frequency	freq.-differ.	Protection ratios					
		Rx1	Rx2	Rx3 (+11dB )	Rx4	Rx7	ITU-R BS.412
87,900 MHz	300 kHz	-7 dB	-9 dB	7 dB	-24 dB	2 dB	-7 dB
87,925 MHz	325 kHz	-7 dB	-10 dB	7 dB	-24 dB	2 dB	-12 dB
87,950 MHz	350 kHz	-8 dB	-10 dB	6 dB	-25 dB	2 dB	-15 dB
87,975 MHz	375 kHz	-8 dB	-10 dB	6 dB	-25 dB	2 dB	-18 dB
88,000 MHz	400 kHz	-8 dB	-10 dB	6 dB	-25 dB	2 dB	-20 dB
88,050 MHz	450 kHz	-9 dB	-10 dB	6 dB	-26 dB	2 dB	
88,100 MHz	500 kHz	-10 dB	-11 dB	5 dB	-27 dB	2 dB	
88,150 MHz	550 kHz	-10 dB	-11 dB	5 dB	-27 dB	1 dB	
88,200 MHz	600 kHz	-11 dB	-11 dB	4 dB	-27 dB	1 dB	

Remarks:

Rx 3 was operated with higher signal level to reach the undistorted 56 dB S/N. This causes non-linearity at higher frequency offsets.

This table contains the summary for the S/N interference measurements at minimum wanted signal level.



Following are the results of additional measurements with higher signal levels and the DRM120 filtered signal as the interferer.

Rx: 1 (home stereo rack)

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: -24 dBm at 0 dB atten.

Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

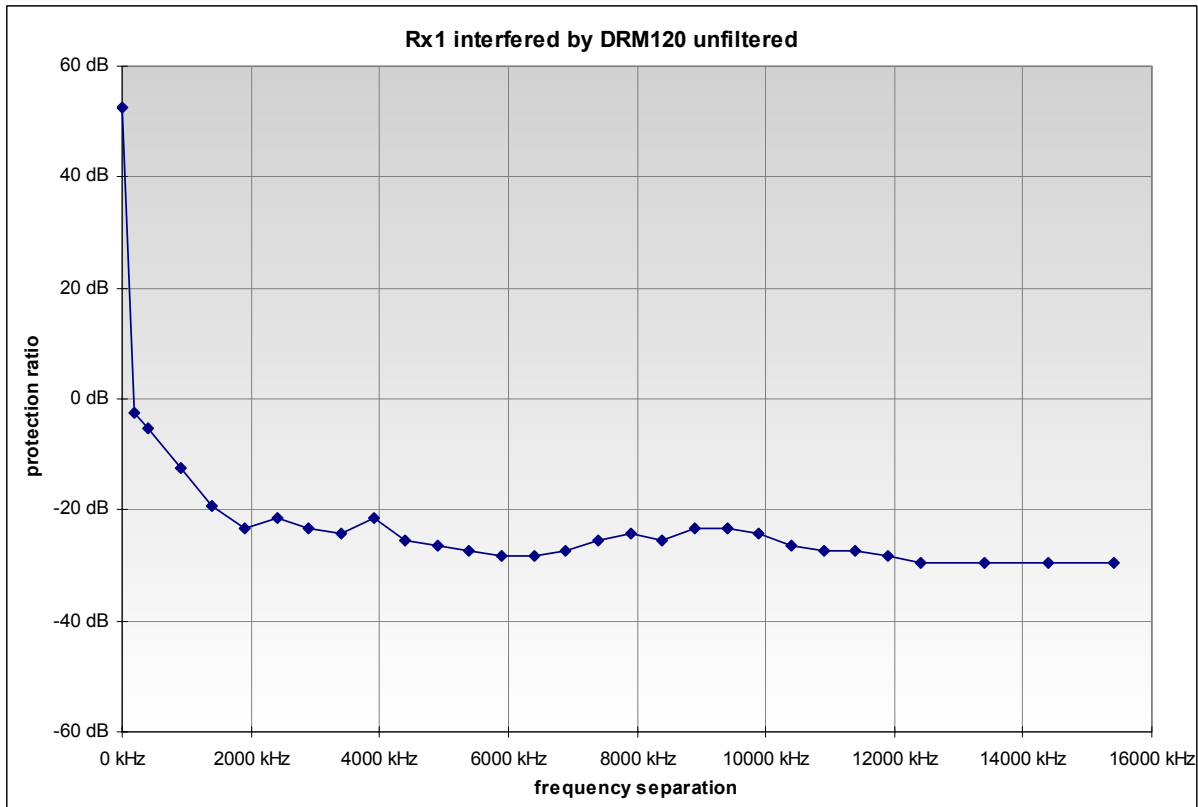
Frequency: 87,600 MHz

Level: -53 dBm

Criteria: **DRM120-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM atten.	DRM Level	prot. ratio
87,6 MHz	0 kHz	82 dB	-106 dBm	53 dB
87,8 MHz	200 kHz	27 dB	-51 dBm	-2 dB
88,0 MHz	400 kHz	24 dB	-48 dBm	-5 dB
88,5 MHz	900 kHz	17 dB	-41 dBm	-12 dB
89,0 MHz	1400 kHz	10 dB	-34 dBm	-19 dB
89,5 MHz	1900 kHz	6 dB	-30 dBm	-23 dB
90,0 MHz	2400 kHz	8 dB	-32 dBm	-21 dB
90,5 MHz	2900 kHz	6 dB	-30 dBm	-23 dB
91,0 MHz	3400 kHz	5 dB	-29 dBm	-24 dB
91,5 MHz	3900 kHz	8 dB	-32 dBm	-21 dB
92,0 MHz	4400 kHz	4 dB	-28 dBm	-25 dB
92,5 MHz	4900 kHz	3 dB	-27 dBm	-26 dB
93,0 MHz	5400 kHz	2 dB	-26 dBm	-27 dB
93,5 MHz	5900 kHz	1 dB	-25 dBm	-28 dB
94,0 MHz	6400 kHz	1 dB	-25 dBm	-28 dB
94,5 MHz	6900 kHz	2 dB	-26 dBm	-27 dB
95,0 MHz	7400 kHz	4 dB	-28 dBm	-25 dB
95,5 MHz	7900 kHz	5 dB	-29 dBm	-24 dB
96,0 MHz	8400 kHz	4 dB	-28 dBm	-25 dB
96,5 MHz	8900 kHz	6 dB	-30 dBm	-23 dB
97,0 MHz	9400 kHz	6 dB	-30 dBm	-23 dB
97,5 MHz	9900 kHz	5 dB	-29 dBm	-24 dB
98,0 MHz	10400 kHz	3 dB	-27 dBm	-26 dB
98,5 MHz	10900 kHz	2 dB	-26 dBm	-27 dB
99,0 MHz	11400 kHz	2 dB	-26 dBm	-27 dB
99,5 MHz	11900 kHz	1 dB	-25 dBm	-28 dB
100,0 MHz	12400 kHz	0 dB	-24 dBm	-29 dB
101,0 MHz	13400 kHz	0 dB	-24 dBm	-29 dB
102,0 MHz	14400 kHz	0 dB	-24 dBm	-29 dB
103,0 MHz	15400 kHz	0 dB	-24 dBm	-29 dB





Rx: **1 (home stereo rack)**

Unwanted: **DRM120 filtered**

Frequency: variable

Full level: -25 dBm at 0 dB atten.

2 dBm at 0 dB atten.

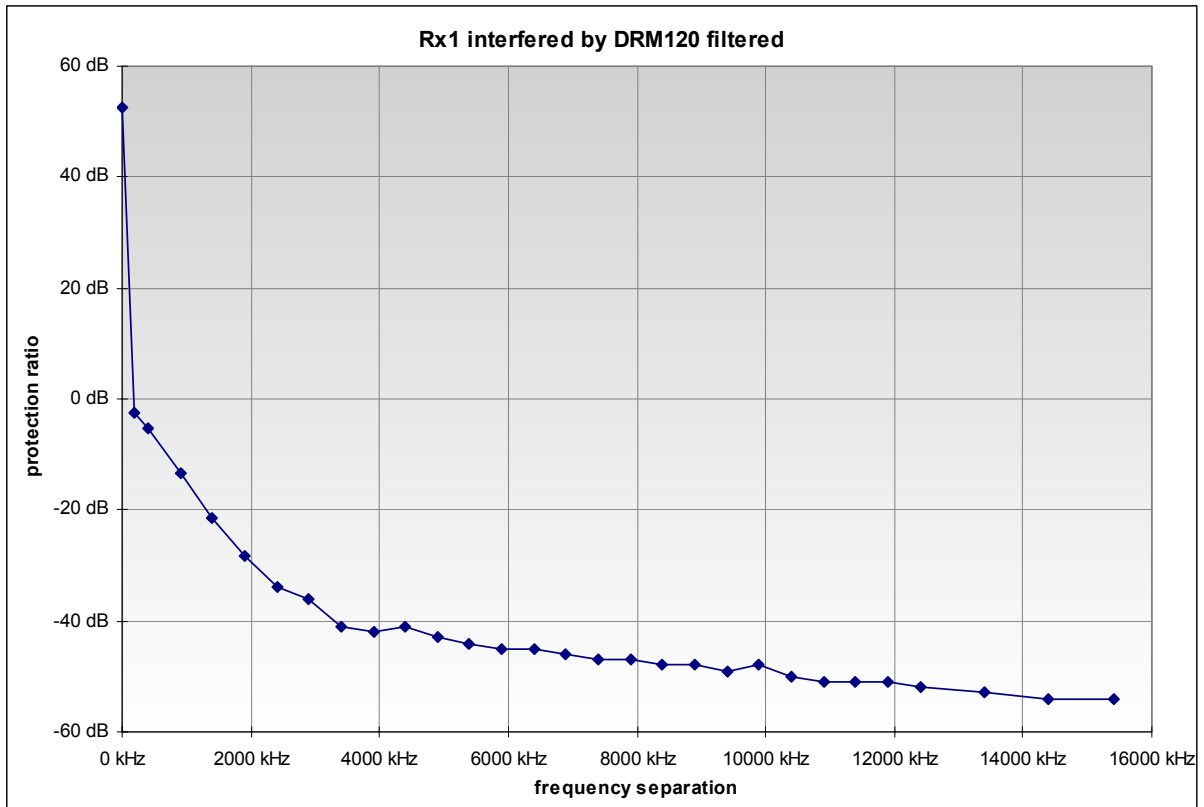
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: -53 dBm

Criteria: **DRM120-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM atten.	DRM Level	prot. ratio
87,6 MHz	0 kHz	81 dB	-106 dBm	53 dB
87,8 MHz	200 kHz	26 dB	-51 dBm	-2 dB
88,0 MHz	400 kHz	23 dB	-48 dBm	-5 dB
88,5 MHz	900 kHz	15 dB	-40 dBm	-13 dB
89,0 MHz	1400 kHz	7 dB	-32 dBm	-21 dB
89,5 MHz	1900 kHz	0 dB	-25 dBm	-28 dB
90,0 MHz	2400 kHz	21 dB	-19 dBm	-34 dB
90,5 MHz	2900 kHz	19 dB	-17 dBm	-36 dB
91,0 MHz	3400 kHz	14 dB	-12 dBm	-41 dB
91,5 MHz	3900 kHz	13 dB	-11 dBm	-42 dB
92,0 MHz	4400 kHz	14 dB	-12 dBm	-41 dB
92,5 MHz	4900 kHz	12 dB	-10 dBm	-43 dB
93,0 MHz	5400 kHz	11 dB	-9 dBm	-44 dB
93,5 MHz	5900 kHz	10 dB	-8 dBm	-45 dB
94,0 MHz	6400 kHz	10 dB	-8 dBm	-45 dB
94,5 MHz	6900 kHz	9 dB	-7 dBm	-46 dB
95,0 MHz	7400 kHz	8 dB	-6 dBm	-47 dB
95,5 MHz	7900 kHz	8 dB	-6 dBm	-47 dB
96,0 MHz	8400 kHz	7 dB	-5 dBm	-48 dB
96,5 MHz	8900 kHz	7 dB	-5 dBm	-48 dB
97,0 MHz	9400 kHz	6 dB	-4 dBm	-49 dB
97,5 MHz	9900 kHz	7 dB	-5 dBm	-48 dB
98,0 MHz	10400 kHz	5 dB	-3 dBm	-50 dB
98,5 MHz	10900 kHz	4 dB	-2 dBm	-51 dB
99,0 MHz	11400 kHz	4 dB	-2 dBm	-51 dB
99,5 MHz	11900 kHz	4 dB	-2 dBm	-51 dB
100,0 MHz	12400 kHz	3 dB	-1 dBm	-52 dB
101,0 MHz	13400 kHz	2 dB	0 dBm	-53 dB
102,0 MHz	14400 kHz	1 dB	1 dBm	-54 dB
103,0 MHz	15400 kHz	1 dB	1 dBm	-54 dB



Rx: **2 (car radio)**

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: -18 dBm at 0 dB atten.

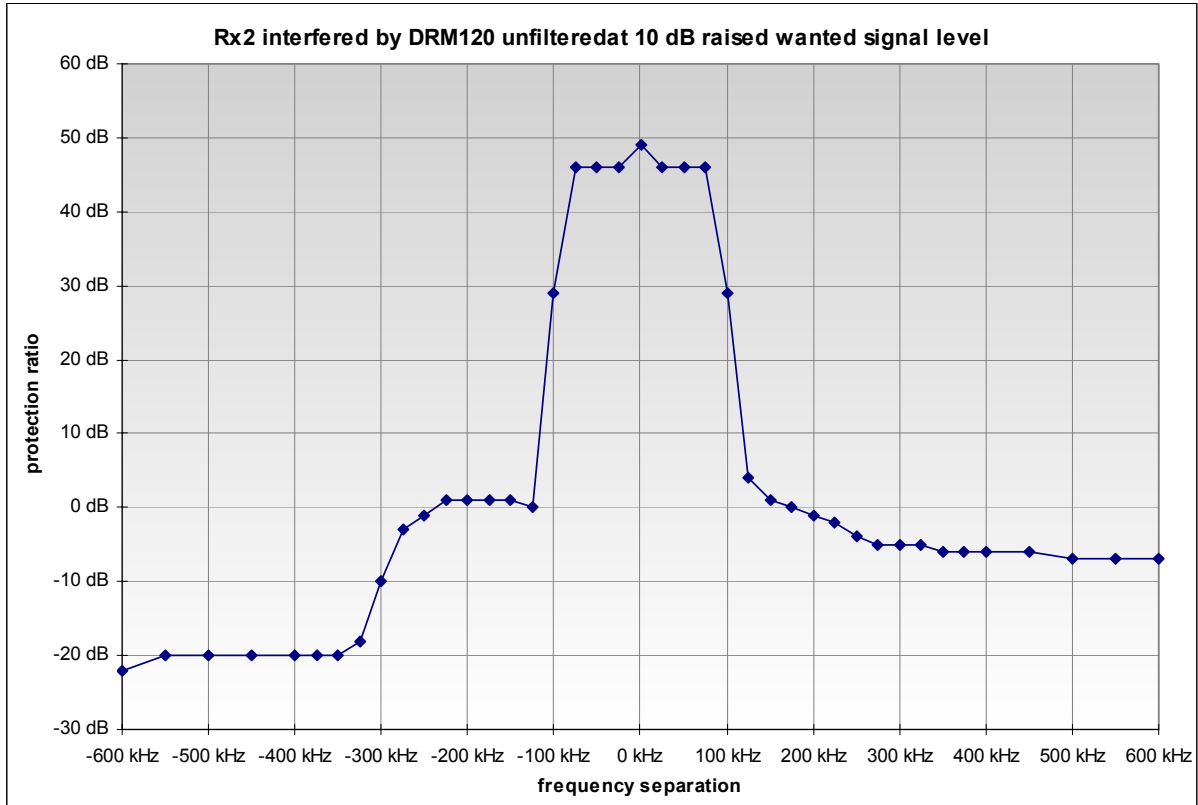
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-38 dBm**

Criteria: **DRM120-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM atten.	DRM level	prot. ratio
87,000 MHz	-600 kHz	-2 dB	-16 dBm	-22 dB
87,050 MHz	-550 kHz	0 dB	-18 dBm	-20 dB
87,100 MHz	-500 kHz	0 dB	-18 dBm	-20 dB
87,150 MHz	-450 kHz	0 dB	-18 dBm	-20 dB
87,200 MHz	-400 kHz	0 dB	-18 dBm	-20 dB
87,225 MHz	-375 kHz	0 dB	-18 dBm	-20 dB
87,250 MHz	-350 kHz	0 dB	-18 dBm	-20 dB
87,275 MHz	-325 kHz	2 dB	-20 dBm	-18 dB
87,300 MHz	-300 kHz	10 dB	-28 dBm	-10 dB
87,325 MHz	-275 kHz	17 dB	-35 dBm	-3 dB
87,350 MHz	-250 kHz	19 dB	-37 dBm	-1 dB
87,375 MHz	-225 kHz	21 dB	-39 dBm	1 dB
87,400 MHz	-200 kHz	21 dB	-39 dBm	1 dB
87,425 MHz	-175 kHz	21 dB	-39 dBm	1 dB
87,450 MHz	-150 kHz	21 dB	-39 dBm	1 dB
87,475 MHz	-125 kHz	20 dB	-38 dBm	0 dB
87,500 MHz	-100 kHz	49 dB	-67 dBm	29 dB
87,525 MHz	-75 kHz	66 dB	-84 dBm	46 dB
87,550 MHz	-50 kHz	66 dB	-84 dBm	46 dB
87,575 MHz	-25 kHz	66 dB	-84 dBm	46 dB
87,600 MHz	0 kHz	69 dB	-87 dBm	49 dB
87,625 MHz	25 kHz	66 dB	-84 dBm	46 dB
87,650 MHz	50 kHz	66 dB	-84 dBm	46 dB
87,675 MHz	75 kHz	66 dB	-84 dBm	46 dB
87,700 MHz	100 kHz	49 dB	-67 dBm	29 dB
87,725 MHz	125 kHz	24 dB	-42 dBm	4 dB
87,750 MHz	150 kHz	21 dB	-39 dBm	1 dB
87,775 MHz	175 kHz	20 dB	-38 dBm	0 dB
87,800 MHz	200 kHz	19 dB	-37 dBm	-1 dB
87,825 MHz	225 kHz	18 dB	-36 dBm	-2 dB
87,850 MHz	250 kHz	16 dB	-34 dBm	-4 dB
87,875 MHz	275 kHz	15 dB	-33 dBm	-5 dB
87,900 MHz	300 kHz	15 dB	-33 dBm	-5 dB
87,925 MHz	325 kHz	15 dB	-33 dBm	-5 dB
87,950 MHz	350 kHz	14 dB	-32 dBm	-6 dB
87,975 MHz	375 kHz	14 dB	-32 dBm	-6 dB
88,000 MHz	400 kHz	14 dB	-32 dBm	-6 dB
88,050 MHz	450 kHz	14 dB	-32 dBm	-6 dB
88,100 MHz	500 kHz	13 dB	-31 dBm	-7 dB
88,150 MHz	550 kHz	13 dB	-31 dBm	-7 dB
88,200 MHz	600 kHz	13 dB	-31 dBm	-7 dB



Rx: **2** (car radio)

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: -18 dBm at 0 dB atten.

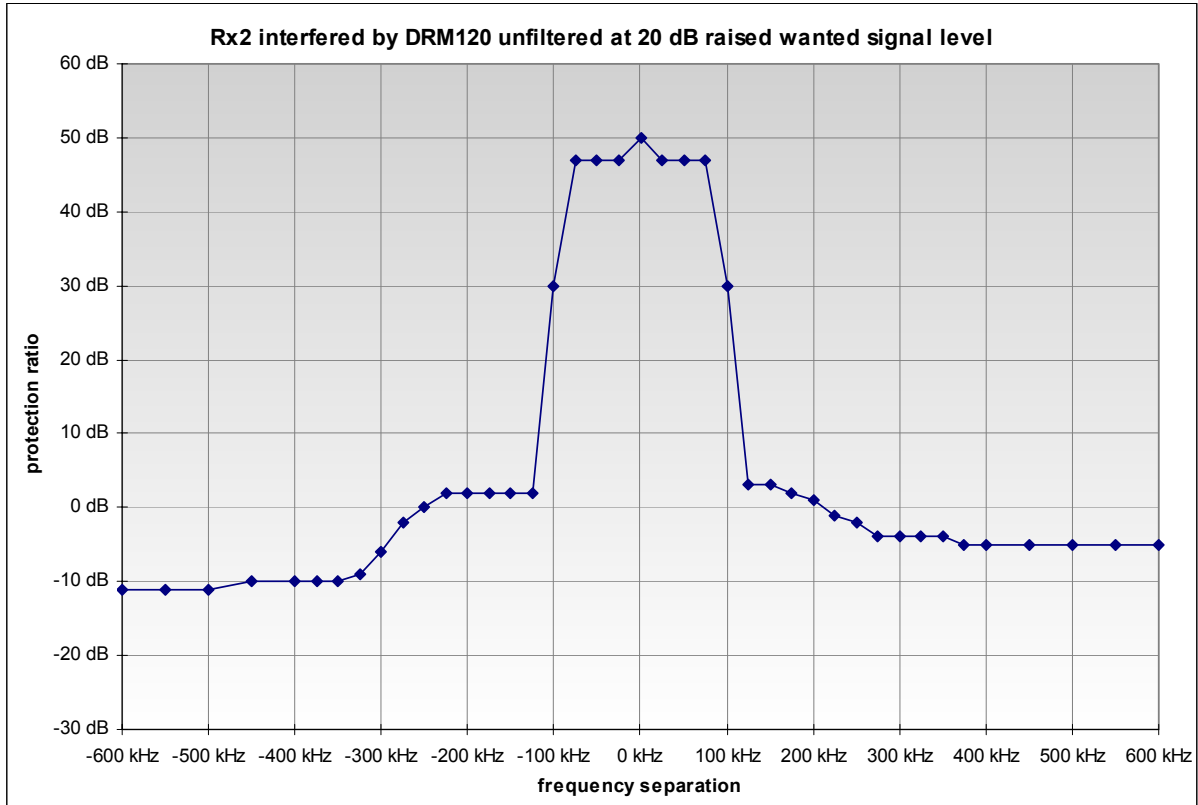
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-27 dBm**

Criteria: **DRM120-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM atten.	DRM level	prot. ratio
87,000 MHz	-600 kHz	-2 dB	-16 dBm	-11 dB
87,050 MHz	-550 kHz	-2 dB	-16 dBm	-11 dB
87,100 MHz	-500 kHz	-2 dB	-16 dBm	-11 dB
87,150 MHz	-450 kHz	-1 dB	-17 dBm	-10 dB
87,200 MHz	-400 kHz	-1 dB	-17 dBm	-10 dB
87,225 MHz	-375 kHz	-1 dB	-17 dBm	-10 dB
87,250 MHz	-350 kHz	-1 dB	-17 dBm	-10 dB
87,275 MHz	-325 kHz	0 dB	-18 dBm	-9 dB
87,300 MHz	-300 kHz	3 dB	-21 dBm	-6 dB
87,325 MHz	-275 kHz	7 dB	-25 dBm	-2 dB
87,350 MHz	-250 kHz	9 dB	-27 dBm	0 dB
87,375 MHz	-225 kHz	11 dB	-29 dBm	2 dB
87,400 MHz	-200 kHz	11 dB	-29 dBm	2 dB
87,425 MHz	-175 kHz	11 dB	-29 dBm	2 dB
87,450 MHz	-150 kHz	11 dB	-29 dBm	2 dB
87,475 MHz	-125 kHz	11 dB	-29 dBm	2 dB
87,500 MHz	-100 kHz	39 dB	-57 dBm	30 dB
87,525 MHz	-75 kHz	56 dB	-74 dBm	47 dB
87,550 MHz	-50 kHz	56 dB	-74 dBm	47 dB
87,575 MHz	-25 kHz	56 dB	-74 dBm	47 dB
87,600 MHz	0 kHz	59 dB	-77 dBm	50 dB
87,625 MHz	25 kHz	56 dB	-74 dBm	47 dB
87,650 MHz	50 kHz	56 dB	-74 dBm	47 dB
87,675 MHz	75 kHz	56 dB	-74 dBm	47 dB
87,700 MHz	100 kHz	39 dB	-57 dBm	30 dB
87,725 MHz	125 kHz	12 dB	-30 dBm	3 dB
87,750 MHz	150 kHz	12 dB	-30 dBm	3 dB
87,775 MHz	175 kHz	11 dB	-29 dBm	2 dB
87,800 MHz	200 kHz	10 dB	-28 dBm	1 dB
87,825 MHz	225 kHz	8 dB	-26 dBm	-1 dB
87,850 MHz	250 kHz	7 dB	-25 dBm	-2 dB
87,875 MHz	275 kHz	5 dB	-23 dBm	-4 dB
87,900 MHz	300 kHz	5 dB	-23 dBm	-4 dB
87,925 MHz	325 kHz	5 dB	-23 dBm	-4 dB
87,950 MHz	350 kHz	5 dB	-23 dBm	-4 dB
87,975 MHz	375 kHz	4 dB	-22 dBm	-5 dB
88,000 MHz	400 kHz	4 dB	-22 dBm	-5 dB
88,050 MHz	450 kHz	4 dB	-22 dBm	-5 dB
88,100 MHz	500 kHz	4 dB	-22 dBm	-5 dB
88,150 MHz	550 kHz	4 dB	-22 dBm	-5 dB
88,200 MHz	600 kHz	4 dB	-22 dBm	-5 dB



Rx: **4 (home hifi receiver)**

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: -18 dBm at 0 dB atten.

Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

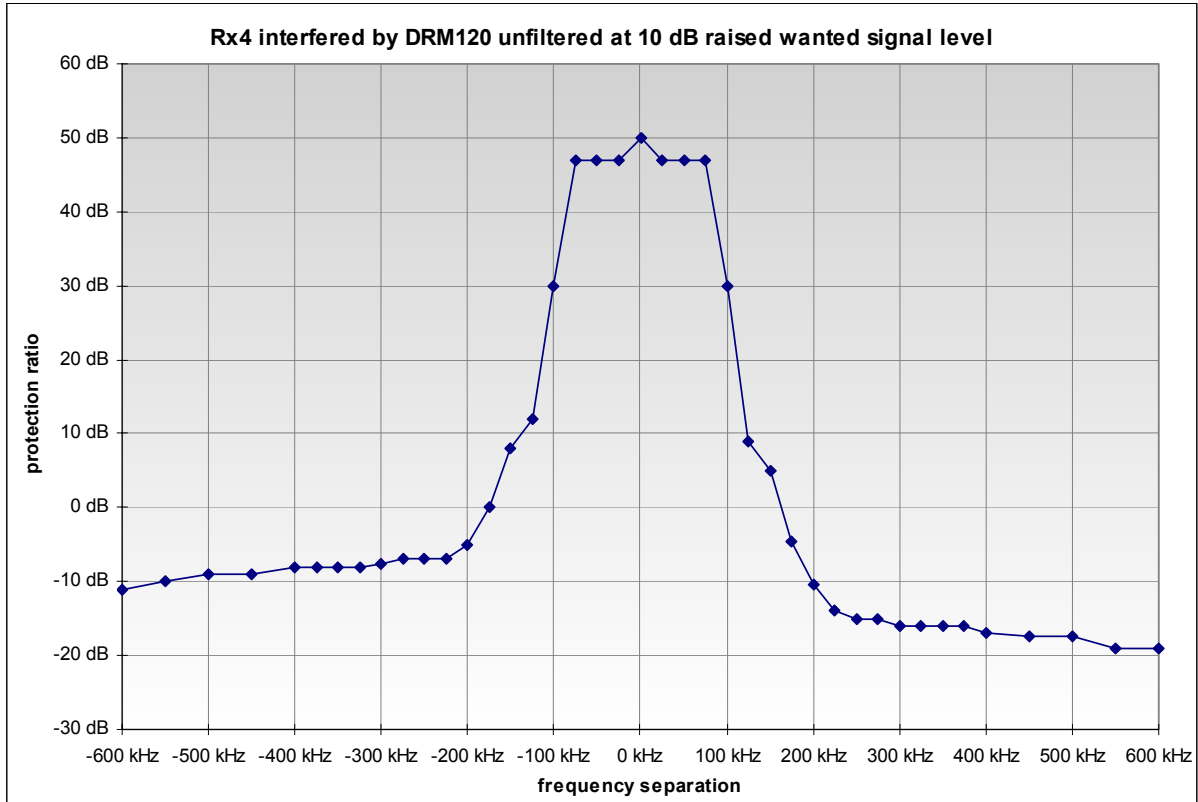
Frequency: 87,600 MHz

Level: **-44 dBm**

Criteria: **DRM120-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM atten.	DRM level	prot. ratio
87,000 MHz	-600 kHz	15 dB	-33 dBm	-11 dB
87,050 MHz	-550 kHz	16 dB	-34 dBm	-10 dB
87,100 MHz	-500 kHz	17 dB	-35 dBm	-9 dB
87,150 MHz	-450 kHz	17 dB	-35 dBm	-9 dB
87,200 MHz	-400 kHz	18 dB	-36 dBm	-8 dB
87,225 MHz	-375 kHz	18 dB	-36 dBm	-8 dB
87,250 MHz	-350 kHz	18 dB	-36 dBm	-8 dB
87,275 MHz	-325 kHz	18 dB	-36 dBm	-8 dB
87,300 MHz	-300 kHz	19 dB	-37 dBm	-8 dB
87,325 MHz	-275 kHz	19 dB	-37 dBm	-7 dB
87,350 MHz	-250 kHz	19 dB	-37 dBm	-7 dB
87,375 MHz	-225 kHz	19 dB	-37 dBm	-7 dB
87,400 MHz	-200 kHz	21 dB	-39 dBm	-5 dB
87,425 MHz	-175 kHz	26 dB	-44 dBm	0 dB
87,450 MHz	-150 kHz	34 dB	-52 dBm	8 dB
87,475 MHz	-125 kHz	38 dB	-56 dBm	12 dB
87,500 MHz	-100 kHz	56 dB	-74 dBm	30 dB
87,525 MHz	-75 kHz	73 dB	-91 dBm	47 dB
87,550 MHz	-50 kHz	73 dB	-91 dBm	47 dB
87,575 MHz	-25 kHz	73 dB	-91 dBm	47 dB
87,600 MHz	0 kHz	76 dB	-94 dBm	50 dB
87,625 MHz	25 kHz	73 dB	-91 dBm	47 dB
87,650 MHz	50 kHz	73 dB	-91 dBm	47 dB
87,675 MHz	75 kHz	73 dB	-91 dBm	47 dB
87,700 MHz	100 kHz	56 dB	-74 dBm	30 dB
87,725 MHz	125 kHz	35 dB	-53 dBm	9 dB
87,750 MHz	150 kHz	31 dB	-49 dBm	5 dB
87,775 MHz	175 kHz	22 dB	-40 dBm	-5 dB
87,800 MHz	200 kHz	16 dB	-34 dBm	-11 dB
87,825 MHz	225 kHz	12 dB	-30 dBm	-14 dB
87,850 MHz	250 kHz	11 dB	-29 dBm	-15 dB
87,875 MHz	275 kHz	11 dB	-29 dBm	-15 dB
87,900 MHz	300 kHz	10 dB	-28 dBm	-16 dB
87,925 MHz	325 kHz	10 dB	-28 dBm	-16 dB
87,950 MHz	350 kHz	10 dB	-28 dBm	-16 dB
87,975 MHz	375 kHz	10 dB	-28 dBm	-16 dB
88,000 MHz	400 kHz	9 dB	-27 dBm	-17 dB
88,050 MHz	450 kHz	9 dB	-27 dBm	-18 dB
88,100 MHz	500 kHz	9 dB	-27 dBm	-18 dB
88,150 MHz	550 kHz	7 dB	-25 dBm	-19 dB
88,200 MHz	600 kHz	7 dB	-25 dBm	-19 dB





Rx: **4** (home hifi receiver)

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: -18 dBm at 0 dB atten.

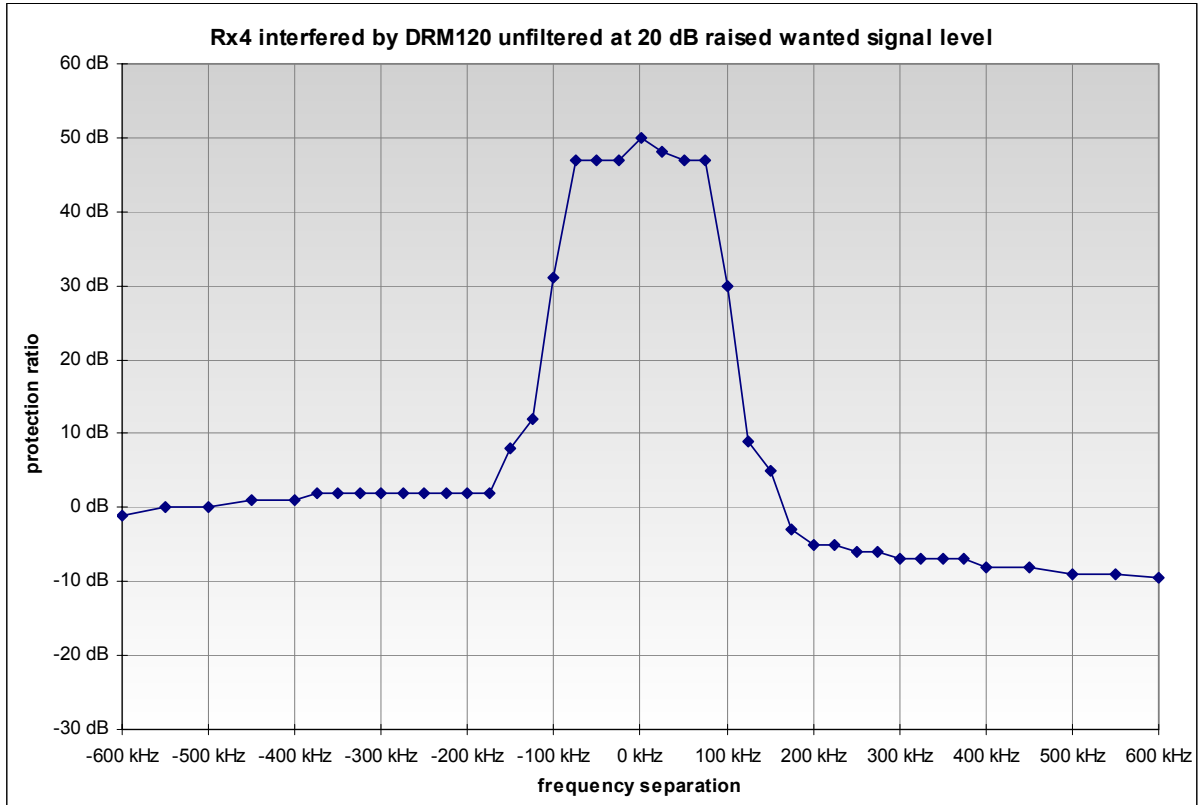
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-34 dBm**

Criteria: **DRM120-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM atten.	DRM level	prot. ratio
87,000 MHz	-600 kHz	15 dB	-33 dBm	-1 dB
87,050 MHz	-550 kHz	16 dB	-34 dBm	0 dB
87,100 MHz	-500 kHz	16 dB	-34 dBm	0 dB
87,150 MHz	-450 kHz	17 dB	-35 dBm	1 dB
87,200 MHz	-400 kHz	17 dB	-35 dBm	1 dB
87,225 MHz	-375 kHz	18 dB	-36 dBm	2 dB
87,250 MHz	-350 kHz	18 dB	-36 dBm	2 dB
87,275 MHz	-325 kHz	18 dB	-36 dBm	2 dB
87,300 MHz	-300 kHz	18 dB	-36 dBm	2 dB
87,325 MHz	-275 kHz	18 dB	-36 dBm	2 dB
87,350 MHz	-250 kHz	18 dB	-36 dBm	2 dB
87,375 MHz	-225 kHz	18 dB	-36 dBm	2 dB
87,400 MHz	-200 kHz	18 dB	-36 dBm	2 dB
87,425 MHz	-175 kHz	18 dB	-36 dBm	2 dB
87,450 MHz	-150 kHz	24 dB	-42 dBm	8 dB
87,475 MHz	-125 kHz	28 dB	-46 dBm	12 dB
87,500 MHz	-100 kHz	47 dB	-65 dBm	31 dB
87,525 MHz	-75 kHz	63 dB	-81 dBm	47 dB
87,550 MHz	-50 kHz	63 dB	-81 dBm	47 dB
87,575 MHz	-25 kHz	63 dB	-81 dBm	47 dB
87,600 MHz	0 kHz	66 dB	-84 dBm	50 dB
87,625 MHz	25 kHz	64 dB	-82 dBm	48 dB
87,650 MHz	50 kHz	63 dB	-81 dBm	47 dB
87,675 MHz	75 kHz	63 dB	-81 dBm	47 dB
87,700 MHz	100 kHz	46 dB	-64 dBm	30 dB
87,725 MHz	125 kHz	25 dB	-43 dBm	9 dB
87,750 MHz	150 kHz	21 dB	-39 dBm	5 dB
87,775 MHz	175 kHz	13 dB	-31 dBm	-3 dB
87,800 MHz	200 kHz	11 dB	-29 dBm	-5 dB
87,825 MHz	225 kHz	11 dB	-29 dBm	-5 dB
87,850 MHz	250 kHz	10 dB	-28 dBm	-6 dB
87,875 MHz	275 kHz	10 dB	-28 dBm	-6 dB
87,900 MHz	300 kHz	9 dB	-27 dBm	-7 dB
87,925 MHz	325 kHz	9 dB	-27 dBm	-7 dB
87,950 MHz	350 kHz	9 dB	-27 dBm	-7 dB
87,975 MHz	375 kHz	9 dB	-27 dBm	-7 dB
88,000 MHz	400 kHz	8 dB	-26 dBm	-8 dB
88,050 MHz	450 kHz	8 dB	-26 dBm	-8 dB
88,100 MHz	500 kHz	7 dB	-25 dBm	-9 dB
88,150 MHz	550 kHz	7 dB	-25 dBm	-9 dB
88,200 MHz	600 kHz	7 dB	-25 dBm	-10 dB



Rx: **7 (car radio)**

Unwanted: **DRM120 unfiltered**

Frequency: variable

Full level: 9 dBm at 0 dB atten.

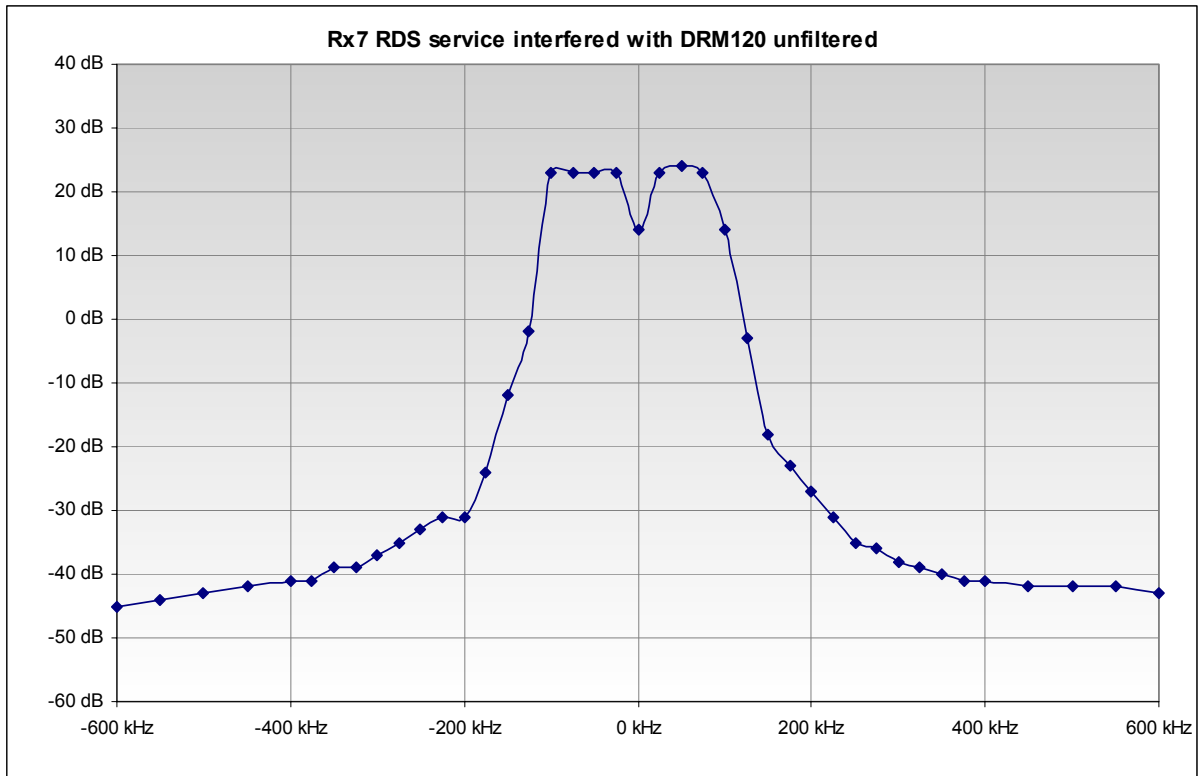
Wanted: **RDS-Service**

Frequency: 87,600 MHz

Level: -46 dBm

Criteria: **first occurrence of bit errors**

unwanted frequency	freq.-differ.	S/N Interference		
			DRM level	prot. ratio
87,000 MHz	-600 kHz	10 dB	-1 dBm	-45 dB
87,050 MHz	-550 kHz	11 dB	-2 dBm	-44 dB
87,100 MHz	-500 kHz	12 dB	-3 dBm	-43 dB
87,150 MHz	-450 kHz	13 dB	-4 dBm	-42 dB
87,200 MHz	-400 kHz	14 dB	-5 dBm	-41 dB
87,225 MHz	-375 kHz	14 dB	-5 dBm	-41 dB
87,250 MHz	-350 kHz	16 dB	-7 dBm	-39 dB
87,275 MHz	-325 kHz	16 dB	-7 dBm	-39 dB
87,300 MHz	-300 kHz	18 dB	-9 dBm	-37 dB
87,325 MHz	-275 kHz	20 dB	-11 dBm	-35 dB
87,350 MHz	-250 kHz	22 dB	-13 dBm	-33 dB
87,375 MHz	-225 kHz	24 dB	-15 dBm	-31 dB
87,400 MHz	-200 kHz	24 dB	-15 dBm	-31 dB
87,425 MHz	-175 kHz	31 dB	-22 dBm	-24 dB
87,450 MHz	-150 kHz	43 dB	-34 dBm	-12 dB
87,475 MHz	-125 kHz	53 dB	-44 dBm	-2 dB
87,500 MHz	-100 kHz	78 dB	-69 dBm	23 dB
87,525 MHz	-75 kHz	78 dB	-69 dBm	23 dB
87,550 MHz	-50 kHz	78 dB	-69 dBm	23 dB
87,575 MHz	-25 kHz	78 dB	-69 dBm	23 dB
87,600 MHz	0 kHz	69 dB	-60 dBm	14 dB
87,625 MHz	25 kHz	78 dB	-69 dBm	23 dB
87,650 MHz	50 kHz	79 dB	-70 dBm	24 dB
87,675 MHz	75 kHz	78 dB	-69 dBm	23 dB
87,700 MHz	100 kHz	69 dB	-60 dBm	14 dB
87,725 MHz	125 kHz	52 dB	-43 dBm	-3 dB
87,750 MHz	150 kHz	37 dB	-28 dBm	-18 dB
87,775 MHz	175 kHz	32 dB	-23 dBm	-23 dB
87,800 MHz	200 kHz	28 dB	-19 dBm	-27 dB
87,825 MHz	225 kHz	24 dB	-15 dBm	-31 dB
87,850 MHz	250 kHz	20 dB	-11 dBm	-35 dB
87,875 MHz	275 kHz	19 dB	-10 dBm	-36 dB
87,900 MHz	300 kHz	17 dB	-8 dBm	-38 dB
87,925 MHz	325 kHz	16 dB	-7 dBm	-39 dB
87,950 MHz	350 kHz	15 dB	-6 dBm	-40 dB
87,975 MHz	375 kHz	14 dB	-5 dBm	-41 dB
88,000 MHz	400 kHz	14 dB	-5 dBm	-41 dB
88,050 MHz	450 kHz	13 dB	-4 dBm	-42 dB
88,100 MHz	500 kHz	13 dB	-4 dBm	-42 dB
88,150 MHz	550 kHz	13 dB	-4 dBm	-42 dB
88,200 MHz	600 kHz	12 dB	-3 dBm	-43 dB



## 2.2 DRM120 -> Narrowband FM / BOS reception

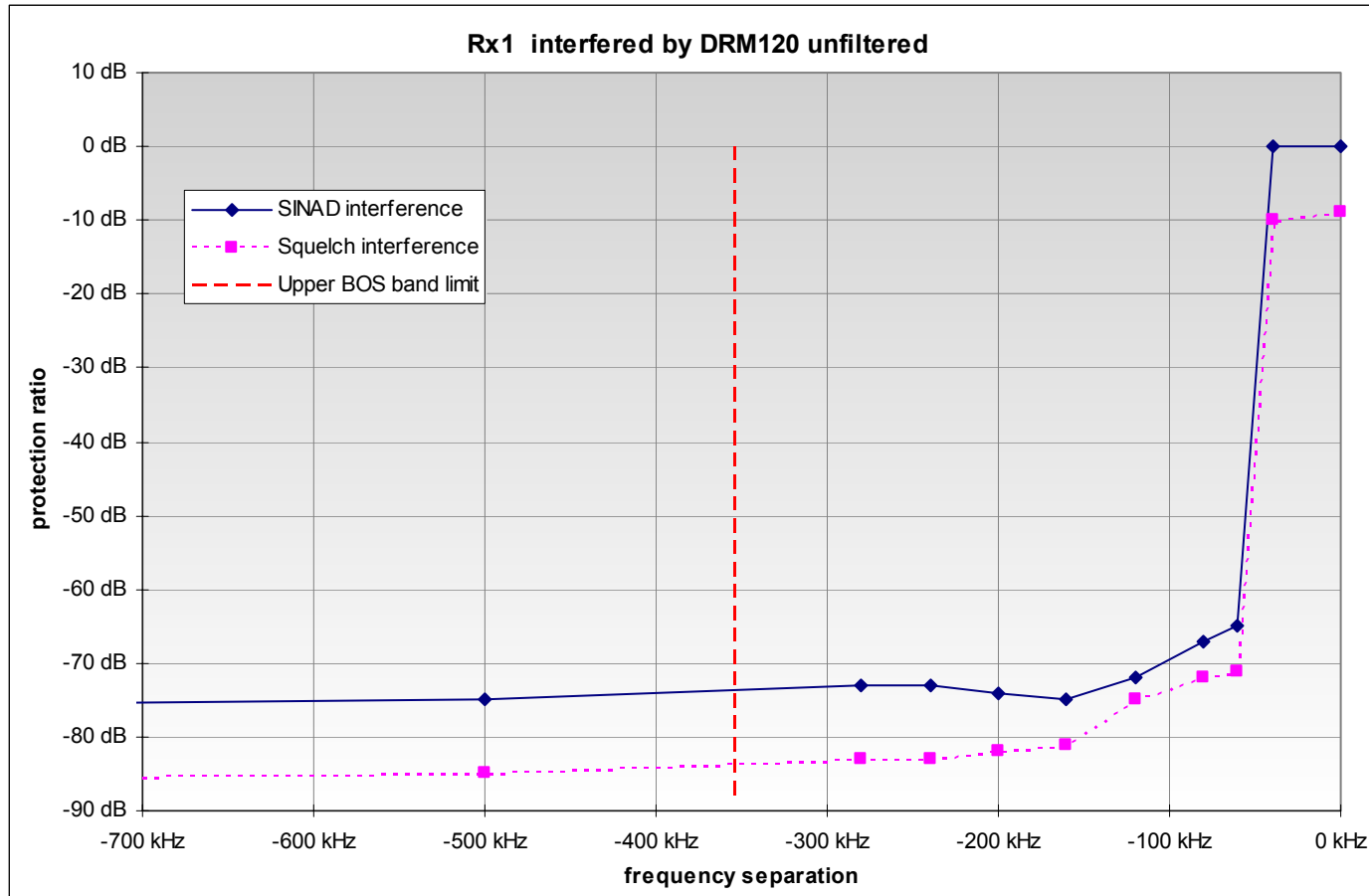
Rx: 1  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -114 dBm  
 Squelch sensitivity: -110 dBm

Unwanted: **DRM120 unfiltered**  
 Frequency: 87,255 MHz (center)  
 Full level: 11 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -104 dBm  
 Level for squelch: -100 dBm

Criteria: **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference						Squelch opens	
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio	DRM atten.	DRM level
87,255 MHz	0 kHz	115 dB	-104 dBm	0 dB	102 dB	-91 dBm	-9 dB	-	-
87,215 MHz	-40 kHz	115 dB	-104 dBm	0 dB	101 dB	-90 dBm	-10 dB	-	-
87,195 MHz	-60 kHz	50 dB	-39 dBm	-65 dB	40 dB	-29 dBm	-71 dB	-	-
87,175 MHz	-80 kHz	48 dB	-37 dBm	-67 dB	39 dB	-28 dBm	-72 dB	-	-
87,135 MHz	-120 kHz	43 dB	-32 dBm	-72 dB	36 dB	-25 dBm	-75 dB	-	-
87,095 MHz	-160 kHz	40 dB	-29 dBm	-75 dB	30 dB	-19 dBm	-81 dB	-	-
87,055 MHz	-200 kHz	41 dB	-30 dBm	-74 dB	29 dB	-18 dBm	-82 dB	-	-
87,015 MHz	-240 kHz	42 dB	-31 dBm	-73 dB	28 dB	-17 dBm	-83 dB	-	-
86,975 MHz	-280 kHz	42 dB	-31 dBm	-73 dB	28 dB	-17 dBm	-83 dB	-	-
86,755 MHz	-500 kHz	40 dB	-29 dBm	-75 dB	26 dB	-15 dBm	-85 dB	-	-
86,255 MHz	-1000 kHz	39 dB	-28 dBm	-76 dB	25 dB	-14 dBm	-86 dB	-	-
85,255 MHz	-2000 kHz	38 dB	-27 dBm	-77 dB	24 dB	-13 dBm	-87 dB	-	-
85,015 MHz	-2240 kHz	38 dB	-27 dBm	-77 dB	23 dB	-12 dBm	-88 dB	-	-
84,575 MHz	-2680 kHz	42 dB	-31 dBm	-73 dB	27 dB	-16 dBm	-84 dB	-	-
84,255 MHz	-3000 kHz	41 dB	-30 dBm	-74 dB	26 dB	-15 dBm	-85 dB	-	-
84,015 MHz	-3240 kHz	38 dB	-27 dBm	-77 dB	24 dB	-13 dBm	-87 dB	-	-



Rx: **2**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -113 dBm  
 Squelch sensitivity: -112 dBm

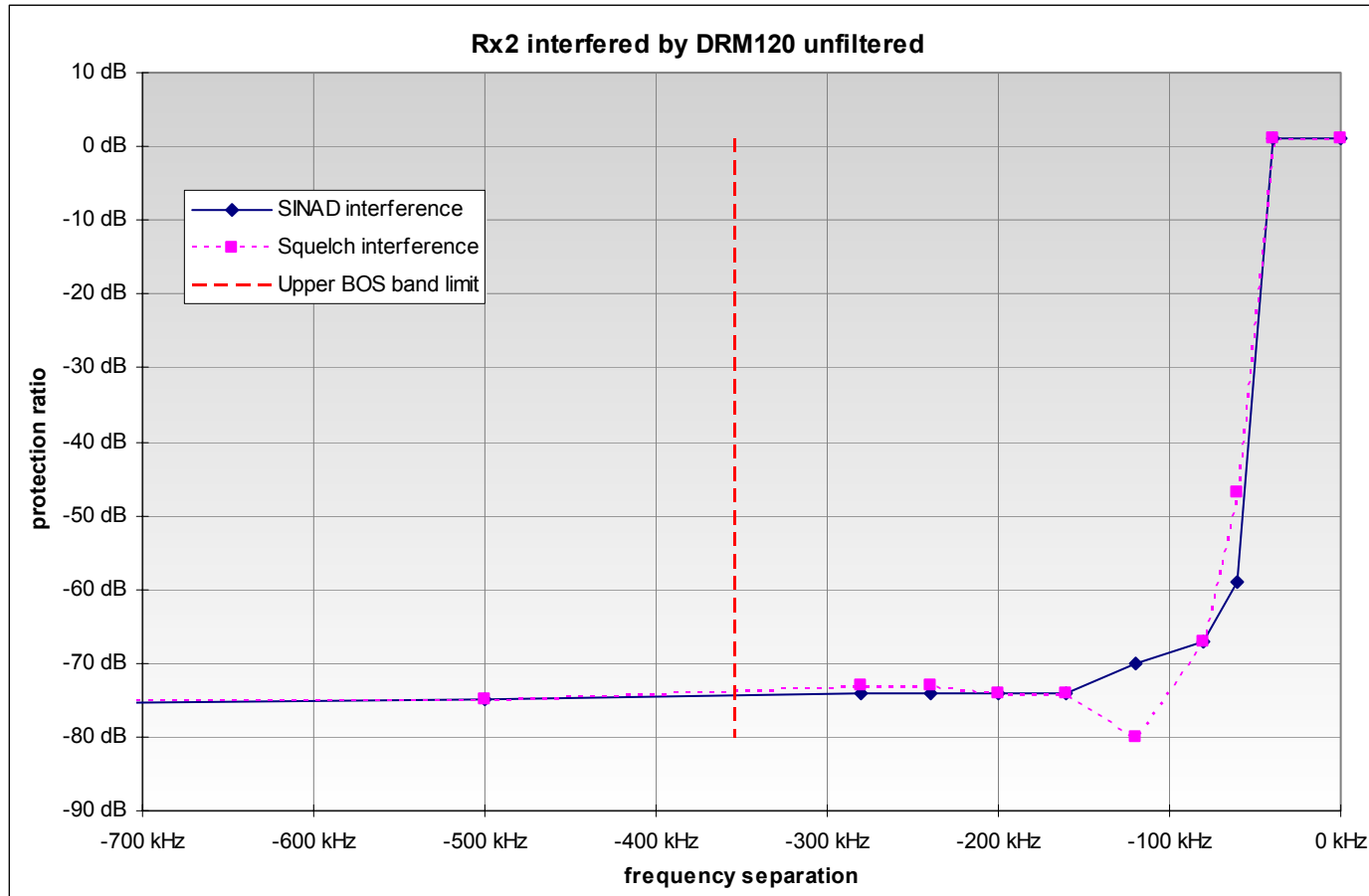
Unwanted: **DRM120 unfiltered**  
 Frequency: 87,255 MHz (center)  
 Full level: 11 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -103 dBm  
 Level for squelch: -102 dBm

Criteria: **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio	DRM atten.	DRM level
87,255 MHz	0 kHz	115 dB	-104 dBm	1 dB	114 dB	-103 dBm	1 dB	-	-
87,215 MHz	-40 kHz	115 dB	-104 dBm	1 dB	114 dB	-103 dBm	1 dB	-	-
87,195 MHz	-60 kHz	55 dB	-44 dBm	-59 dB	66 dB	-55 dBm	-47 dB	-	-
87,175 MHz	-80 kHz	47 dB	-36 dBm	-67 dB	46 dB	-35 dBm	-67 dB	-	-
87,135 MHz	-120 kHz	44 dB	-33 dBm	-70 dB	33 dB	-22 dBm	-80 dB	-	-
87,095 MHz	-160 kHz	40 dB	-29 dBm	-74 dB	39 dB	-28 dBm	-74 dB	-	-
87,055 MHz	-200 kHz	40 dB	-29 dBm	-74 dB	39 dB	-28 dBm	-74 dB	-	-
87,015 MHz	-240 kHz	40 dB	-29 dBm	-74 dB	40 dB	-29 dBm	-73 dB	-	-
86,975 MHz	-280 kHz	40 dB	-29 dBm	-74 dB	40 dB	-29 dBm	-73 dB	-	-
86,755 MHz	-500 kHz	39 dB	-28 dBm	-75 dB	38 dB	-27 dBm	-75 dB	-	-
86,255 MHz	-1000 kHz	38 dB	-27 dBm	-76 dB	38 dB	-27 dBm	-75 dB	-	-
85,255 MHz	-2000 kHz	38 dB	-27 dBm	-76 dB	37 dB	-26 dBm	-76 dB	-	-
85,015 MHz	-2240 kHz	37 dB	-26 dBm	-77 dB	36 dB	-25 dBm	-77 dB	-	-
84,575 MHz	-2680 kHz	41 dB	-30 dBm	-73 dB	41 dB	-30 dBm	-72 dB	-	-
84,255 MHz	-3000 kHz	41 dB	-30 dBm	-73 dB	40 dB	-29 dBm	-73 dB	-	-
84,015 MHz	-3240 kHz	38 dB	-27 dBm	-76 dB	37 dB	-26 dBm	-76 dB	-	-





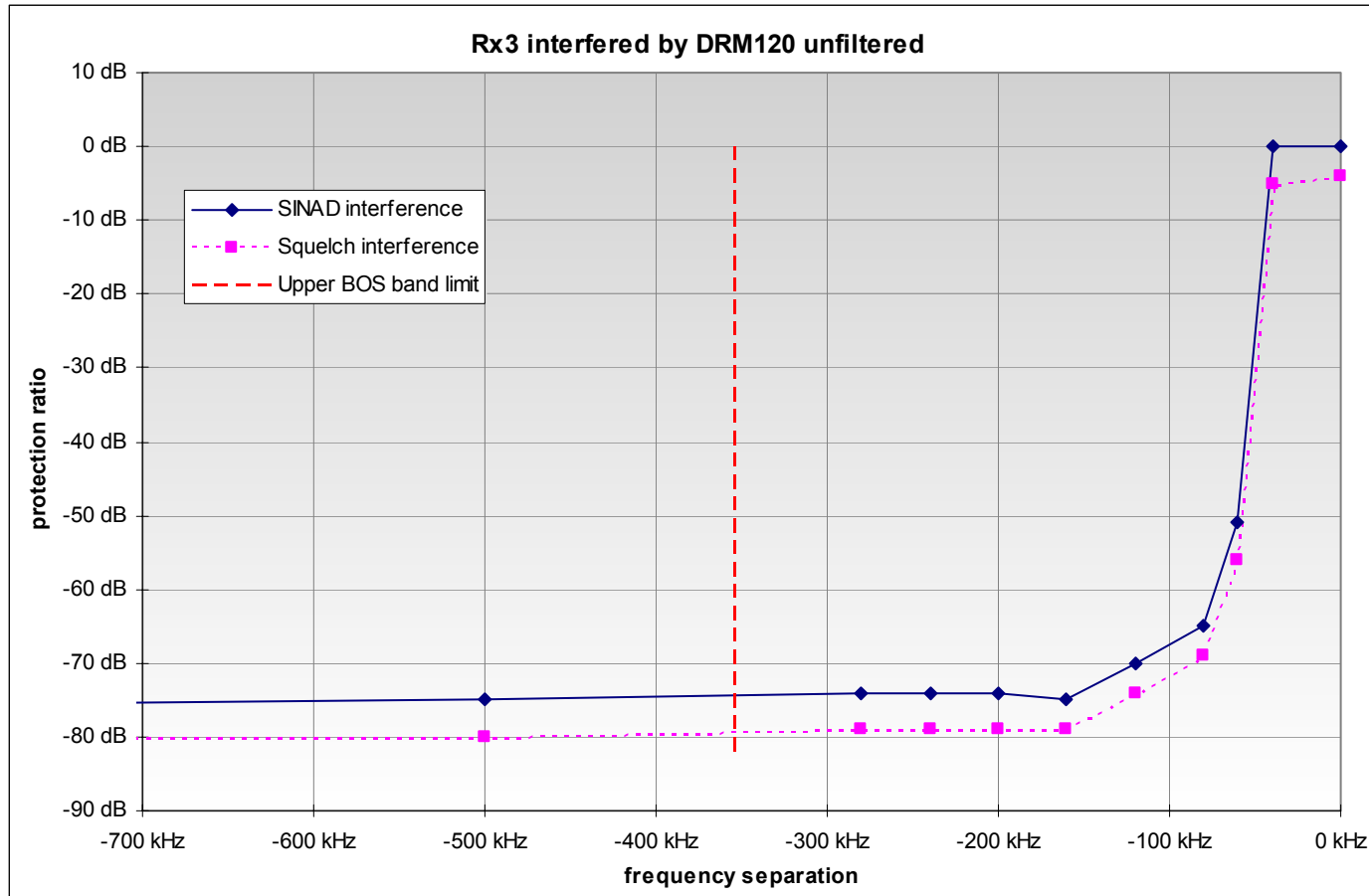
Rx: **3**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -116 dBm  
 Squelch sensitivity: -116 dBm

Unwanted: **DRM120 unfiltered**  
 Frequency: 87,255 MHz (center)  
 Full level: 11 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -106 dBm  
 Level for squelch: -106 dBm

Criteria: **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			SINAD Interference			Squelch opens	DRM level
		SINAD	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio		
87,255 MHz	0 kHz	117 dB	-106 dBm	0 dB	113 dB	-102 dBm	-4 dB	-	-
87,215 MHz	-40 kHz	117 dB	-106 dBm	0 dB	112 dB	-101 dBm	-5 dB	-	-
87,195 MHz	-60 kHz	66 dB	-55 dBm	-51 dB	61 dB	-50 dBm	-56 dB	-	-
87,175 MHz	-80 kHz	52 dB	-41 dBm	-65 dB	48 dB	-37 dBm	-69 dB	-	-
87,135 MHz	-120 kHz	47 dB	-36 dBm	-70 dB	43 dB	-32 dBm	-74 dB	-	-
87,095 MHz	-160 kHz	42 dB	-31 dBm	-75 dB	38 dB	-27 dBm	-79 dB	-	-
87,055 MHz	-200 kHz	43 dB	-32 dBm	-74 dB	38 dB	-27 dBm	-79 dB	-	-
87,015 MHz	-240 kHz	43 dB	-32 dBm	-74 dB	38 dB	-27 dBm	-79 dB	-	-
86,975 MHz	-280 kHz	43 dB	-32 dBm	-74 dB	38 dB	-27 dBm	-79 dB	-	-
86,755 MHz	-500 kHz	42 dB	-31 dBm	-75 dB	37 dB	-26 dBm	-80 dB	-	-
86,255 MHz	-1000 kHz	41 dB	-30 dBm	-76 dB	37 dB	-26 dBm	-80 dB	-	-
85,255 MHz	-2000 kHz	41 dB	-30 dBm	-76 dB	36 dB	-25 dBm	-81 dB	-	-
85,015 MHz	-2240 kHz	40 dB	-29 dBm	-77 dB	35 dB	-24 dBm	-82 dB	-	-
84,575 MHz	-2680 kHz	44 dB	-33 dBm	-73 dB	39 dB	-28 dBm	-78 dB	-	-
84,255 MHz	-3000 kHz	43 dB	-32 dBm	-74 dB	37 dB	-26 dBm	-80 dB	-	-
84,015 MHz	-3240 kHz	40 dB	-29 dBm	-77 dB	36 dB	-25 dBm	-81 dB	-	-



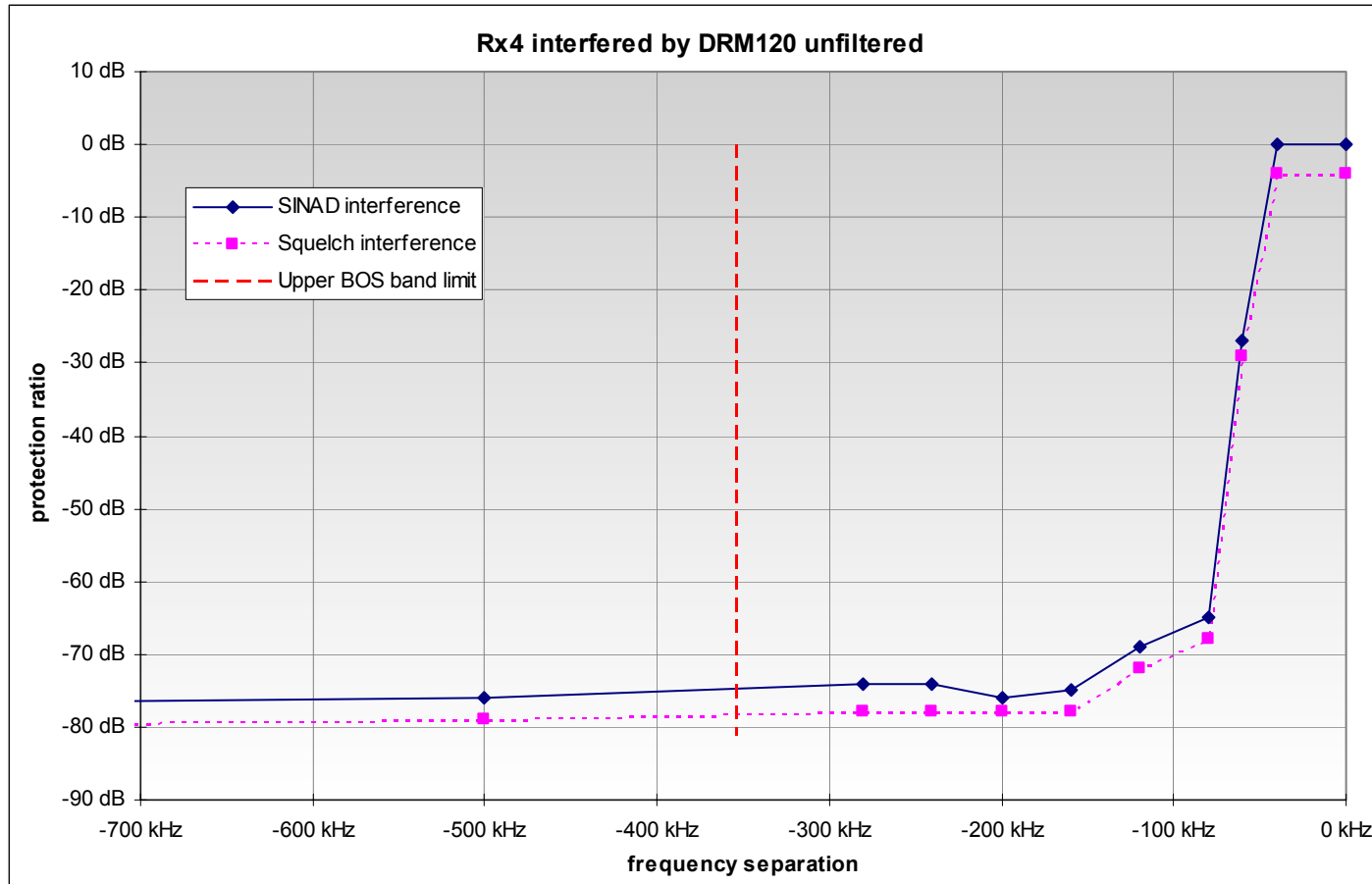
Rx: **4**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -113 dBm  
 Squelch sensitivity: -114 dBm

Unwanted: **DRM120 unfiltered**  
 Frequency: 87,255 MHz (center)  
 Full level: 11 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -103 dBm  
 Level for squelch: -104 dBm

Criteria: **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio	DRM atten.	DRM level
87,255 MHz	0 kHz	114 dB	-103 dBm	0 dB	111 dB	-100 dBm	-4 dB	-	-
87,215 MHz	-40 kHz	114 dB	-103 dBm	0 dB	111 dB	-100 dBm	-4 dB	-	-
87,195 MHz	-60 kHz	87 dB	-76 dBm	-27 dB	86 dB	-75 dBm	-29 dB	-79 dBm	-
87,175 MHz	-80 kHz	49 dB	-38 dBm	-65 dB	47 dB	-36 dBm	-68 dB	-	-
87,135 MHz	-120 kHz	45 dB	-34 dBm	-69 dB	43 dB	-32 dBm	-72 dB	-	-
87,095 MHz	-160 kHz	39 dB	-28 dBm	-75 dB	37 dB	-26 dBm	-78 dB	-	-
87,055 MHz	-200 kHz	38 dB	-27 dBm	-76 dB	37 dB	-26 dBm	-78 dB	-	-
87,015 MHz	-240 kHz	40 dB	-29 dBm	-74 dB	37 dB	-26 dBm	-78 dB	-	-
86,975 MHz	-280 kHz	40 dB	-29 dBm	-74 dB	37 dB	-26 dBm	-78 dB	-	-
86,755 MHz	-500 kHz	38 dB	-27 dBm	-76 dB	36 dB	-25 dBm	-79 dB	-	-
86,255 MHz	-1000 kHz	37 dB	-26 dBm	-77 dB	35 dB	-24 dBm	-80 dB	-	-
85,255 MHz	-2000 kHz	38 dB	-27 dBm	-76 dB	35 dB	-24 dBm	-80 dB	-	-
85,015 MHz	-2240 kHz	36 dB	-25 dBm	-78 dB	34 dB	-23 dBm	-81 dB	-	-
84,575 MHz	-2680 kHz	41 dB	-30 dBm	-73 dB	38 dB	-27 dBm	-77 dB	-	-
84,255 MHz	-3000 kHz	40 dB	-29 dBm	-74 dB	35 dB	-24 dBm	-80 dB	-	-
84,015 MHz	-3240 kHz	36 dB	-25 dBm	-78 dB	34 dB	-23 dBm	-81 dB	-	-



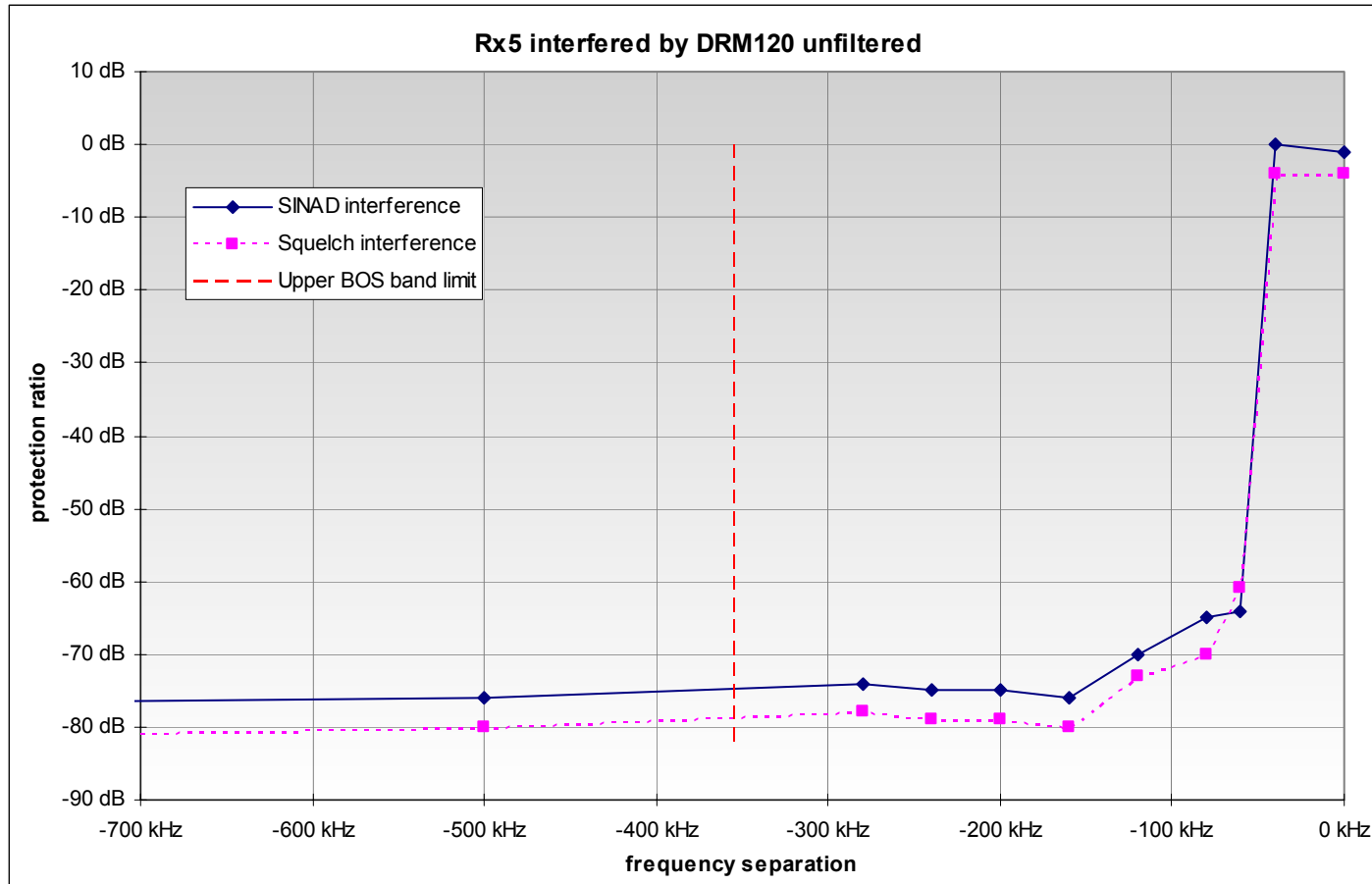
Rx: **5**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -114 dBm  
 Squelch sensitivity: -116 dBm

Unwanted: **DRM120 unfiltered**  
 Frequency: 87,255 MHz (center)  
 Full level: 11 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -104 dBm  
 Level for squelch: -106 dBm

Criteria: **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio	DRM atten.	DRM level
87,255 MHz	0 kHz	114 dB	-103 dBm	-1 dB	113 dB	-102 dBm	-4 dB	-	-
87,215 MHz	-40 kHz	115 dB	-104 dBm	0 dB	113 dB	-102 dBm	-4 dB	-	-
87,195 MHz	-60 kHz	51 dB	-40 dBm	-64 dB	56 dB	-45 dBm	-61 dB	-	-
87,175 MHz	-80 kHz	50 dB	-39 dBm	-65 dB	47 dB	-36 dBm	-70 dB	-	-
87,135 MHz	-120 kHz	45 dB	-34 dBm	-70 dB	44 dB	-33 dBm	-73 dB	-	-
87,095 MHz	-160 kHz	39 dB	-28 dBm	-76 dB	37 dB	-26 dBm	-80 dB	-	-
87,055 MHz	-200 kHz	40 dB	-29 dBm	-75 dB	38 dB	-27 dBm	-79 dB	-	-
87,015 MHz	-240 kHz	40 dB	-29 dBm	-75 dB	38 dB	-27 dBm	-79 dB	-	-
86,975 MHz	-280 kHz	41 dB	-30 dBm	-74 dB	39 dB	-28 dBm	-78 dB	-	-
86,755 MHz	-500 kHz	39 dB	-28 dBm	-76 dB	37 dB	-26 dBm	-80 dB	-	-
86,255 MHz	-1000 kHz	38 dB	-27 dBm	-77 dB	35 dB	-24 dBm	-82 dB	-	-
85,255 MHz	-2000 kHz	39 dB	-28 dBm	-76 dB	35 dB	-24 dBm	-82 dB	-	-
85,015 MHz	-2240 kHz	37 dB	-26 dBm	-78 dB	34 dB	-23 dBm	-83 dB	-	-
84,575 MHz	-2680 kHz	40 dB	-29 dBm	-75 dB	38 dB	-27 dBm	-79 dB	-	-
84,255 MHz	-3000 kHz	40 dB	-29 dBm	-75 dB	36 dB	-25 dBm	-81 dB	-	-
84,015 MHz	-3240 kHz	37 dB	-26 dBm	-78 dB	34 dB	-23 dBm	-83 dB	-	-



Rx: **6**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -116 dBm  
 Squelch sensitivity: -114 dBm

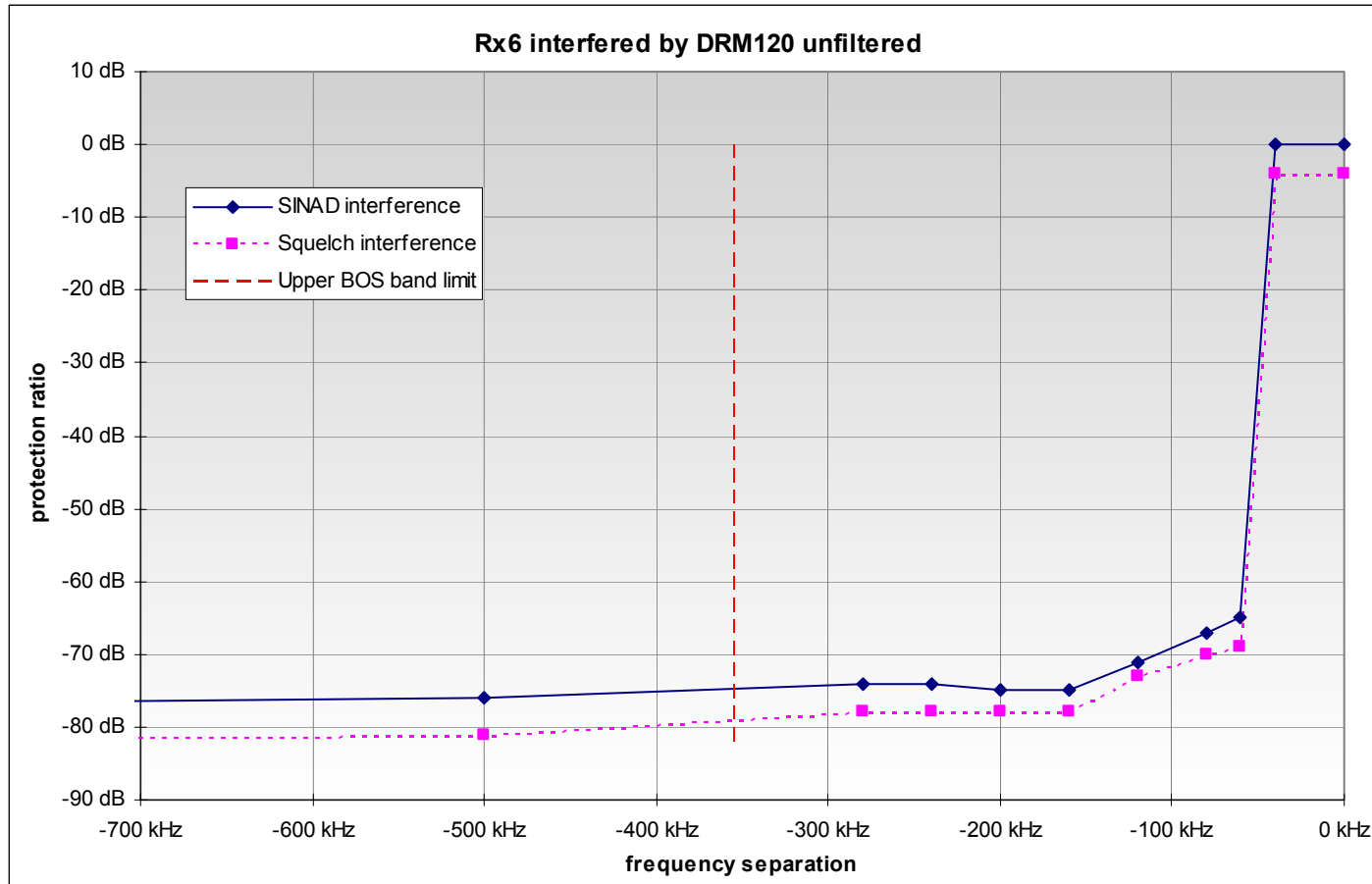
Unwanted: **DRM120 unfiltered**  
 Frequency: 87,255 MHz (center)  
 Full level: 11 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -106 dBm  
 Level for squelch: -104 dBm

Criteria: **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio	DRM atten.	DRM level
87,255 MHz	0 kHz	117 dB	-106 dBm	0 dB	111 dB	-100 dBm	-4 dB	-	-
87,215 MHz	-40 kHz	117 dB	-106 dBm	0 dB	111 dB	-100 dBm	-4 dB	-	-
87,195 MHz	-60 kHz	52 dB	-41 dBm	-65 dB	46 dB	-35 dBm	-69 dB	-	-
87,175 MHz	-80 kHz	50 dB	-39 dBm	-67 dB	45 dB	-34 dBm	-70 dB	-	-
87,135 MHz	-120 kHz	46 dB	-35 dBm	-71 dB	42 dB	-31 dBm	-73 dB	-	-
87,095 MHz	-160 kHz	42 dB	-31 dBm	-75 dB	37 dB	-26 dBm	-78 dB	-	-
87,055 MHz	-200 kHz	42 dB	-31 dBm	-75 dB	37 dB	-26 dBm	-78 dB	-	-
87,015 MHz	-240 kHz	43 dB	-32 dBm	-74 dB	37 dB	-26 dBm	-78 dB	-	-
86,975 MHz	-280 kHz	43 dB	-32 dBm	-74 dB	37 dB	-26 dBm	-78 dB	-	-
86,755 MHz	-500 kHz	41 dB	-30 dBm	-76 dB	34 dB	-23 dBm	-81 dB	-	-
86,255 MHz	-1000 kHz	40 dB	-29 dBm	-77 dB	33 dB	-22 dBm	-82 dB	-	-
85,255 MHz	-2000 kHz	40 dB	-29 dBm	-77 dB	33 dB	-22 dBm	-82 dB	-	-
85,015 MHz	-2240 kHz	38 dB	-27 dBm	-79 dB	32 dB	-21 dBm	-83 dB	-	-
84,575 MHz	-2680 kHz	43 dB	-32 dBm	-74 dB	36 dB	-25 dBm	-79 dB	-	-
84,255 MHz	-3000 kHz	42 dB	-31 dBm	-75 dB	34 dB	-23 dBm	-81 dB	-	-
84,015 MHz	-3240 kHz	39 dB	-28 dBm	-78 dB	32 dB	-21 dBm	-83 dB	-	-





### 2.3 DRM120 -> VOR reception

**Rx:** 1  
 Undist. Course dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

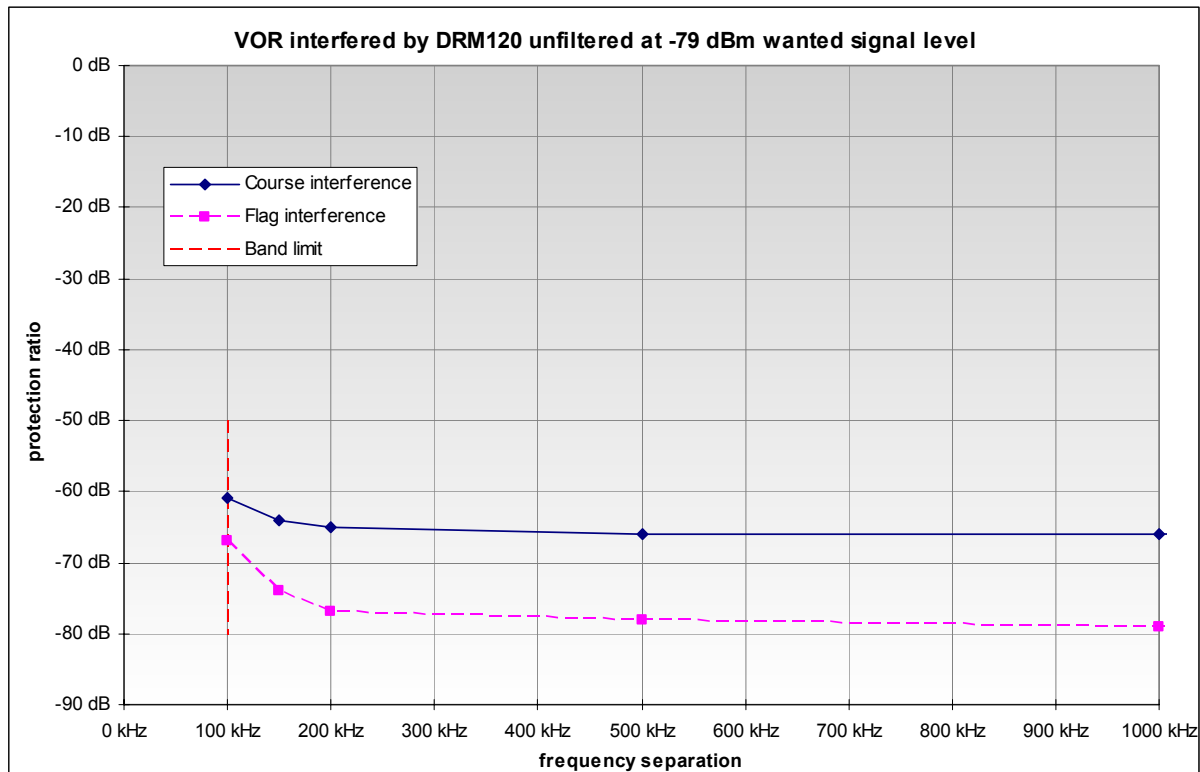
**Unwanted:** **DRM120 unfiltered**  
 Frequency: (variable) (center)  
 Full level: -5 dBm at 0 dB atten.

**Wanted:** **VOR**  
 Frequency: 108,0 MHz  
 Level: -79 dBm

**Criteria:** **DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.		prot. ratio
107,900 MHz	100 kHz	13 dB	-18 dBm	-61 dB	7 dB	-12 dBm	-67 dB
107,850 MHz	150 kHz	10 dB	-15 dBm	-64 dB	0 dB	-5 dBm	-74 dB
107,800 MHz	200 kHz	9 dB	-14 dBm	-65 dB	-3 dB	-2 dBm	-77 dB
107,500 MHz	500 kHz	8 dB	-13 dBm	-66 dB	-4 dB	-1 dBm	-78 dB
107,000 MHz	1000 kHz	8 dB	-13 dBm	-66 dB	-5 dB	0 dBm	-79 dB
106,000 MHz	2000 kHz	12 dB	-17 dBm	-62 dB	1 dB	-6 dBm	-73 dB
105,000 MHz	3000 kHz	9 dB	-14 dBm	-65 dB	-6 dB	1 dBm	-80 dB
103,000 MHz	5000 kHz	7 dB	-12 dBm	-67 dB		> 1 dBm	< -80 dB

**Remarks:**  
 Negative attenuation is achieved by temporarily increasing the full level



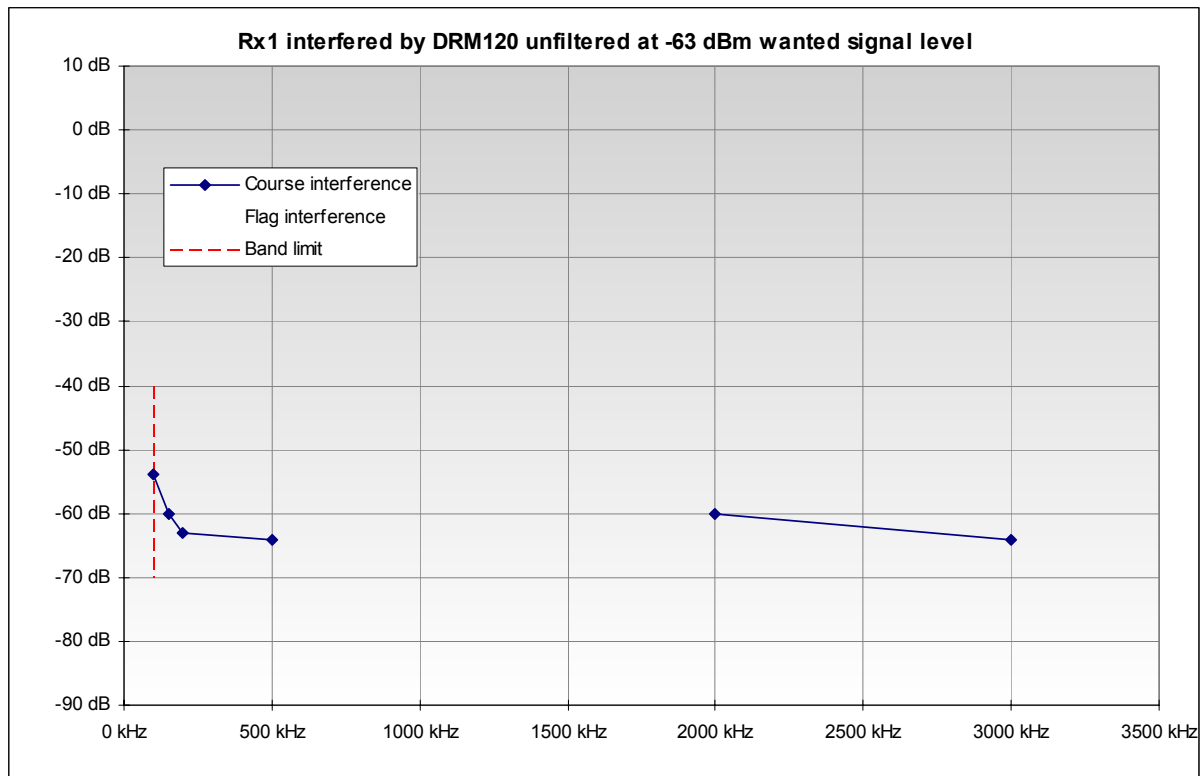
**Rx: 1**  
 Undist. Course dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

**Unwanted: DRM120 unfiltered**  
 Frequency: (variable) (center)  
 Full level: 1 dBm at 0 dB atten.

**Wanted: VOR**  
 Frequency: 108,0 MHz  
 Level: -63 dBm

**Criteria:**  
 DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")  
 DRM-Signal shows flag ("Flag interference")

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	100 kHz	10 dB	-9 dBm	-54 dB		> 1 dBm	< -64 dB
107,850 MHz	150 kHz	4 dB	-3 dBm	-60 dB			
107,800 MHz	200 kHz	1 dB	0 dBm	-63 dB			
107,500 MHz	500 kHz	0 dB	1 dBm	-64 dB			
107,000 MHz	1000 kHz		> 1 dBm	< -64 dB			
106,000 MHz	2000 kHz	4 dB	-3 dBm	-60 dB			
105,000 MHz	3000 kHz	0 dB	1 dBm	-64 dB			
103,000 MHz	5000 kHz		> 1 dBm	< -64 dB			



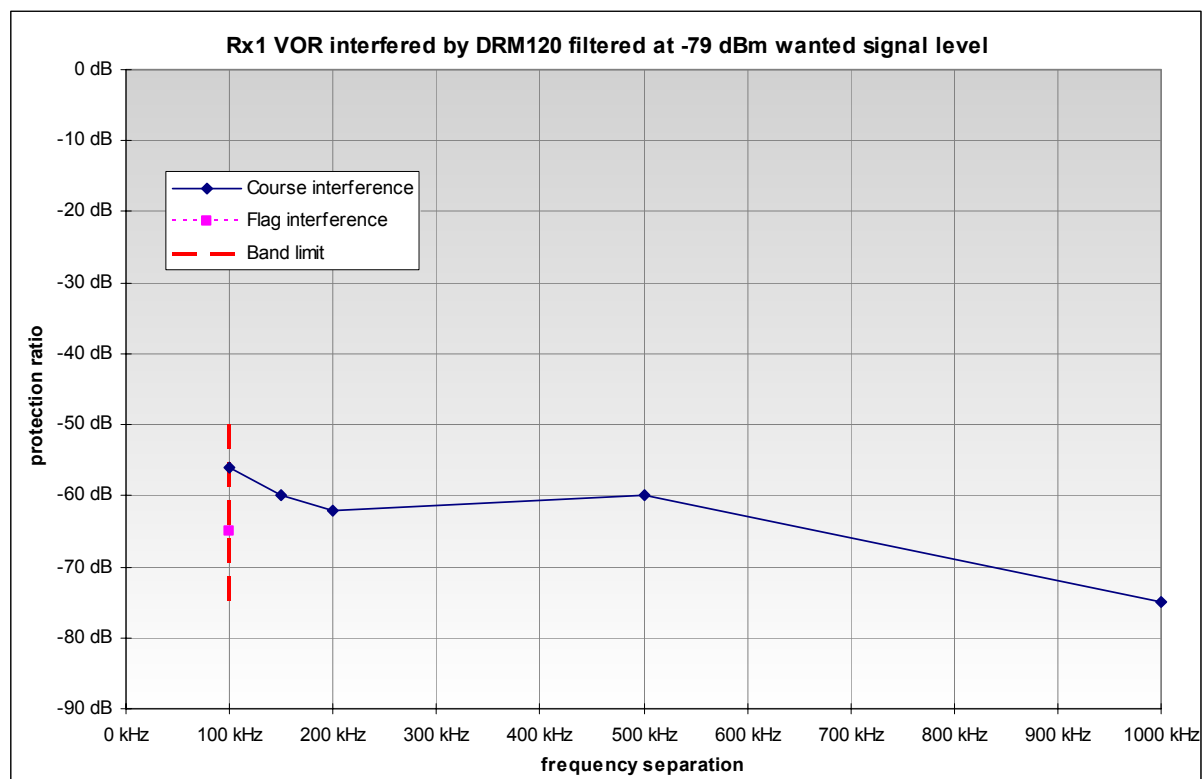
**Rx: 1**  
 Undist. Course dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

**Unwanted: DRM120 with output filter**  
 Frequency: (variable) (center)  
 Full level: -7 dBm at 0 dB atten.

**Wanted: VOR**  
 Frequency: 108,0 MHz  
 Level: -79 dBm

**Criteria: DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")  
 DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
			DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	100 kHz	16 dB	-23 dBm	-56 dB	7 dB	-14 dBm	-65 dB
107,850 MHz	150 kHz	12 dB	-19 dBm	-60 dB		> -4 dBm	< -75 dB
107,800 MHz	200 kHz	10 dB	-17 dBm	-62 dB			
107,500 MHz	500 kHz	12 dB	-19 dBm	-60 dB			
107,000 MHz	1000 kHz	-3 dB	-4 dBm	-75 dB			



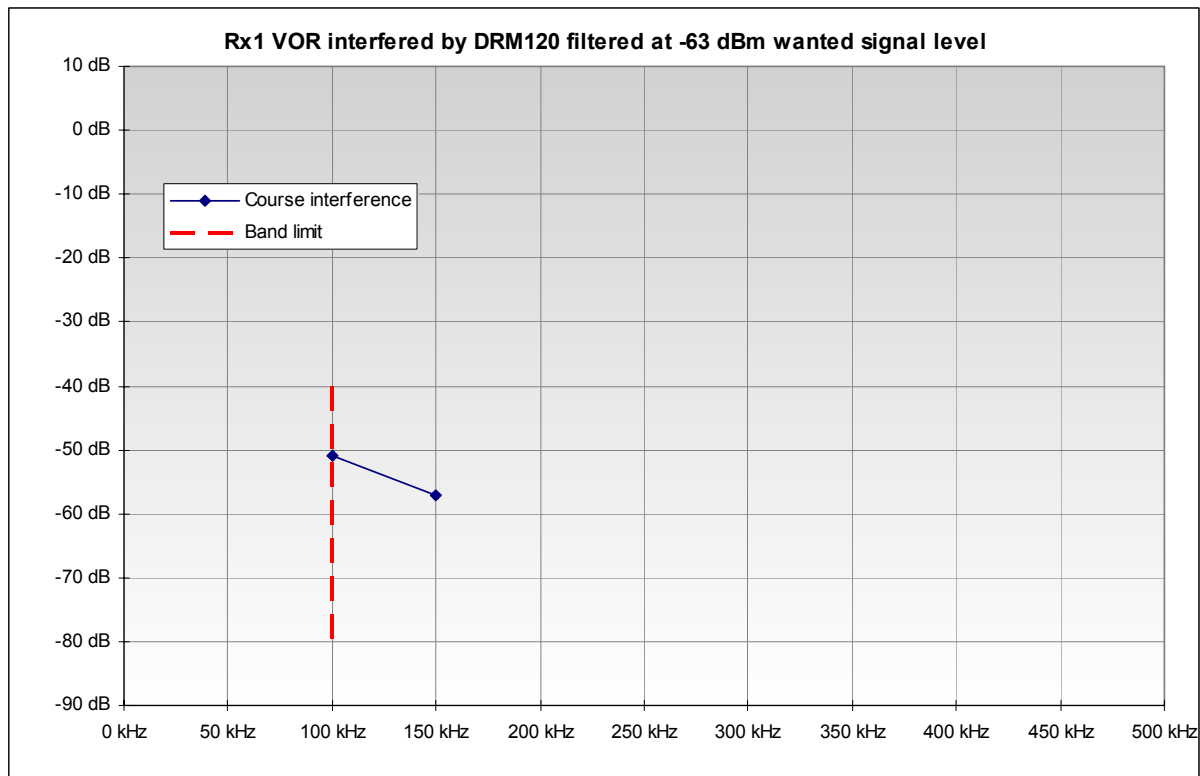
**Rx: 1**  
 Undist. Course dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

**Unwanted: DRM120 with output filter**  
 Frequency: (variable) (center)  
 Full level: -7 dBm at 0 dB atten.

**Wanted: VOR**  
 Frequency: 108,0 MHz  
 Level: -63 dBm

**Criteria: DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")  
 DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			DRM-atten.	DRM level	prot. ratio
		DRM atten.	DRM level	prot. ratio			
107,900 MHz	100 kHz	5 dB	-12 dBm	-51 dB		> -6 dBm	< -57 dB
107,850 MHz	150 kHz	-1 dB	-6 dBm	-57 dB			
107,800 MHz	200 kHz		> -6 dBm	< -57 dB			



## 2.4 DRM120 -> ILS localizer reception

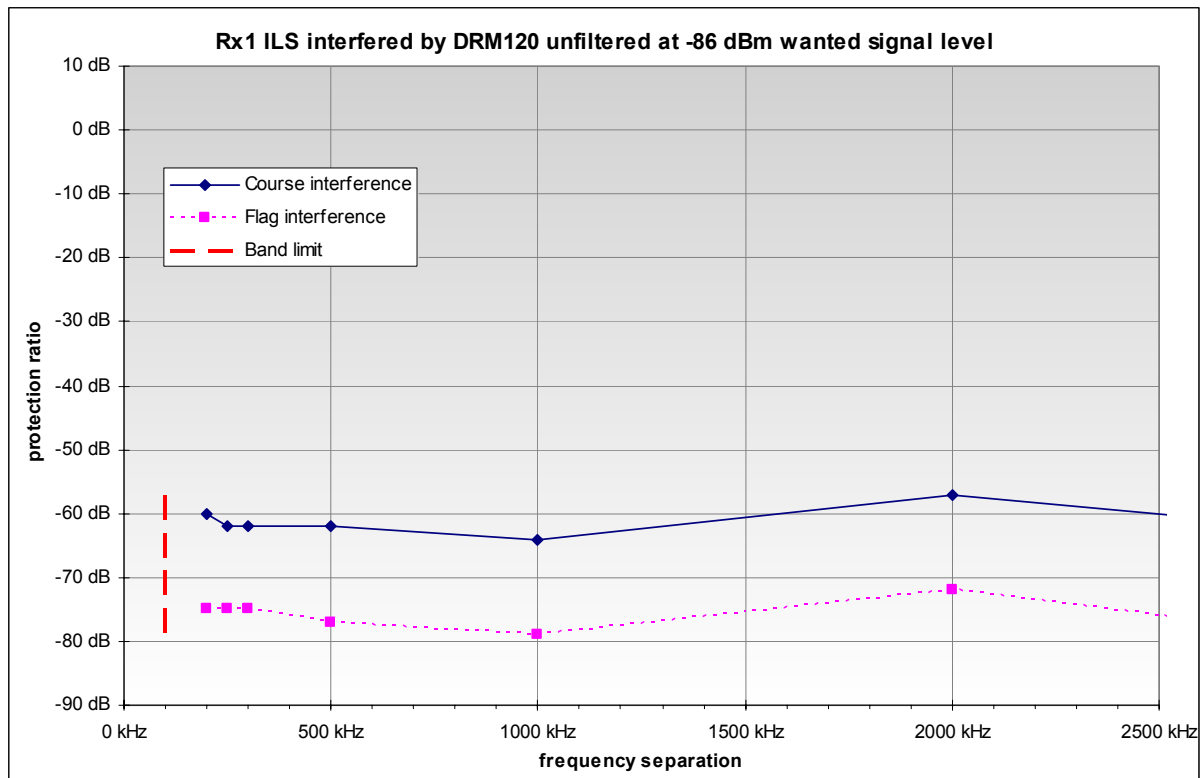
**Rx:** 1  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

**Unwanted:** **DRM120 unfiltered**  
 Frequency: (variable) (center)  
 Full level: -5 dBm at 0 dB atten.

**Wanted:** **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: -86 dBm

**Criteria:** **DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	21 dB	-26 dBm	-60 dB	6 dB	-11 dBm	-75 dB
107,850 MHz	250 kHz	19 dB	-24 dBm	-62 dB	6 dB	-11 dBm	-75 dB
107,800 MHz	300 kHz	19 dB	-24 dBm	-62 dB	6 dB	-11 dBm	-75 dB
107,600 MHz	500 kHz	19 dB	-24 dBm	-62 dB	4 dB	-9 dBm	-77 dB
107,100 MHz	1000 kHz	17 dB	-22 dBm	-64 dB	2 dB	-7 dBm	-79 dB
106,100 MHz	2000 kHz	24 dB	-29 dBm	-57 dB	9 dB	-14 dBm	-72 dB
105,100 MHz	3000 kHz	18 dB	-23 dBm	-63 dB	1 dB	-6 dBm	-80 dB
103,100 MHz	5000 kHz	17 dB	-22 dBm	-64 dB	2 dB	-7 dBm	-79 dB
98,100 MHz	10000 kHz	16 dB	-21 dBm	-65 dB	2 dB	-7 dBm	-79 dB



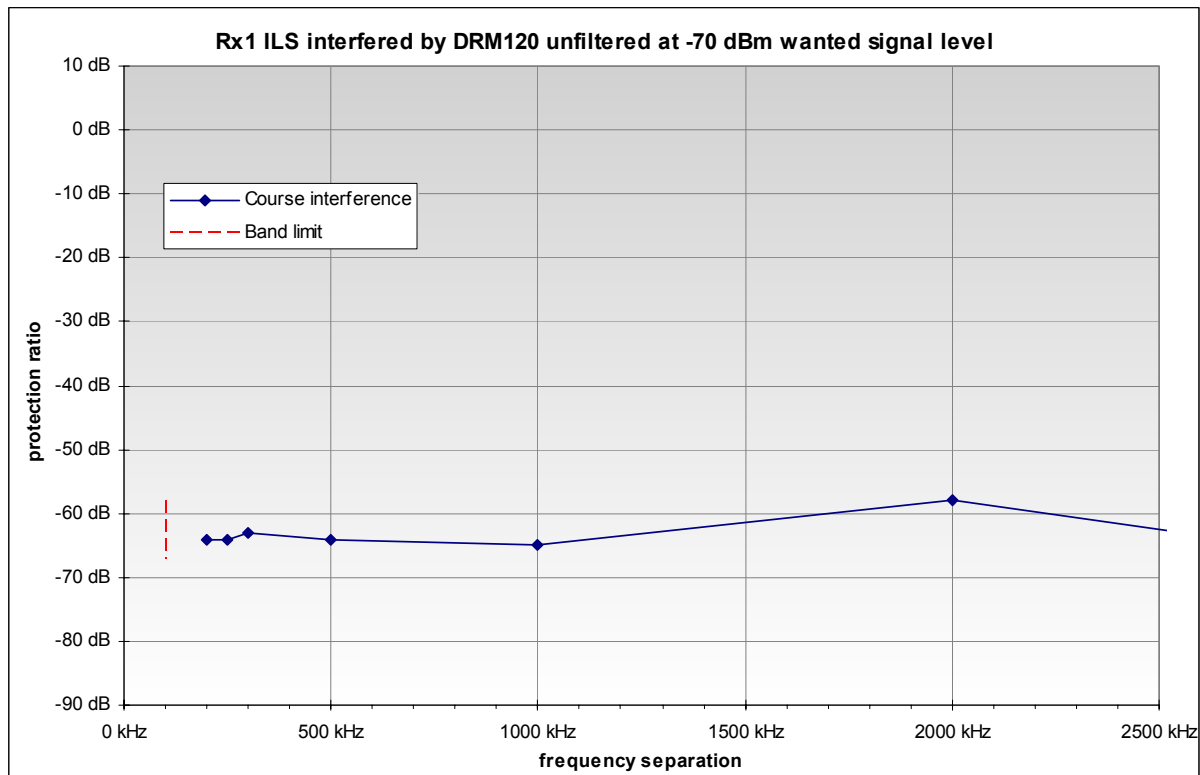
**Rx: 1**  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

**Unwanted: DRM120 unfiltered**  
 Frequency: (variable) (center)  
 Full level: 1 dBm at 0 dB atten.

**Wanted: ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: -70 dBm

**Criteria: DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")  
 DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	7 dB	-6 dBm	-64 dB		> 1 dBm	< -71 dB
107,850 MHz	250 kHz	7 dB	-6 dBm	-64 dB			
107,800 MHz	300 kHz	8 dB	-7 dBm	-63 dB			
107,600 MHz	500 kHz	7 dB	-6 dBm	-64 dB			
107,100 MHz	1000 kHz	6 dB	-5 dBm	-65 dB			
106,100 MHz	2000 kHz	13 dB	-12 dBm	-58 dB			
105,100 MHz	3000 kHz	4 dB	-3 dBm	-67 dB			
103,100 MHz	5000 kHz	4 dB	-3 dBm	-67 dB			
98,100 MHz	10000 kHz	4 dB	-3 dBm	-67 dB			



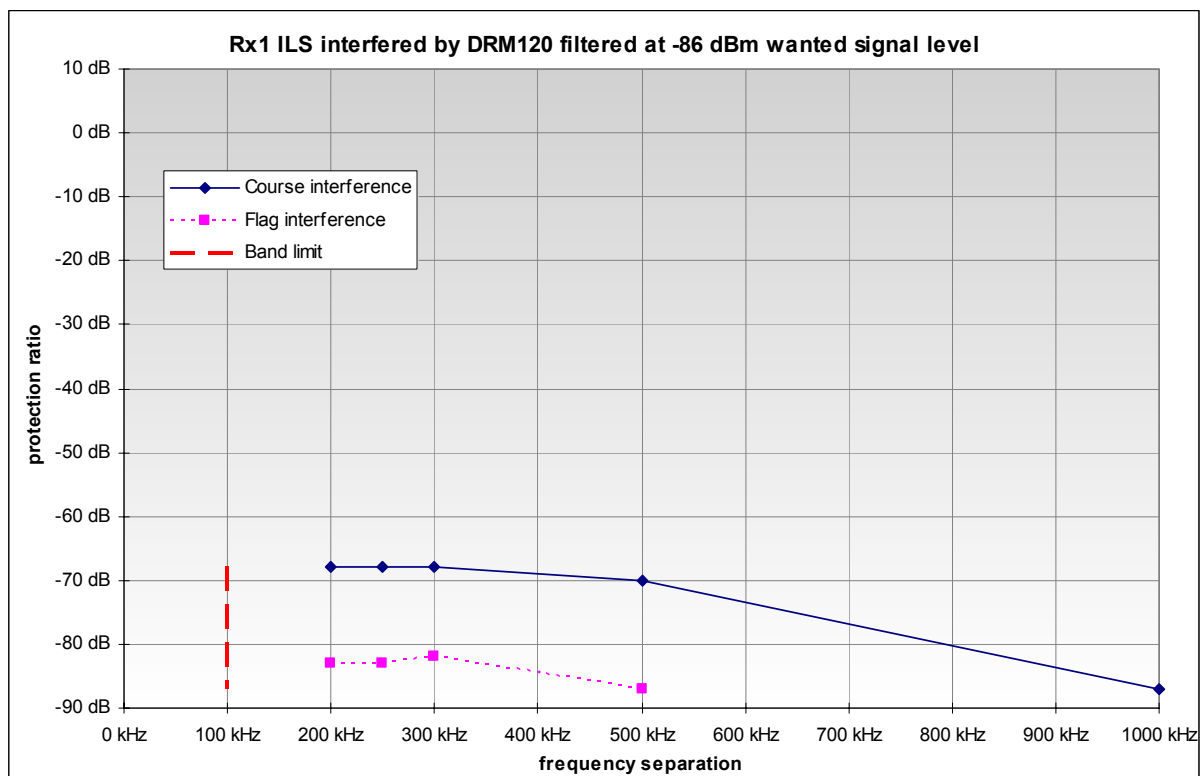
**Rx: 1**  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

**Unwanted: DRM120 with output filter**  
 Frequency: (variable) (center)  
 Full level: 1 dBm at 0 dB atten.

**Wanted: ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: -86 dBm

**Criteria: DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")  
 DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	19 dB	-18 dBm	-68 dB	4 dB	-3 dBm	-83 dB
107,850 MHz	250 kHz	19 dB	-18 dBm	-68 dB	4 dB	-3 dBm	-83 dB
107,800 MHz	300 kHz	19 dB	-18 dBm	-68 dB	5 dB	-4 dBm	-82 dB
107,600 MHz	500 kHz	17 dB	-16 dBm	-70 dB	0 dB	1 dBm	-87 dB
107,100 MHz	1000 kHz	0 dB	1 dBm	-87 dB		> 1 dBm	< -87 dB
106,100 MHz	2000 kHz		> 1 dBm	< -87 dB			





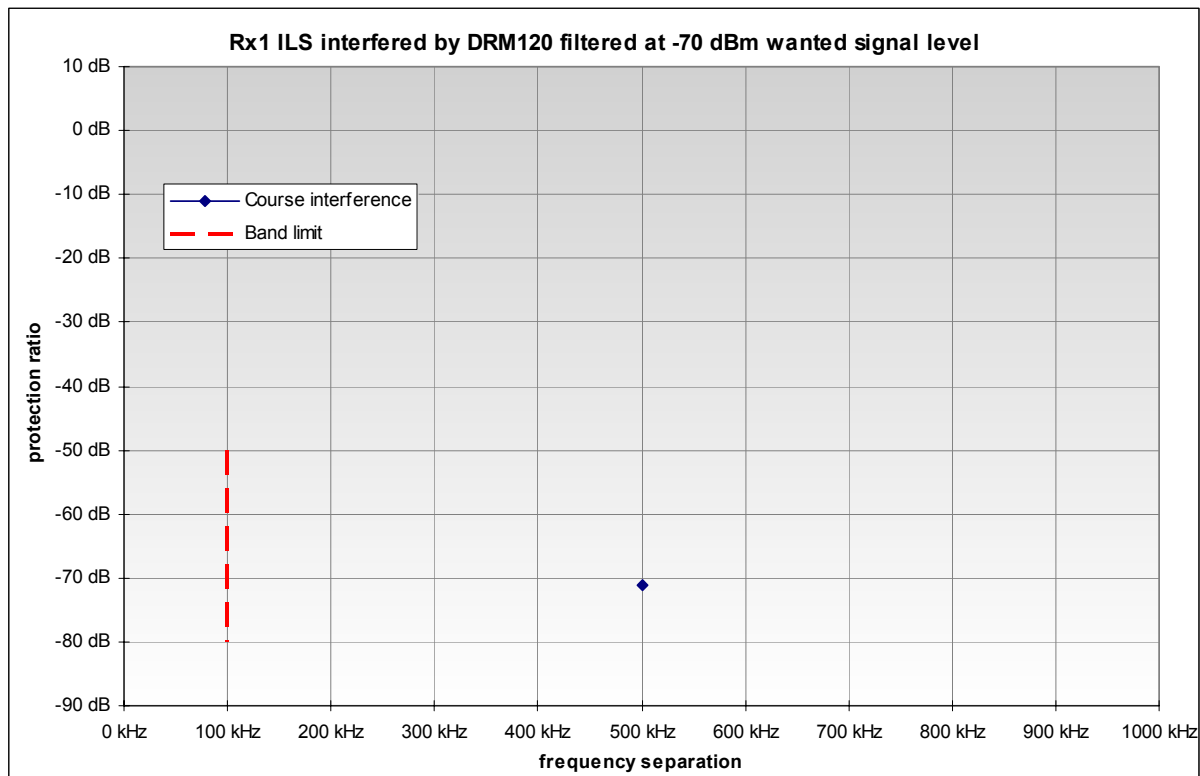
**Rx:** **1**  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

**Unwanted:** **DRM120 with output filter**  
 Frequency: (variable) (center)  
 Full level: 1 dBm at 0 dB atten.

**Wanted:** **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: -70 dBm

**Criteria:** **DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz		> 1 dBm	< -87 dB		> 1 dBm	< -87 dB
107,850 MHz	250 kHz		> 1 dBm	< -87 dB			
107,800 MHz	300 kHz		> 1 dBm	< -87 dB			
107,600 MHz	500 kHz	0 dB	1 dBm	-71 dB			
107,100 MHz	1000 kHz		> 1 dBm	< -87 dB			



### 3 DRM+ as the interferer

#### 3.1 DRM+ -> FM broadcast reception

Rx: 1 (home stereo rack)

Unwanted: **DRM+** without power amp.

Frequency: variable

Full level: -11 dBm at 0 dB atten.

Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

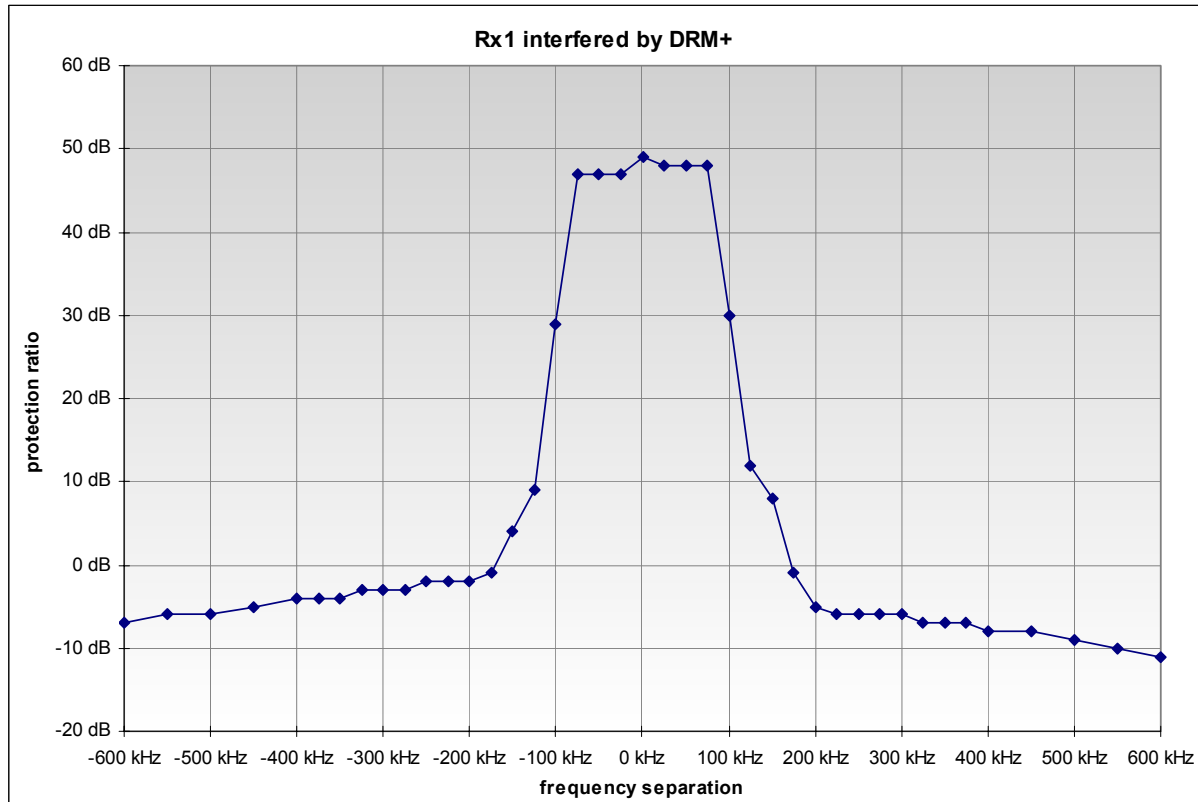
Frequency: 87,600 MHz

Level: -51 dBm

Criteria: **DRM+-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		DRM+ atten.	DRM+ Le- vel	prot. ratio
87,000 MHz	-600 kHz	33 dB	-44 dBm	-7 dB
87,050 MHz	-550 kHz	34 dB	-45 dBm	-6 dB
87,100 MHz	-500 kHz	34 dB	-45 dBm	-6 dB
87,150 MHz	-450 kHz	35 dB	-46 dBm	-5 dB
87,200 MHz	-400 kHz	36 dB	-47 dBm	-4 dB
87,225 MHz	-375 kHz	36 dB	-47 dBm	-4 dB
87,250 MHz	-350 kHz	36 dB	-47 dBm	-4 dB
87,275 MHz	-325 kHz	37 dB	-48 dBm	-3 dB
87,300 MHz	-300 kHz	37 dB	-48 dBm	-3 dB
87,325 MHz	-275 kHz	37 dB	-48 dBm	-3 dB
87,350 MHz	-250 kHz	38 dB	-49 dBm	-2 dB
87,375 MHz	-225 kHz	38 dB	-49 dBm	-2 dB
87,400 MHz	-200 kHz	38 dB	-49 dBm	-2 dB
87,425 MHz	-175 kHz	39 dB	-50 dBm	-1 dB
87,450 MHz	-150 kHz	44 dB	-55 dBm	4 dB
87,475 MHz	-125 kHz	49 dB	-60 dBm	9 dB
87,500 MHz	-100 kHz	69 dB	-80 dBm	29 dB
87,525 MHz	-75 kHz	87 dB	-98 dBm	47 dB
87,550 MHz	-50 kHz	87 dB	-98 dBm	47 dB
87,575 MHz	-25 kHz	87 dB	-98 dBm	47 dB
87,600 MHz	0 kHz	89 dB	-100 dBm	49 dB
87,625 MHz	25 kHz	88 dB	-99 dBm	48 dB
87,650 MHz	50 kHz	88 dB	-99 dBm	48 dB
87,675 MHz	75 kHz	88 dB	-99 dBm	48 dB
87,700 MHz	100 kHz	70 dB	-81 dBm	30 dB
87,725 MHz	125 kHz	52 dB	-63 dBm	12 dB
87,750 MHz	150 kHz	48 dB	-59 dBm	8 dB
87,775 MHz	175 kHz	39 dB	-50 dBm	-1 dB
87,800 MHz	200 kHz	35 dB	-46 dBm	-5 dB
87,825 MHz	225 kHz	34 dB	-45 dBm	-6 dB
87,850 MHz	250 kHz	34 dB	-45 dBm	-6 dB
87,875 MHz	275 kHz	34 dB	-45 dBm	-6 dB
87,900 MHz	300 kHz	34 dB	-45 dBm	-6 dB
87,925 MHz	325 kHz	33 dB	-44 dBm	-7 dB
87,950 MHz	350 kHz	33 dB	-44 dBm	-7 dB
87,975 MHz	375 kHz	33 dB	-44 dBm	-7 dB
88,000 MHz	400 kHz	32 dB	-43 dBm	-8 dB
88,050 MHz	450 kHz	32 dB	-43 dBm	-8 dB
88,100 MHz	500 kHz	31 dB	-42 dBm	-9 dB
88,150 MHz	550 kHz	30 dB	-41 dBm	-10 dB

88,200 MHz | 600 kHz | 29 dB | -40 dBm | -11 dB |

**Remarks:**

This measurement was made without the final power amplifier at the DRM+ output. Although this setup produces lower sideband emissions, it is best to compare with the protection ratios against DRM120 for assessment of the influence of the CREST factor.

### 3.2 DRM+ -> Narrowband FM / BOS reception

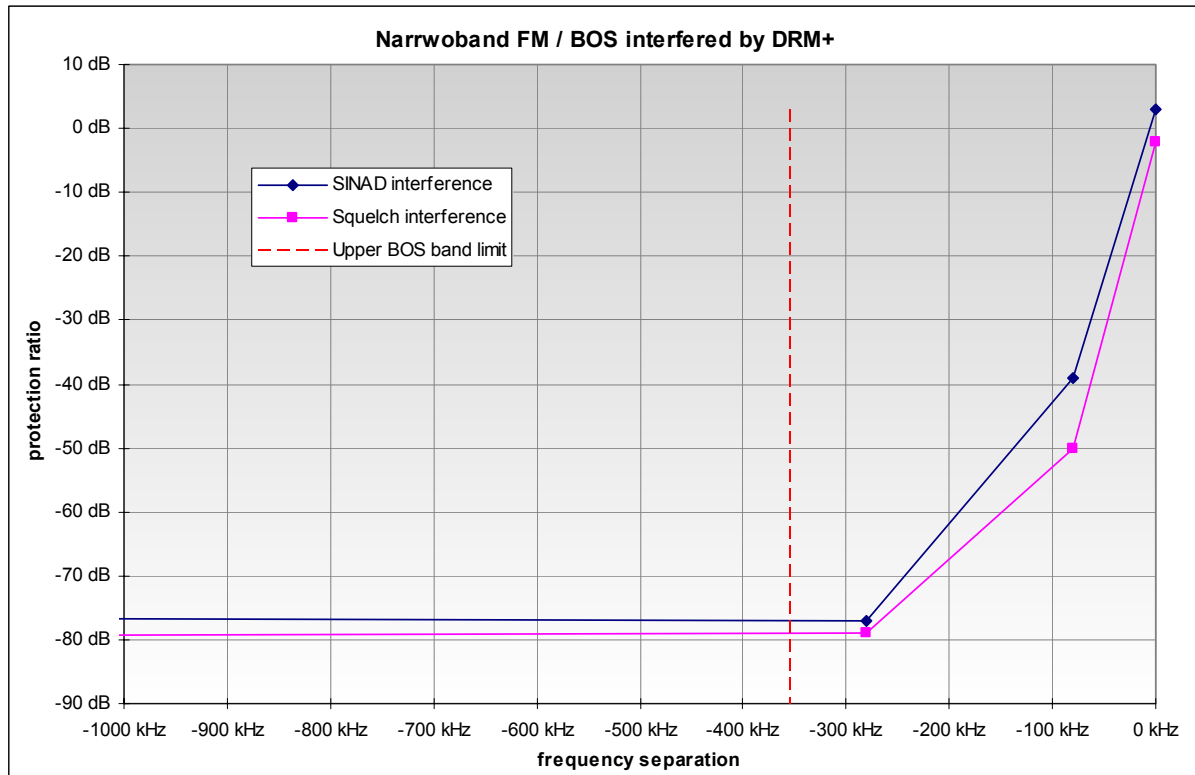
**Rx:** 4  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -114 dBm  
 Squelch sensitivity: -115 dBm

**Unwanted:** **DRM+**  
 Frequency: 87,255 MHz (center)  
 Full level: -6 dBm at 0 dB atten.

**Wanted:** 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -104 dBm  
 Level for squelch: -105 dBm

**Criteria:** **DRM-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and DRM signal present ("squelch interference")**  
**DRM signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			SINAD Interference			Squelch opens	
		DRM at-ten.	level	prot. ratio	DRM-atten.	DRM level	prot. ratio	DRM atten.	level
87,255 MHz	0 kHz	101 dB	-107 dBm	3 dB	97 dB	-103 dBm	-2 dB	-	-
87,175 MHz	-80 kHz	59 dB	-65 dBm	-39 dB	49 dB	-55 dBm	-50 dB	-	-
86,975 MHz	-280 kHz	21 dB	-27 dBm	-77 dB	20 dB	-26 dBm	-79 dB	-	-
84,575 MHz	-2680 kHz	22 dB	-28 dBm	-76 dB	19 dB	-25 dBm	-80 dB	-	-



### 3.3 DRM+ -> VOR reception

Rx: 1

Undist. Course dev.: +/-2.25 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1

Sensitivity Course: -98 dBm

Sensitivity Flag: -107 dBm

Unwanted: **DRM+**

Frequency: (variable) (center)

Full level: 3 dBm at 0 dB atten.

Wanted: **VOR**

Frequency: 108,0 MHz

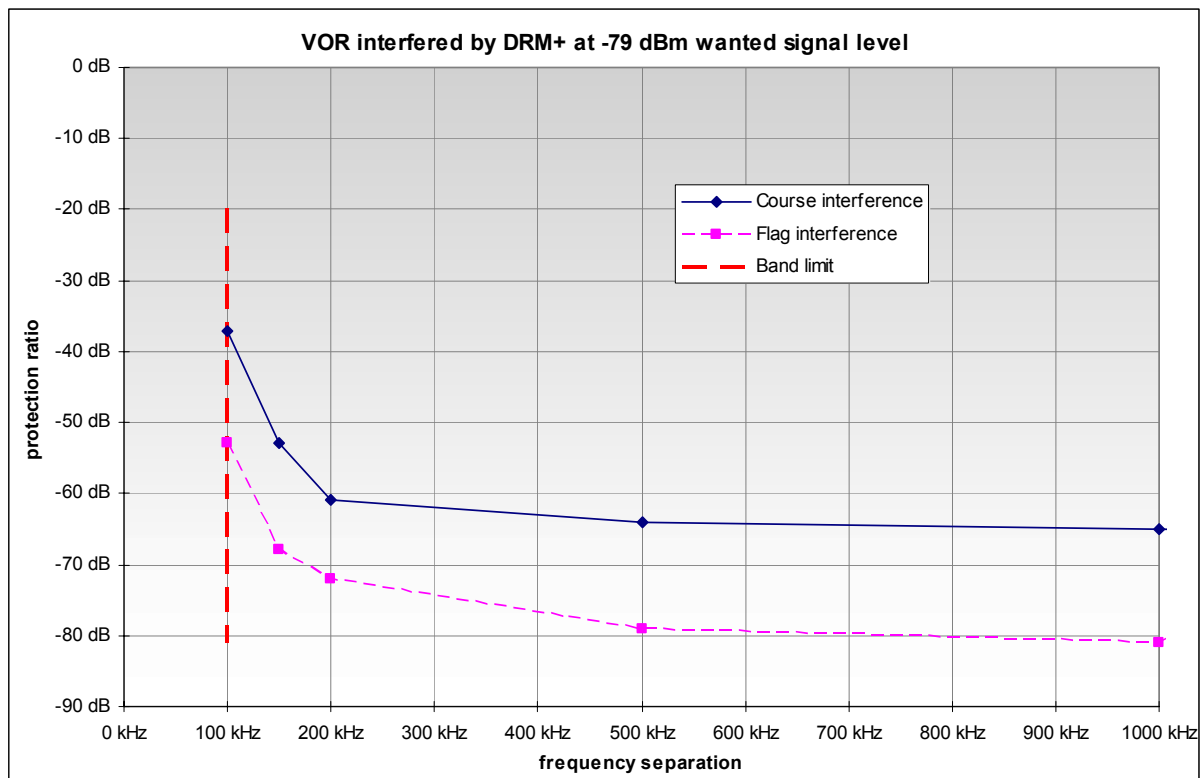
Level: **-79 dBm**

**DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**

Criteria:

**DRM-Signal shows flag ("Flag interference")**

unwanted frequency		Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	
107,900 MHz	100 kHz	45 dB	-42 dBm	-37 dB	29 dB	-26 dBm	-53 dB
107,850 MHz	150 kHz	29 dB	-26 dBm	-53 dB	14 dB	-11 dBm	-68 dB
107,800 MHz	200 kHz	21 dB	-18 dBm	-61 dB	10 dB	-7 dBm	-72 dB
107,500 MHz	500 kHz	18 dB	-15 dBm	-64 dB	3 dB	0 dBm	-79 dB
107,000 MHz	1000 kHz	17 dB	-14 dBm	-65 dB	1 dB	2 dBm	-81 dB
106,000 MHz	2000 kHz	16 dB	-13 dBm	-66 dB		> 3 dBm	< -82 dB
105,000 MHz	3000 kHz	12 dB	-9 dBm	-70 dB		> 3 dBm	< -82 dB
103,000 MHz	5000 kHz	17 dB	-14 dBm	-65 dB	4 dB	-1 dBm	-78 dB
102,900 MHz	5100 kHz	14 dB	-11 dBm	-68 dB	-	> 3 dBm	< -82 dB



Rx: **1**  
 Undist. Course dev.: +/-2,25 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

Unwanted: **DRM+**  
 Frequency: (variable) (center)  
 Full level: 3 dBm at 0 dB atten.

Wanted: **VOR**  
 Frequency: 108,0 MHz  
 Level: **-63 dBm**

Criteria: **DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	100 kHz	31 dB	-28 dBm	-35 dB	14 dB	-11 dBm	-52 dB
107,850 MHz	150 kHz	15 dB	-12 dBm	-51 dB	2 dB	1 dBm	-64 dB
105,000 MHz	3000 kHz	0 dB	3 dBm	-66 dB		> 1 dBm	< -64 dB

### 3.4 DRM+ -> ILS localizer reception

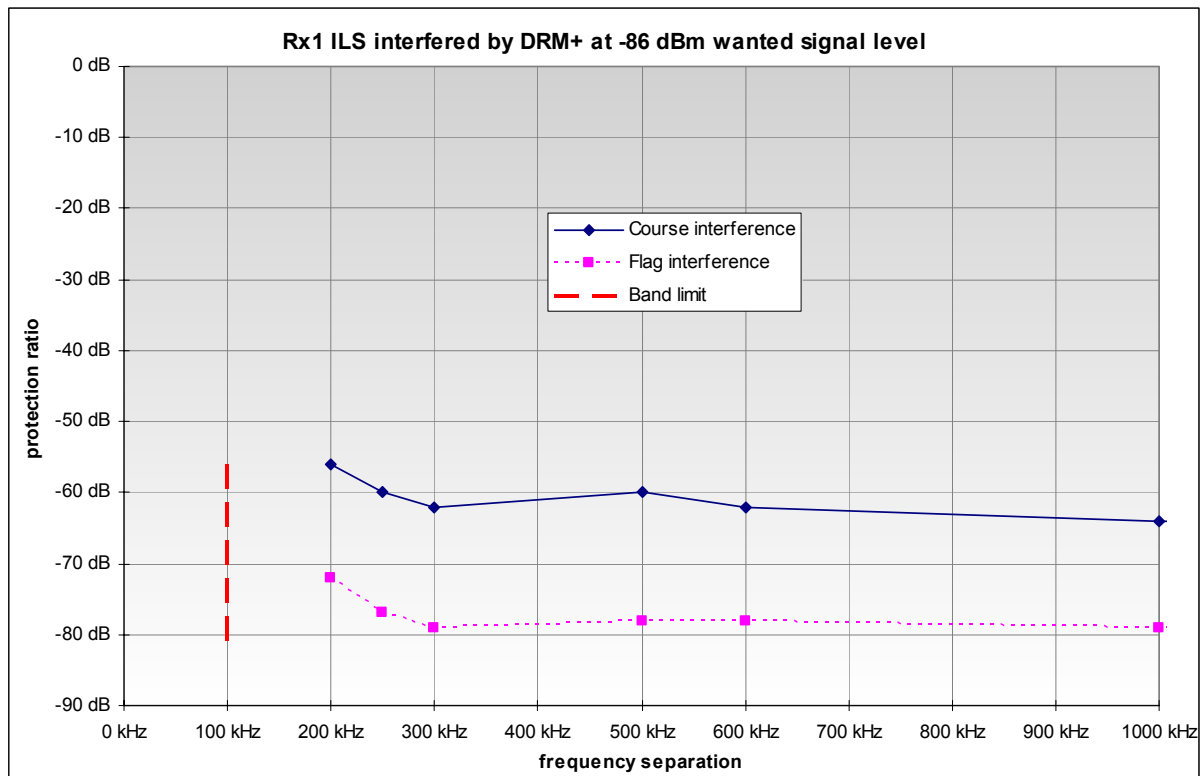
Rx: **1** equals to 2 Sigma course deviation according to Rec IS.1140  
 Undist. Course dev.: +/-2.25 mV 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

Unwanted: **DRM+**  
 Frequency: (variable) (center)  
 Full level: 3 dBm at 0 dB atten.

Wanted: **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: **-86 dBm**

Criteria: **DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	33 dB	-30 dBm	-56 dB	17 dB	-14 dBm	-72 dB
107,850 MHz	250 kHz	29 dB	-26 dBm	-60 dB	12 dB	-9 dBm	-77 dB
107,800 MHz	300 kHz	27 dB	-24 dBm	-62 dB	10 dB	-7 dBm	-79 dB
107,600 MHz	500 kHz	29 dB	-26 dBm	-60 dB	11 dB	-8 dBm	-78 dB
107,500 MHz	600 kHz	27 dB	-24 dBm	-62 dB	11 dB	-8 dBm	-78 dB
107,100 MHz	1000 kHz	25 dB	-22 dBm	-64 dB	10 dB	-7 dBm	-79 dB
106,100 MHz	2000 kHz	26 dB	-23 dBm	-63 dB	8 dB	-5 dBm	-81 dB
103,100 MHz	5000 kHz	22 dB	-19 dBm	-67 dB	13 dB	-10 dBm	-76 dB



Rx: **1** equals to 2 Sigma course deviation according to Rec IS.1140  
 Undist. Course dev.: +/-2.25 mV 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

Unwanted: **DRM+**  
 Frequency: (variable) (center)  
 Full level: 3 dBm at 0 dB atten.

Wanted: **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: **-70 dBm**

Criteria: **DRM-Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**DRM-Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		DRM atten.	DRM level	prot. ratio	DRM-atten.	DRM level	prot. ratio
107,900 MHz	200 kHz	17 dB	-14 dBm	-56 dB	0 dB	3 dBm	-73 dB
103,100 MHz	5000 kHz	7 dB	-4 dBm	-66 dB	-	> 3 dBm	< -73 dB



## 4 HD-Radio as the interferer

### 4.1 HD-Radio -> FM stereo reception

Rx: (all)

Unwanted: **HD Radio in Hybrid Mode**

Frequency: variable

Full level: -10 dBm at 0 dB atten.

no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Wanted:

Frequency: 87,600 MHz

Level for Rx1: -52 dBm

Level for Rx2: -46 dBm

Level for Rx3: -46 dBm

Level for Rx4: -55 dBm

Level for Rx5: -35 dBm

Criteria: **HD Radio-Signal degrades S/N to 50 dB ("S/N interference")**

Wanted frequency	freq.-differ.	Rx1	Rx2	Rx3		Rx5	ITU-R BS.412
87,000 MHz	-600 kHz	-22 dB	-32 dB	-22 dB	-20 dB	-19 dB	
87,050 MHz	-550 kHz	-22 dB	-31 dB	-20 dB	-18 dB	-18 dB	
87,100 MHz	-500 kHz	-22 dB	-29 dB	-18 dB	-19 dB	-15 dB	
87,150 MHz	-450 kHz	-22 dB	-28 dB	-17 dB	-17 dB	-12 dB	
87,200 MHz	-400 kHz	-20 dB	-28 dB	-14 dB	-16 dB	-10 dB	-20 dB
87,250 MHz	-350 kHz	-18 dB	-26 dB	-12 dB	-13 dB	-8 dB	-15 dB
87,300 MHz	-300 kHz	-15 dB	-25 dB	-10 dB	-11 dB	-1 dB	-7 dB
87,350 MHz	-250 kHz	6 dB	5 dB	8 dB	7 dB	4 dB	-2 dB
87,380 MHz	-220 kHz	22 dB	23 dB	24 dB	23 dB	21 dB	2 dB
87,400 MHz	-200 kHz	22 dB	23 dB	25 dB	23 dB	21 dB	7 dB
87,420 MHz	-180 kHz	23 dB	23 dB	25 dB	24 dB	21 dB	11 dB
87,450 MHz	-150 kHz	25 dB	23 dB	27 dB	25 dB	23 dB	18 dB
87,470 MHz	-130 kHz	25 dB	25 dB	26 dB	25 dB	26 dB	25 dB
87,500 MHz	-100 kHz	35 dB	35 dB	38 dB	34 dB	34 dB	33 dB
87,520 MHz	-80 kHz	44 dB	43 dB	43 dB	41 dB	42 dB	45 dB
87,550 MHz	-50 kHz	49 dB	48 dB	47 dB	43 dB	52 dB	51 dB
87,570 MHz	-30 kHz	48 dB	48 dB	48 dB	46 dB	53 dB	51 dB
87,600 MHz	0 kHz	46 dB	44 dB	44 dB	43 dB	45 dB	45 dB
87,630 MHz	30 kHz	49 dB	48 dB	48 dB	46 dB	53 dB	51 dB
87,650 MHz	50 kHz	50 dB	48 dB	49 dB	47 dB	50 dB	51 dB
87,680 MHz	80 kHz	45 dB	40 dB	40 dB	40 dB	40 dB	45 dB
87,700 MHz	100 kHz	36 dB	31 dB	31 dB	31 dB	29 dB	33 dB
87,730 MHz	130 kHz	24 dB	23 dB	24 dB	24 dB	23 dB	25 dB
87,750 MHz	150 kHz	23 dB	22 dB	24 dB	23 dB	20 dB	18 dB
87,780 MHz	180 kHz	25 dB	23 dB	25 dB	23 dB	22 dB	11 dB
87,800 MHz	200 kHz	24 dB	23 dB	25 dB	23 dB	21 dB	7 dB
87,820 MHz	220 kHz	24 dB	24 dB	24 dB	23 dB	21 dB	2 dB
87,850 MHz	250 kHz	7 dB	7 dB	6 dB	7 dB	4 dB	-2 dB
87,900 MHz	300 kHz	-13 dB	-21 dB	-18 dB	-17 dB	-2 dB	-7 dB
87,950 MHz	350 kHz	-19 dB	-24 dB	-23 dB	-25 dB	-8 dB	-15 dB
88,000 MHz	400 kHz	-20 dB	-24 dB	-24 dB	-26 dB	-10 dB	-20 dB
88,050 MHz	450 kHz	-22 dB	-26 dB	-27 dB	-29 dB	-15 dB	
88,200 MHz	600 kHz	-24 dB	-26 dB	-28 dB	-29 dB	-18 dB	
89,200 MHz	1600 kHz	-25 dB	-28 dB	-30 dB	-31 dB	-28 dB	
90,200 MHz	2600 kHz	-25 dB	-29 dB	-30 dB	-31 dB	-31 dB	

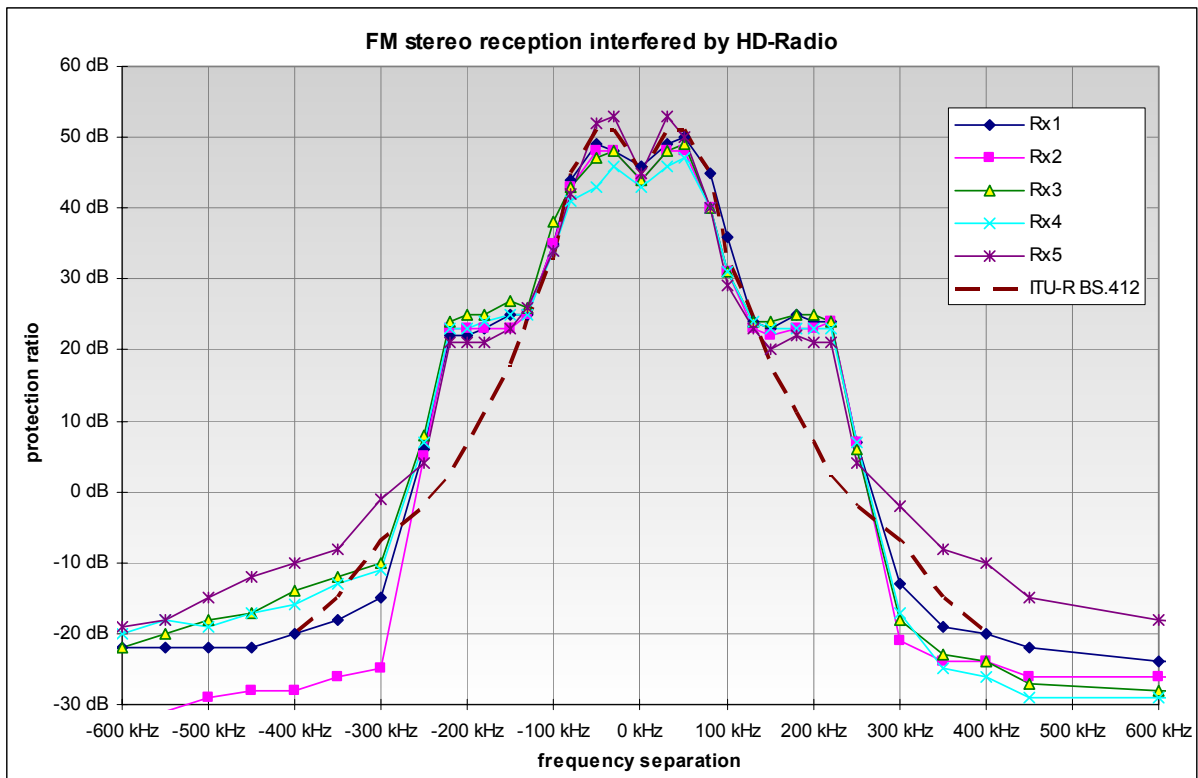


Table and figure above contain the protection ratios for the minimum wanted signal level. The following tables and figures contain the results of additional measurements with increased wanted signal levels.

Rx: 4 (home hifi receiver)

Unwanted: **HD Radio in Hybrid Mode**

Frequency: variable

Full level: -4 dBm at 0 dB atten.

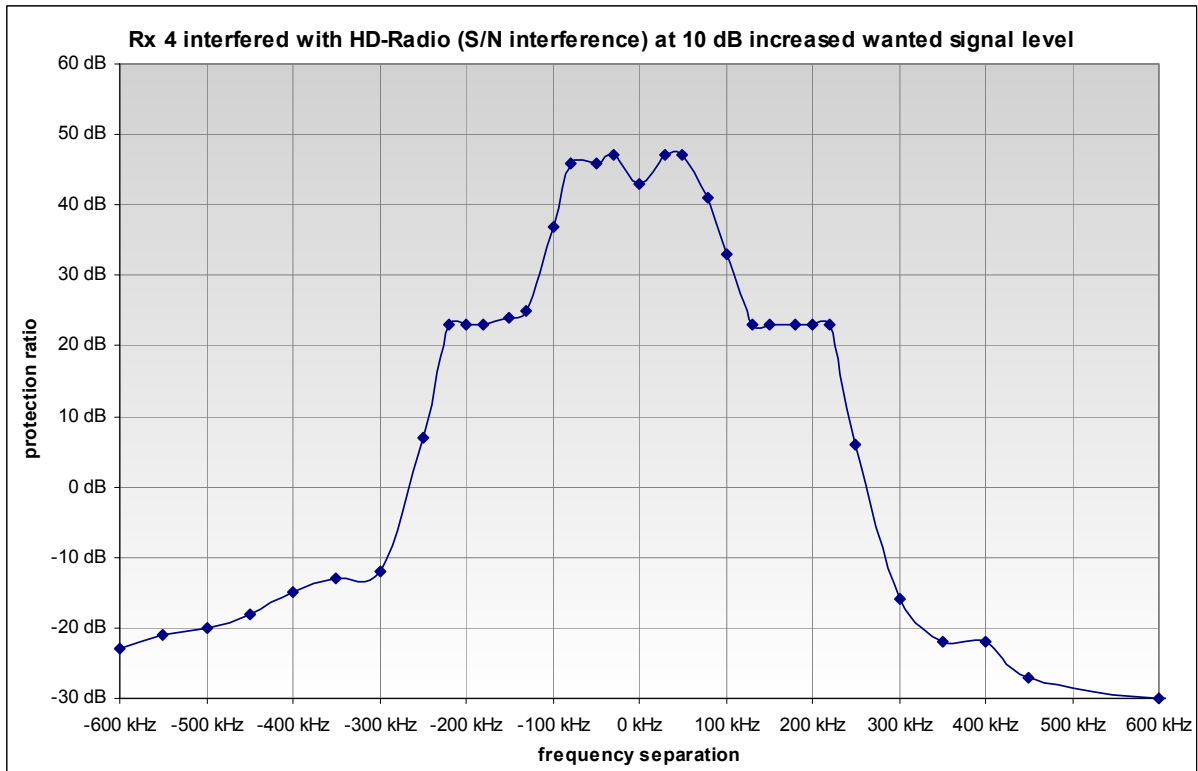
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-45 dBm**

Criteria: **FM Radio-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		HD-R atten.	HD-R level	prot. ratio
87,000 MHz	-600 kHz	18 dB	-22 dBm	-23 dB
87,050 MHz	-550 kHz	20 dB	-24 dBm	-21 dB
87,100 MHz	-500 kHz	21 dB	-25 dBm	-20 dB
87,150 MHz	-450 kHz	23 dB	-27 dBm	-18 dB
87,200 MHz	-400 kHz	26 dB	-30 dBm	-15 dB
87,250 MHz	-350 kHz	28 dB	-32 dBm	-13 dB
87,300 MHz	-300 kHz	29 dB	-33 dBm	-12 dB
87,350 MHz	-250 kHz	48 dB	-52 dBm	7 dB
87,380 MHz	-220 kHz	64 dB	-68 dBm	23 dB
87,400 MHz	-200 kHz	64 dB	-68 dBm	23 dB
87,420 MHz	-180 kHz	64 dB	-68 dBm	23 dB
87,450 MHz	-150 kHz	65 dB	-69 dBm	24 dB
87,470 MHz	-130 kHz	66 dB	-70 dBm	25 dB
87,500 MHz	-100 kHz	78 dB	-82 dBm	37 dB
87,520 MHz	-80 kHz	87 dB	-91 dBm	46 dB
87,550 MHz	-50 kHz	87 dB	-91 dBm	46 dB
87,570 MHz	-30 kHz	88 dB	-92 dBm	47 dB
87,600 MHz	0 kHz	84 dB	-88 dBm	43 dB
87,630 MHz	30 kHz	88 dB	-92 dBm	47 dB
87,650 MHz	50 kHz	88 dB	-92 dBm	47 dB
87,680 MHz	80 kHz	82 dB	-86 dBm	41 dB
87,700 MHz	100 kHz	74 dB	-78 dBm	33 dB
87,730 MHz	130 kHz	64 dB	-68 dBm	23 dB
87,750 MHz	150 kHz	64 dB	-68 dBm	23 dB
87,780 MHz	180 kHz	64 dB	-68 dBm	23 dB
87,800 MHz	200 kHz	64 dB	-68 dBm	23 dB
87,820 MHz	220 kHz	64 dB	-68 dBm	23 dB
87,850 MHz	250 kHz	47 dB	-51 dBm	6 dB
87,900 MHz	300 kHz	25 dB	-29 dBm	-16 dB
87,950 MHz	350 kHz	19 dB	-23 dBm	-22 dB
88,000 MHz	400 kHz	19 dB	-23 dBm	-22 dB
88,050 MHz	450 kHz	14 dB	-18 dBm	-27 dB
88,200 MHz	600 kHz	11 dB	-15 dBm	-30 dB
89,200 MHz	1600 kHz	9 dB	-13 dBm	-32 dB
90,200 MHz	2600 kHz	9 dB	-13 dBm	-32 dB



Rx: 4 (home hifi receiver)

Unwanted: **HD Radio in Hybrid Mode**

Frequency: variable

Full level: -4 dBm at 0 dB atten.

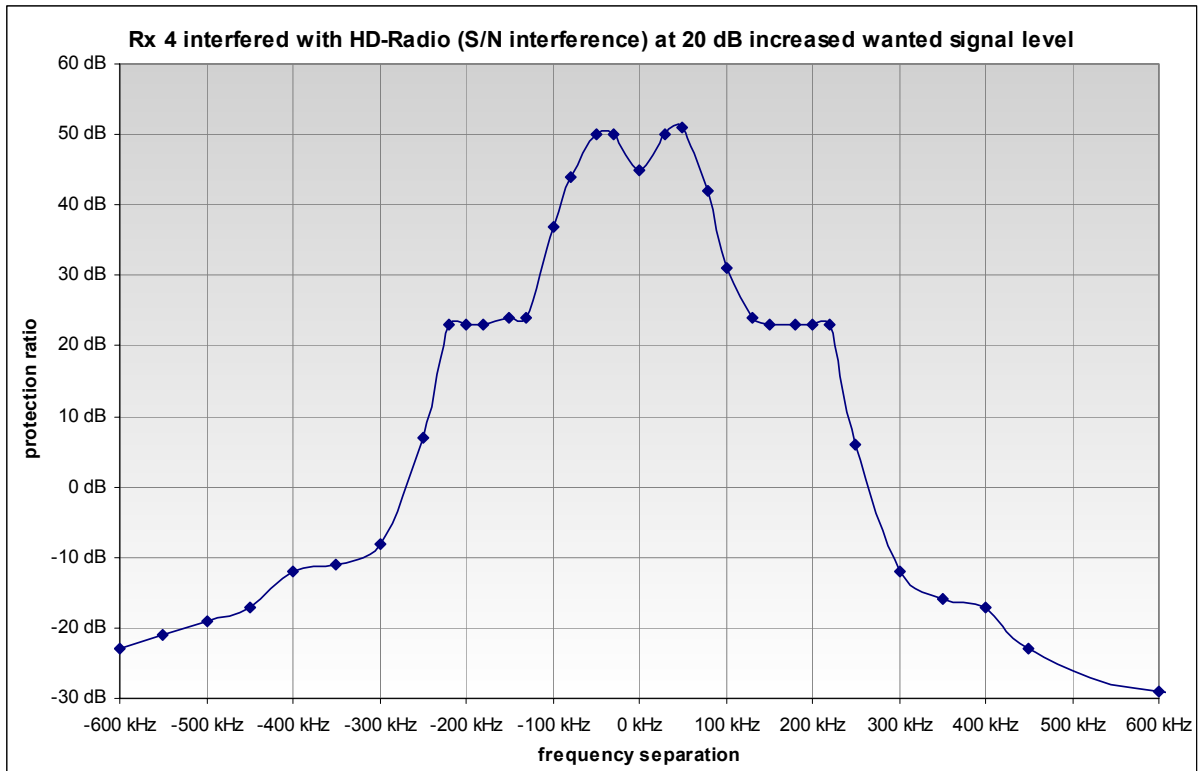
Wanted: no AF signal, stereo mode (reference S/N = 500 Hz AF with 75 kHz deviation)

Frequency: 87,600 MHz

Level: **-35 dBm**

Criteria: **FM Radio-Signal degrades S/N to 50 dB ("S/N interference")**

unwanted frequency	freq.-differ.	S/N Interference		
		HD-R atten.	HD-R level	prot. ratio
87,000 MHz	-600 kHz	8 dB	-12 dBm	-23 dB
87,050 MHz	-550 kHz	10 dB	-14 dBm	-21 dB
87,100 MHz	-500 kHz	12 dB	-16 dBm	-19 dB
87,150 MHz	-450 kHz	14 dB	-18 dBm	-17 dB
87,200 MHz	-400 kHz	19 dB	-23 dBm	-12 dB
87,250 MHz	-350 kHz	20 dB	-24 dBm	-11 dB
87,300 MHz	-300 kHz	23 dB	-27 dBm	-8 dB
87,350 MHz	-250 kHz	38 dB	-42 dBm	7 dB
87,380 MHz	-220 kHz	54 dB	-58 dBm	23 dB
87,400 MHz	-200 kHz	54 dB	-58 dBm	23 dB
87,420 MHz	-180 kHz	54 dB	-58 dBm	23 dB
87,450 MHz	-150 kHz	55 dB	-59 dBm	24 dB
87,470 MHz	-130 kHz	55 dB	-59 dBm	24 dB
87,500 MHz	-100 kHz	68 dB	-72 dBm	37 dB
87,520 MHz	-80 kHz	75 dB	-79 dBm	44 dB
87,550 MHz	-50 kHz	81 dB	-85 dBm	50 dB
87,570 MHz	-30 kHz	81 dB	-85 dBm	50 dB
87,600 MHz	0 kHz	76 dB	-80 dBm	45 dB
87,630 MHz	30 kHz	81 dB	-85 dBm	50 dB
87,650 MHz	50 kHz	82 dB	-86 dBm	51 dB
87,680 MHz	80 kHz	73 dB	-77 dBm	42 dB
87,700 MHz	100 kHz	62 dB	-66 dBm	31 dB
87,730 MHz	130 kHz	55 dB	-59 dBm	24 dB
87,750 MHz	150 kHz	54 dB	-58 dBm	23 dB
87,780 MHz	180 kHz	54 dB	-58 dBm	23 dB
87,800 MHz	200 kHz	54 dB	-58 dBm	23 dB
87,820 MHz	220 kHz	54 dB	-58 dBm	23 dB
87,850 MHz	250 kHz	37 dB	-41 dBm	6 dB
87,900 MHz	300 kHz	19 dB	-23 dBm	-12 dB
87,950 MHz	350 kHz	15 dB	-19 dBm	-16 dB
88,000 MHz	400 kHz	14 dB	-18 dBm	-17 dB
88,050 MHz	450 kHz	8 dB	-12 dBm	-23 dB
88,200 MHz	600 kHz	2 dB	-6 dBm	-29 dB
89,200 MHz	1600 kHz	0 dB	-4 dBm	-31 dB
90,200 MHz	2600 kHz		> -4 dBm	< -31 dB



**Rx:** **5 (portable radio)**

**Unwanted:** **HD Radio in Hybrid Mode**

Frequency: variable

Full level: 3 dBm at 0 dB atten.

**Wanted:** **RDS-Service**

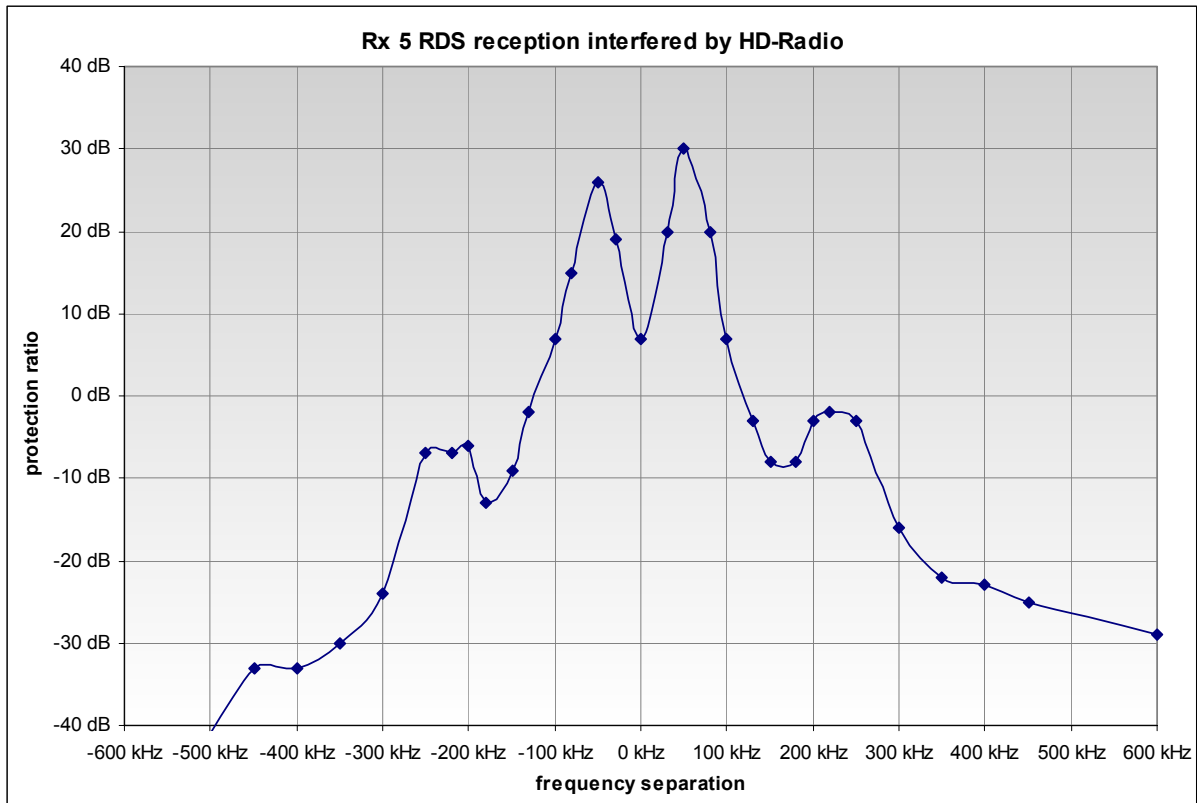
Frequency: 87,600 MHz

Level: -35 dBm

**Criteria:** **first occurrence of bit errors**

unwanted frequency	freq.-differ.	S/N Interference		
		HD-R atten.	HD-R level	prot. ratio
87,000 MHz	-600 kHz		> 3 dBm	< -38 dB
87,050 MHz	-550 kHz		> 3 dBm	< -38 dB
87,100 MHz	-500 kHz	-3 dB	6 dBm	-41 dB
87,150 MHz	-450 kHz	5 dB	-2 dBm	-33 dB
87,200 MHz	-400 kHz	5 dB	-2 dBm	-33 dB
87,250 MHz	-350 kHz	8 dB	-5 dBm	-30 dB
87,300 MHz	-300 kHz	14 dB	-11 dBm	-24 dB
87,350 MHz	-250 kHz	31 dB	-28 dBm	-7 dB
87,380 MHz	-220 kHz	31 dB	-28 dBm	-7 dB
87,400 MHz	-200 kHz	32 dB	-29 dBm	-6 dB
87,420 MHz	-180 kHz	25 dB	-22 dBm	-13 dB
87,450 MHz	-150 kHz	29 dB	-26 dBm	-9 dB
87,470 MHz	-130 kHz	36 dB	-33 dBm	-2 dB
87,500 MHz	-100 kHz	45 dB	-42 dBm	7 dB
87,520 MHz	-80 kHz	53 dB	-50 dBm	15 dB
87,550 MHz	-50 kHz	64 dB	-61 dBm	26 dB
87,570 MHz	-30 kHz	57 dB	-54 dBm	19 dB
87,600 MHz	0 kHz	45 dB	-42 dBm	7 dB
87,630 MHz	30 kHz	58 dB	-55 dBm	20 dB
87,650 MHz	50 kHz	68 dB	-65 dBm	30 dB
87,680 MHz	80 kHz	58 dB	-55 dBm	20 dB
87,700 MHz	100 kHz	45 dB	-42 dBm	7 dB
87,730 MHz	130 kHz	35 dB	-32 dBm	-3 dB
87,750 MHz	150 kHz	30 dB	-27 dBm	-8 dB
87,780 MHz	180 kHz	30 dB	-27 dBm	-8 dB
87,800 MHz	200 kHz	35 dB	-32 dBm	-3 dB
87,820 MHz	220 kHz	36 dB	-33 dBm	-2 dB
87,850 MHz	250 kHz	35 dB	-32 dBm	-3 dB
87,900 MHz	300 kHz	22 dB	-19 dBm	-16 dB
87,950 MHz	350 kHz	16 dB	-13 dBm	-22 dB
88,000 MHz	400 kHz	15 dB	-12 dBm	-23 dB
88,050 MHz	450 kHz	13 dB	-10 dBm	-25 dB
88,200 MHz	600 kHz	9 dB	-6 dBm	-29 dB
89,200 MHz	1600 kHz	1 dB	2 dBm	-37 dB
90,200 MHz	2600 kHz		> 3 dBm	< -38 dB

Remark: Sensitivity mode set to DX





Rx: **7 (car radio)**

Unwanted: **HD Radio in Hybrid Mode**

Frequency: variable

Full level: 0 dBm at 0 dB atten.

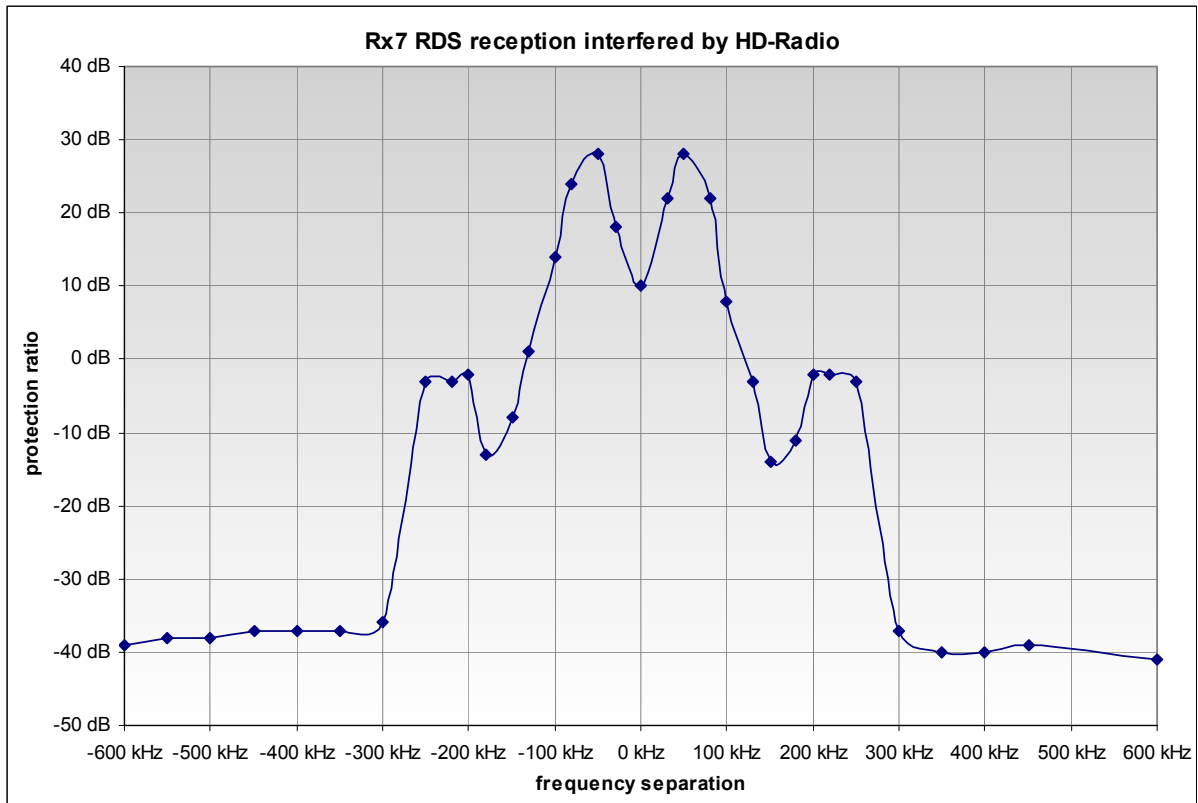
Wanted: **RDS-Service**

Frequency: 87,600 MHz

Level: -47 dBm

Criteria: **first occurrence of bit errors**

unwanted frequency	freq.-differ.	S/N Interference		
			HD-R level	prot. ratio
87,000 MHz	-600 kHz	8 dB	-8 dBm	-39 dB
87,050 MHz	-550 kHz	9 dB	-9 dBm	-38 dB
87,100 MHz	-500 kHz	9 dB	-9 dBm	-38 dB
87,150 MHz	-450 kHz	10 dB	-10 dBm	-37 dB
87,200 MHz	-400 kHz	10 dB	-10 dBm	-37 dB
87,250 MHz	-350 kHz	10 dB	-10 dBm	-37 dB
87,300 MHz	-300 kHz	11 dB	-11 dBm	-36 dB
87,350 MHz	-250 kHz	44 dB	-44 dBm	-3 dB
87,380 MHz	-220 kHz	44 dB	-44 dBm	-3 dB
87,400 MHz	-200 kHz	45 dB	-45 dBm	-2 dB
87,420 MHz	-180 kHz	34 dB	-34 dBm	-13 dB
87,450 MHz	-150 kHz	39 dB	-39 dBm	-8 dB
87,470 MHz	-130 kHz	48 dB	-48 dBm	1 dB
87,500 MHz	-100 kHz	61 dB	-61 dBm	14 dB
87,520 MHz	-80 kHz	71 dB	-71 dBm	24 dB
87,550 MHz	-50 kHz	75 dB	-75 dBm	28 dB
87,570 MHz	-30 kHz	65 dB	-65 dBm	18 dB
87,600 MHz	0 kHz	57 dB	-57 dBm	10 dB
87,630 MHz	30 kHz	69 dB	-69 dBm	22 dB
87,650 MHz	50 kHz	75 dB	-75 dBm	28 dB
87,680 MHz	80 kHz	69 dB	-69 dBm	22 dB
87,700 MHz	100 kHz	55 dB	-55 dBm	8 dB
87,730 MHz	130 kHz	44 dB	-44 dBm	-3 dB
87,750 MHz	150 kHz	33 dB	-33 dBm	-14 dB
87,780 MHz	180 kHz	36 dB	-36 dBm	-11 dB
87,800 MHz	200 kHz	45 dB	-45 dBm	-2 dB
87,820 MHz	220 kHz	45 dB	-45 dBm	-2 dB
87,850 MHz	250 kHz	44 dB	-44 dBm	-3 dB
87,900 MHz	300 kHz	10 dB	-10 dBm	-37 dB
87,950 MHz	350 kHz	7 dB	-7 dBm	-40 dB
88,000 MHz	400 kHz	7 dB	-7 dBm	-40 dB
88,050 MHz	450 kHz	8 dB	-8 dBm	-39 dB
88,200 MHz	600 kHz	6 dB	-6 dBm	-41 dB
89,200 MHz	1600 kHz	2 dB	-2 dBm	-45 dB
90,200 MHz	2600 kHz		> 0 dBm	< -47 dB



## 4.2 HD-Radio -> Narrowband FM / BOS reception

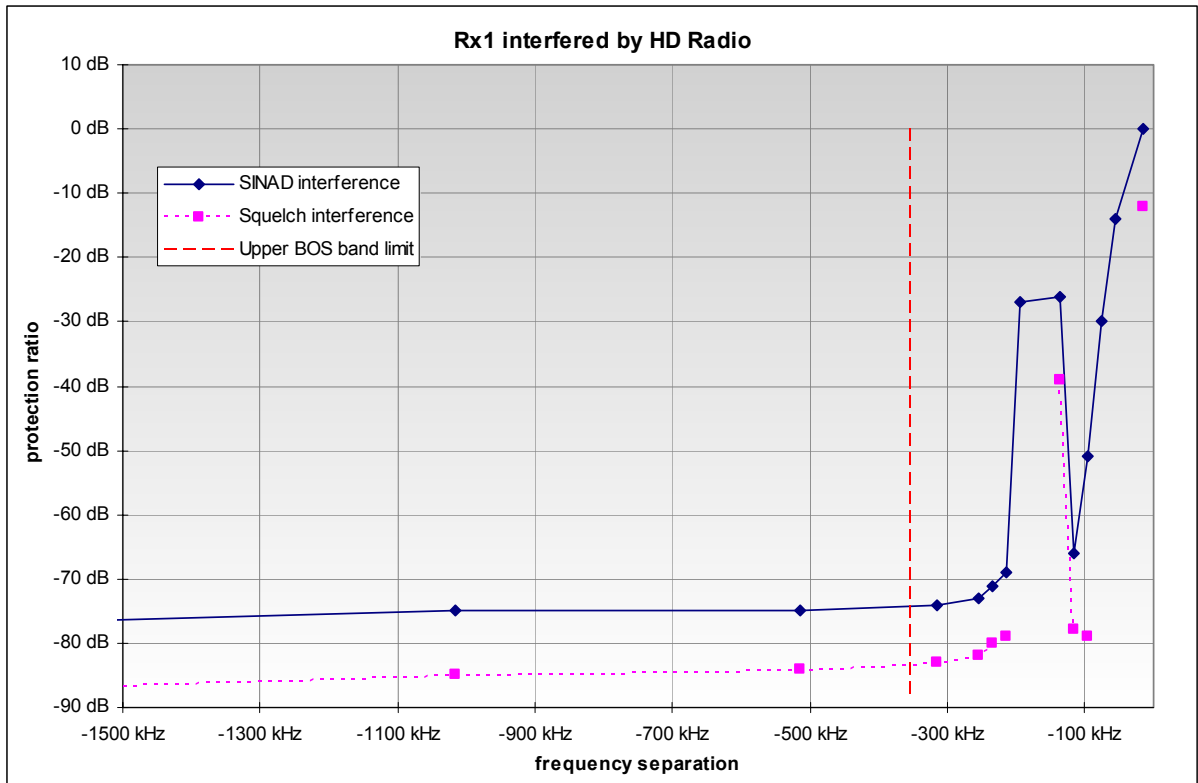
Rx: 1  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -114 dBm  
 Squelch sensitivity: -109 dBm

Unwanted: **HD Radio in Hybrid Mode**  
 Frequency: 87,250 MHz (center)  
 Full level: -3 dBm at 0 dB atten.

Wanted: 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -104 dBm  
 Level for squelch: -99 dBm

Criteria: **HD Radio-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and HD Radio signal present ("squelch interference")**  
**HD Radio signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		HD-R atten.	HD-R level	prot. ratio	HD-R. atten.	HD-R level	prot. ratio	HD-R atten.	HD-R level
87,235 MHz	-15 kHz	101 dB	-104 dBm	0 dB	84 dB	-87 dBm	-12 dB	-	-
87,195 MHz	-55 kHz	87 dB	-90 dBm	-14 dB		< -3 dBm	< -96 dB	53 dB	-56 dBm
87,175 MHz	-75 kHz	71 dB	-74 dBm	-30 dB		< -3 dBm	< -96 dB	27 dB	-30 dBm
87,155 MHz	-95 kHz	50 dB	-53 dBm	-51 dB	17 dB	-20 dBm	-79 dB	-	-
87,135 MHz	-115 kHz	35 dB	-38 dBm	-66 dB	18 dB	-21 dBm	-78 dB	-	-
87,115 MHz	-135 kHz	75 dB	-78 dBm	-26 dB	57 dB	-60 dBm	-39 dB	-	-
87,055 MHz	-195 kHz	74 dB	-77 dBm	-27 dB		< -3 dBm	< -96 dB	64 dB	-67 dBm
87,035 MHz	-215 kHz	32 dB	-35 dBm	-69 dB	17 dB	-20 dBm	-79 dB	-	-
87,015 MHz	-235 kHz	30 dB	-33 dBm	-71 dB	16 dB	-19 dBm	-80 dB	-	-
86,995 MHz	-255 kHz	28 dB	-31 dBm	-73 dB	14 dB	-17 dBm	-82 dB	-	-
86,935 MHz	-315 kHz	27 dB	-30 dBm	-74 dB	13 dB	-16 dBm	-83 dB	-	-
86,735 MHz	-515 kHz	26 dB	-29 dBm	-75 dB	12 dB	-15 dBm	-84 dB	-	-
86,235 MHz	-1015 kHz	26 dB	-29 dBm	-75 dB	11 dB	-14 dBm	-85 dB	-	-
85,235 MHz	-2015 kHz	23 dB	-26 dBm	-78 dB	8 dB	-11 dBm	-88 dB	-	-
84,235 MHz	-3015 kHz	24 dB	-27 dBm	-77 dB	7 dB	-10 dBm	-89 dB	-	-
84,035 MHz	-3215 kHz	22 dB	-25 dBm	-79 dB	7 dB	-10 dBm	-89 dB	-	-



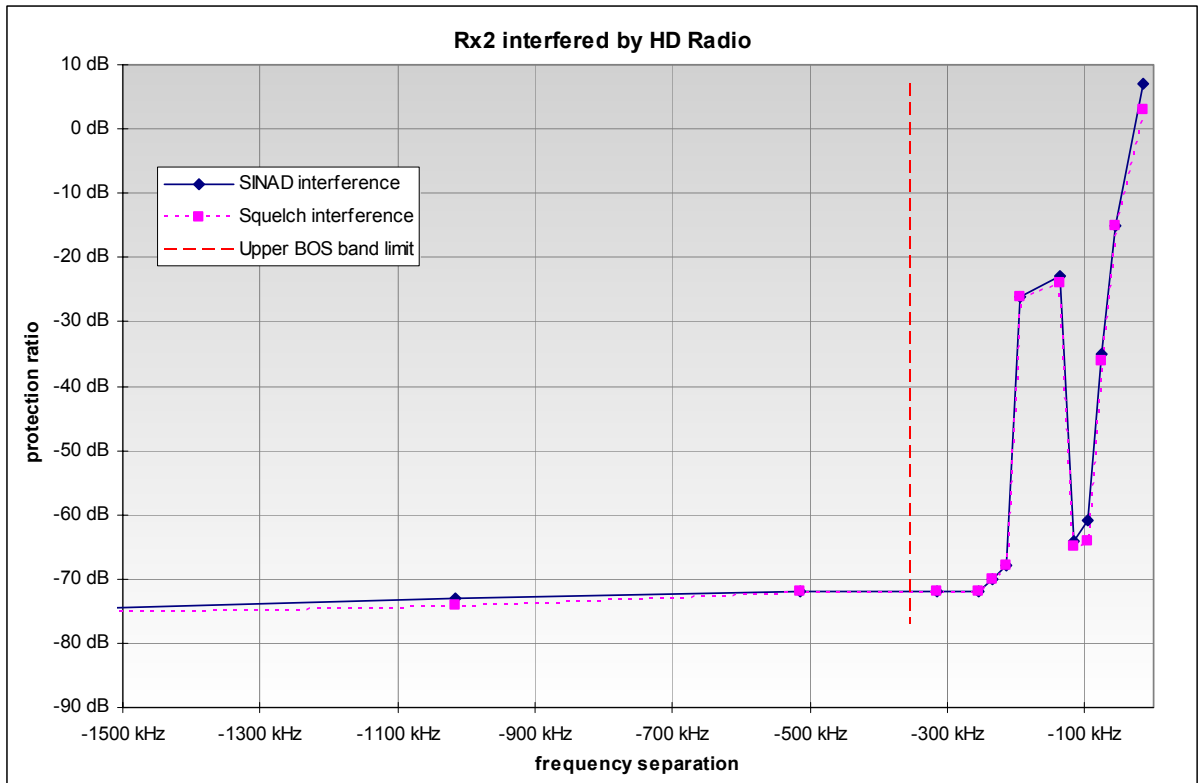
**Rx:** **2**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -114 dBm  
 Squelch sensitivity: -111 dBm

**Unwanted:** **HD Radio in Hybrid Mode**  
 Frequency: 87,250 MHz (center)  
 Full level: -3 dBm at 0 dB atten.

**Wanted:** 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -104 dBm  
 Level for squelch: -101 dBm

**Criteria:** **HD Radio-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and HD Radio signal present ("squelch interference")**  
**HD Radio signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		HD-R atten.	HD-R level	prot. ratio	HD-R. atten.	HD-R level	prot. ratio	atten.	HD-R level
87,235 MHz	-15 kHz	108 dB	-111 dBm	7 dB	101 dB	-104 dBm	3 dB	-	-
87,195 MHz	-55 kHz	86 dB	-89 dBm	-15 dB	83 dB	-86 dBm	-15 dB	-	-
87,175 MHz	-75 kHz	66 dB	-69 dBm	-35 dB	62 dB	-65 dBm	-36 dB	-	-
87,155 MHz	-95 kHz	40 dB	-43 dBm	-61 dB	34 dB	-37 dBm	-64 dB	-	-
87,135 MHz	-115 kHz	37 dB	-40 dBm	-64 dB	33 dB	-36 dBm	-65 dB	-	-
87,115 MHz	-135 kHz	78 dB	-81 dBm	-23 dB	74 dB	-77 dBm	-24 dB	-	-
87,055 MHz	-195 kHz	75 dB	-78 dBm	-26 dB	72 dB	-75 dBm	-26 dB	-	-
87,035 MHz	-215 kHz	33 dB	-36 dBm	-68 dB	30 dB	-33 dBm	-68 dB	-	-
87,015 MHz	-235 kHz	31 dB	-34 dBm	-70 dB	28 dB	-31 dBm	-70 dB	-	-
86,995 MHz	-255 kHz	29 dB	-32 dBm	-72 dB	26 dB	-29 dBm	-72 dB	-	-
86,935 MHz	-315 kHz	29 dB	-32 dBm	-72 dB	26 dB	-29 dBm	-72 dB	-	-
86,735 MHz	-515 kHz	29 dB	-32 dBm	-72 dB	26 dB	-29 dBm	-72 dB	-	-
86,235 MHz	-1015 kHz	28 dB	-31 dBm	-73 dB	24 dB	-27 dBm	-74 dB	-	-
85,235 MHz	-2015 kHz	25 dB	-28 dBm	-76 dB	22 dB	-25 dBm	-76 dB	-	-
84,235 MHz	-3015 kHz	26 dB	-29 dBm	-75 dB	21 dB	-24 dBm	-77 dB	-	-
84,035 MHz	-3215 kHz	25 dB	-28 dBm	-76 dB	21 dB	-24 dBm	-77 dB	-	-



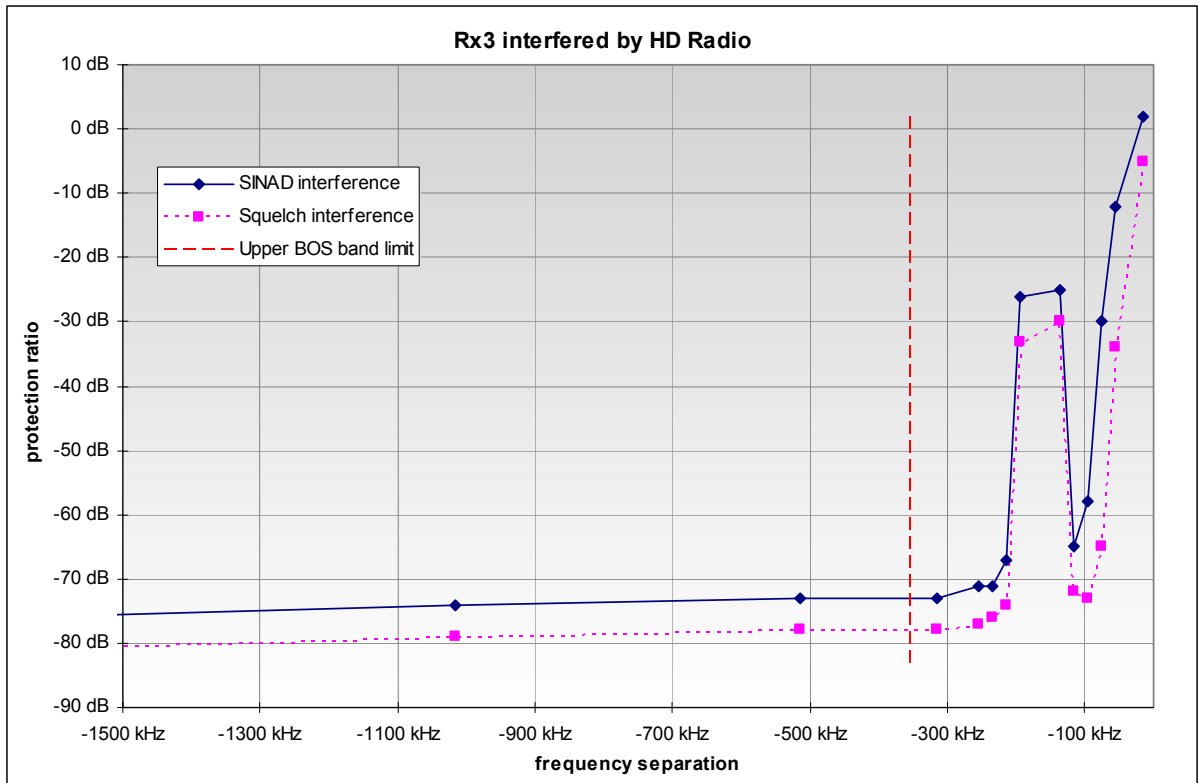
**Rx:** **3**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -116 dBm  
 Squelch sensitivity: -116 dBm

**Unwanted:** **HD Radio in Hybrid Mode**  
 Frequency: 87,250 MHz (center)  
 Full level: -3 dBm at 0 dB atten.

**Wanted:** 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -106 dBm  
 Level for squelch: -106 dBm

**Criteria:** **HD Radio-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and HD Radio signal present ("squelch interference")**  
**HD Radio signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency		SINAD Interference			Squelch Interference			Squelch opens	
		HD-R atten.	HD-R level	prot. ratio	HD-R. atten.	HD-R level	prot. ratio	HD-R atten.	HD-R level
87,235 MHz	-15 kHz	105 dB	-108 dBm	2 dB	98 dB	-101 dBm	-5 dB	-	-
87,195 MHz	-55 kHz	91 dB	-94 dBm	-12 dB	69 dB	-72 dBm	-34 dB	-	-
87,175 MHz	-75 kHz	73 dB	-76 dBm	-30 dB	38 dB	-41 dBm	-65 dB	-	-
87,155 MHz	-95 kHz	45 dB	-48 dBm	-58 dB	30 dB	-33 dBm	-73 dB	-	-
87,135 MHz	-115 kHz	38 dB	-41 dBm	-65 dB	31 dB	-34 dBm	-72 dB	-	-
87,115 MHz	-135 kHz	78 dB	-81 dBm	-25 dB	73 dB	-76 dBm	-30 dB	-	-
87,055 MHz	-195 kHz	77 dB	-80 dBm	-26 dB	70 dB	-73 dBm	-33 dB	-	-
87,035 MHz	-215 kHz	36 dB	-39 dBm	-67 dB	29 dB	-32 dBm	-74 dB	-	-
87,015 MHz	-235 kHz	32 dB	-35 dBm	-71 dB	27 dB	-30 dBm	-76 dB	-	-
86,995 MHz	-255 kHz	32 dB	-35 dBm	-71 dB	26 dB	-29 dBm	-77 dB	-	-
86,935 MHz	-315 kHz	30 dB	-33 dBm	-73 dB	25 dB	-28 dBm	-78 dB	-	-
86,735 MHz	-515 kHz	30 dB	-33 dBm	-73 dB	25 dB	-28 dBm	-78 dB	-	-
86,235 MHz	-1015 kHz	29 dB	-32 dBm	-74 dB	24 dB	-27 dBm	-79 dB	-	-
85,235 MHz	-2015 kHz	26 dB	-29 dBm	-77 dB	21 dB	-24 dBm	-82 dB	-	-
84,235 MHz	-3015 kHz	25 dB	-28 dBm	-78 dB	21 dB	-24 dBm	-82 dB	-	-
84,035 MHz	-3215 kHz	25 dB	-28 dBm	-78 dB	20 dB	-23 dBm	-83 dB	-	-





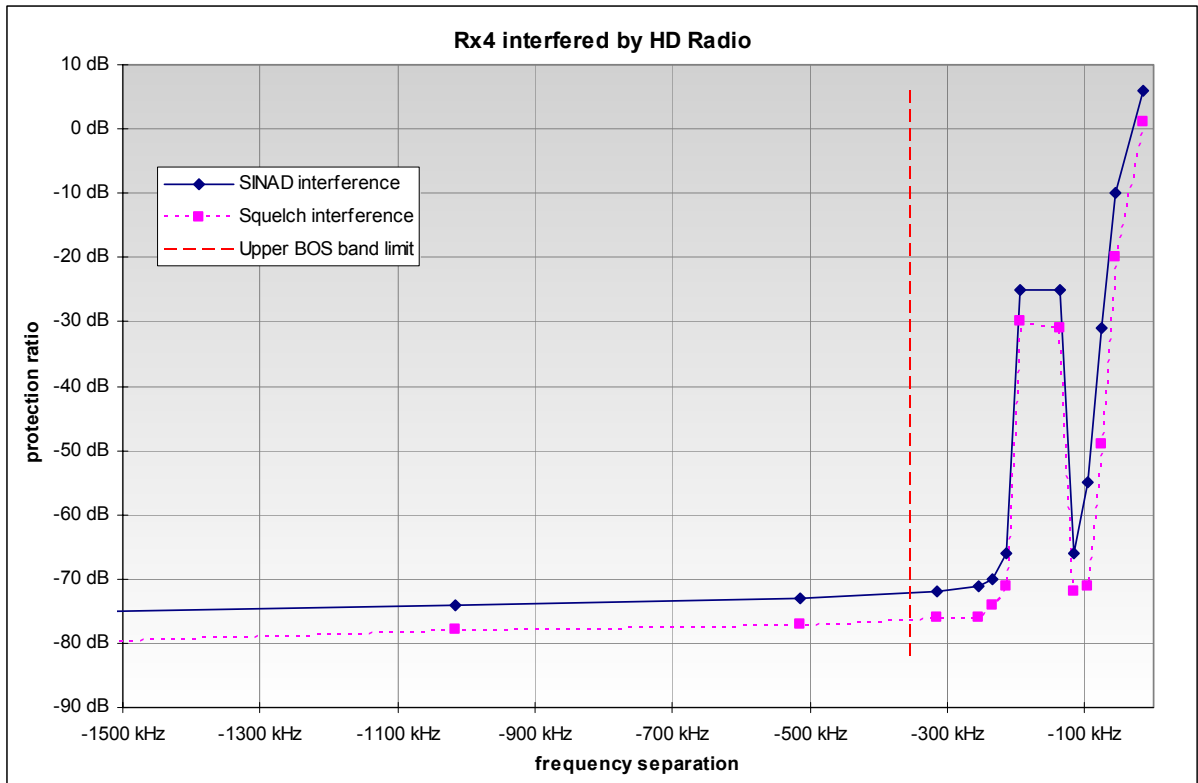
**Rx:** **4**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -113 dBm  
 Squelch sensitivity: -114 dBm

**Unwanted:** **HD Radio in Hybrid Mode**  
 Frequency: 87,250 MHz (center)  
 Full level: -3 dBm at 0 dB atten.

**Wanted:** 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -103 dBm  
 Level for squelch: -104 dBm

**Criteria:** **HD Radio-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and HD Radio signal present ("squelch interference")**  
**HD Radio signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		HD-R atten.	HD-R level	prot. ratio	HD-R. atten.	HD-R level	prot. ratio	HD-R atten.	HD-R level
87,235 MHz	-15 kHz	106 dB	-109 dBm	6 dB	102 dB	-105 dBm	1 dB	-	-
87,195 MHz	-55 kHz	90 dB	-93 dBm	-10 dB	81 dB	-84 dBm	-20 dB	-	-
87,175 MHz	-75 kHz	69 dB	-72 dBm	-31 dB	52 dB	-55 dBm	-49 dB	-	-
87,155 MHz	-95 kHz	45 dB	-48 dBm	-55 dB	30 dB	-33 dBm	-71 dB	-	-
87,135 MHz	-115 kHz	34 dB	-37 dBm	-66 dB	29 dB	-32 dBm	-72 dB	-	-
87,115 MHz	-135 kHz	75 dB	-78 dBm	-25 dB	70 dB	-73 dBm	-31 dB	-	-
87,055 MHz	-195 kHz	75 dB	-78 dBm	-25 dB	71 dB	-74 dBm	-30 dB	-	-
87,035 MHz	-215 kHz	34 dB	-37 dBm	-66 dB	30 dB	-33 dBm	-71 dB	-	-
87,015 MHz	-235 kHz	30 dB	-33 dBm	-70 dB	27 dB	-30 dBm	-74 dB	-	-
86,995 MHz	-255 kHz	29 dB	-32 dBm	-71 dB	25 dB	-28 dBm	-76 dB	-	-
86,935 MHz	-315 kHz	28 dB	-31 dBm	-72 dB	25 dB	-28 dBm	-76 dB	-	-
86,735 MHz	-515 kHz	27 dB	-30 dBm	-73 dB	24 dB	-27 dBm	-77 dB	-	-
86,235 MHz	-1015 kHz	26 dB	-29 dBm	-74 dB	23 dB	-26 dBm	-78 dB	-	-
85,235 MHz	-2015 kHz	24 dB	-27 dBm	-76 dB	20 dB	-23 dBm	-81 dB	-	-
84,235 MHz	-3015 kHz	24 dB	-27 dBm	-76 dB	19 dB	-22 dBm	-82 dB	-	-
84,035 MHz	-3215 kHz	23 dB	-26 dBm	-77 dB	19 dB	-22 dBm	-82 dB	-	-



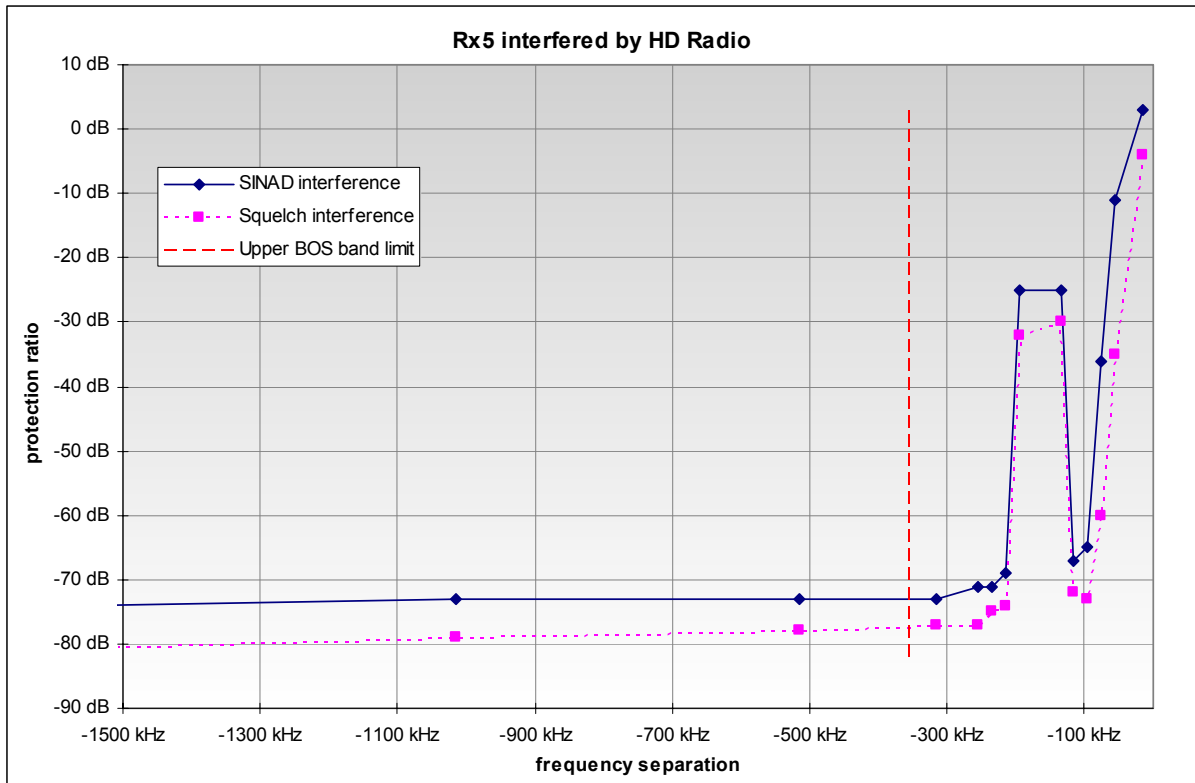
**Rx:** **5**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -114 dBm  
 Squelch sensitivity: -116 dBm

**Unwanted:** **HD Radio in Hybrid Mode**  
 Frequency: 87,250 MHz (center)  
 Full level: -3 dBm at 0 dB atten.

**Wanted:** **1 kHz AF / 2,4 kHz deviation**  
 Level for SINAD: -104 dBm  
 Level for squelch: -106 dBm

**Criteria:** **HD Radio-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and HD Radio signal present ("squelch interference")**  
**HD Radio signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		HD-R atten.	HD-R level	prot. ratio	HD-R. atten.	HD-R level	prot. ratio	HD-R atten.	HD-R level
87,235 MHz	-15 kHz	104 dB	-107 dBm	3 dB	99 dB	-102 dBm	-4 dB	-	-
87,195 MHz	-55 kHz	90 dB	-93 dBm	-11 dB	68 dB	-71 dBm	-35 dB	-	-
87,175 MHz	-75 kHz	65 dB	-68 dBm	-36 dB	43 dB	-46 dBm	-60 dB	-	-
87,155 MHz	-95 kHz	36 dB	-39 dBm	-65 dB	30 dB	-33 dBm	-73 dB	-	-
87,135 MHz	-115 kHz	34 dB	-37 dBm	-67 dB	31 dB	-34 dBm	-72 dB	-	-
87,115 MHz	-135 kHz	76 dB	-79 dBm	-25 dB	73 dB	-76 dBm	-30 dB	-	-
87,055 MHz	-195 kHz	76 dB	-79 dBm	-25 dB	71 dB	-74 dBm	-32 dB	-	-
87,035 MHz	-215 kHz	32 dB	-35 dBm	-69 dB	29 dB	-32 dBm	-74 dB	-	-
87,015 MHz	-235 kHz	30 dB	-33 dBm	-71 dB	28 dB	-31 dBm	-75 dB	-	-
86,995 MHz	-255 kHz	30 dB	-33 dBm	-71 dB	26 dB	-29 dBm	-77 dB	-	-
86,935 MHz	-315 kHz	28 dB	-31 dBm	-73 dB	26 dB	-29 dBm	-77 dB	-	-
86,735 MHz	-515 kHz	28 dB	-31 dBm	-73 dB	25 dB	-28 dBm	-78 dB	-	-
86,235 MHz	-1015 kHz	28 dB	-31 dBm	-73 dB	24 dB	-27 dBm	-79 dB	-	-
85,235 MHz	-2015 kHz	26 dB	-29 dBm	-75 dB	21 dB	-24 dBm	-82 dB	-	-
84,235 MHz	-3015 kHz	25 dB	-28 dBm	-76 dB	21 dB	-24 dBm	-82 dB	-	-
84,035 MHz	-3215 kHz	23 dB	-26 dBm	-78 dB	20 dB	-23 dBm	-83 dB	-	-



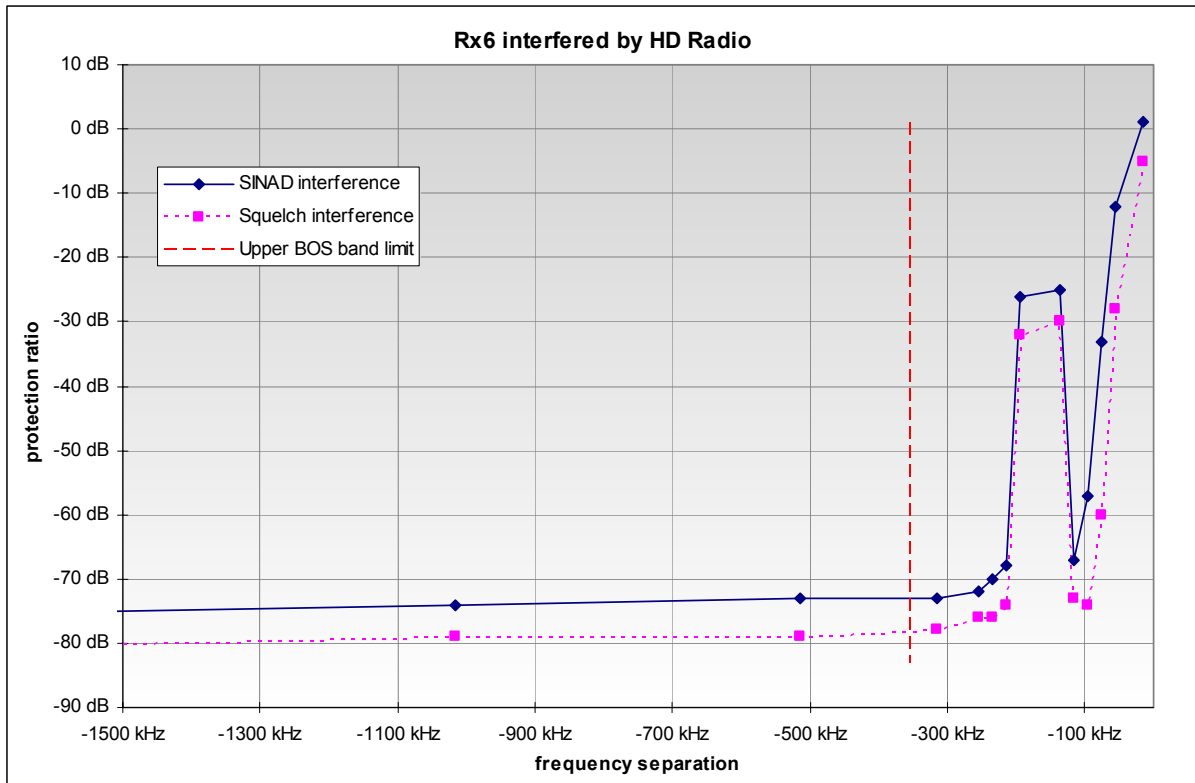
**Rx:** **6**  
 Undist. SINAD: 20 dB CCITT wtd.  
 SINAD sensitivity: -115 dBm  
 Squelch sensitivity: -114 dBm

**Unwanted:** **HD Radio in Hybrid Mode**  
 Frequency: 87,250 MHz (center)  
 Full level: -3 dBm at 0 dB atten.

**Wanted:** 1 kHz AF / 2,4 kHz deviation  
 Level for SINAD: -105 dBm  
 Level for squelch: -104 dBm

**Criteria:** **HD Radio-Signal degrades SINAD from 20 to 19 dB ("SINAD interference")**  
**Squelch does not open with wanted and HD Radio signal present ("squelch interference")**  
**HD Radio signal opens squelch alone, without wanted signal ("squelch opens")**

wanted frequency	freq.-differ.	SINAD Interference			Squelch Interference			Squelch opens	
		HD-R atten.	HD-R level	prot. ratio	HD-R. atten.	HD-R level	prot. ratio	HD-R atten.	HD-R level
87,235 MHz	-15 kHz	103 dB	-106 dBm	1 dB	96 dB	-99 dBm	-5 dB	-	-
87,195 MHz	-55 kHz	90 dB	-93 dBm	-12 dB	73 dB	-76 dBm	-28 dB	-	-
87,175 MHz	-75 kHz	69 dB	-72 dBm	-33 dB	41 dB	-44 dBm	-60 dB	-	-
87,155 MHz	-95 kHz	45 dB	-48 dBm	-57 dB	27 dB	-30 dBm	-74 dB	-	-
87,135 MHz	-115 kHz	35 dB	-38 dBm	-67 dB	28 dB	-31 dBm	-73 dB	-	-
87,115 MHz	-135 kHz	77 dB	-80 dBm	-25 dB	71 dB	-74 dBm	-30 dB	-	-
87,055 MHz	-195 kHz	76 dB	-79 dBm	-26 dB	69 dB	-72 dBm	-32 dB	-	-
87,035 MHz	-215 kHz	34 dB	-37 dBm	-68 dB	27 dB	-30 dBm	-74 dB	-	-
87,015 MHz	-235 kHz	32 dB	-35 dBm	-70 dB	25 dB	-28 dBm	-76 dB	-	-
86,995 MHz	-255 kHz	30 dB	-33 dBm	-72 dB	25 dB	-28 dBm	-76 dB	-	-
86,935 MHz	-315 kHz	29 dB	-32 dBm	-73 dB	23 dB	-26 dBm	-78 dB	-	-
86,735 MHz	-515 kHz	29 dB	-32 dBm	-73 dB	22 dB	-25 dBm	-79 dB	-	-
86,235 MHz	-1015 kHz	28 dB	-31 dBm	-74 dB	22 dB	-25 dBm	-79 dB	-	-
85,235 MHz	-2015 kHz	26 dB	-29 dBm	-76 dB	20 dB	-23 dBm	-81 dB	-	-
84,235 MHz	-3015 kHz	24 dB	-27 dBm	-78 dB	18 dB	-21 dBm	-83 dB	-	-
84,035 MHz	-3215 kHz	25 dB	-28 dBm	-77 dB	19 dB	-22 dBm	-82 dB	-	-



### 4.3 HD-Radio -> VOR reception

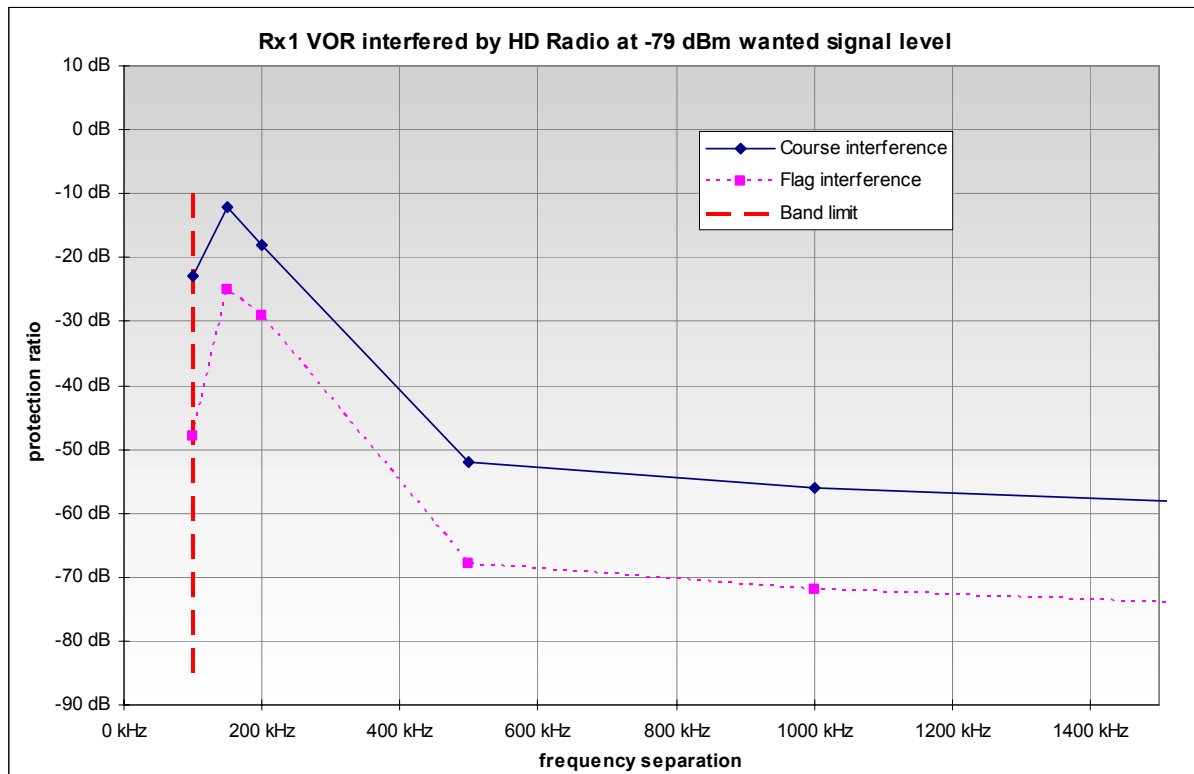
Rx: 1  
 +/-0,225  
 Undist. Course dev.: mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

Unwanted: **HD Radio in hybrid mode**  
 Frequency: (variable) (center)  
 Full level: 7 dBm at 0 dB atten.

Wanted: **VOR**  
 Frequency: 108,0 MHz  
 Level: **-79 dBm**

Criteria: **HD Radio Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**HD Radio Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		HD atten.	HD level	prot. ratio	HD-atten.	HD level	prot. ratio
107,900 MHz	100 kHz	63 dB	-56 dBm	-23 dB	38 dB	-31 dBm	-48 dB
107,850 MHz	150 kHz	74 dB	-67 dBm	-12 dB	61 dB	-54 dBm	-25 dB
107,800 MHz	200 kHz	68 dB	-61 dBm	-18 dB	57 dB	-50 dBm	-29 dB
107,500 MHz	500 kHz	34 dB	-27 dBm	-52 dB	18 dB	-11 dBm	-68 dB
107,000 MHz	1000 kHz	30 dB	-23 dBm	-56 dB	14 dB	-7 dBm	-72 dB
106,000 MHz	2000 kHz	26 dB	-19 dBm	-60 dB	10 dB	-3 dBm	-76 dB
105,000 MHz	3000 kHz	22 dB	-15 dBm	-64 dB	5 dB	2 dBm	-81 dB
103,000 MHz	5000 kHz	14 dB	-7 dBm	-72 dB	0 dB	7 dBm	-86 dB
98,000 MHz	10000 kHz	11 dB	-4 dBm	-75 dB		> 7 dBm	< -70 dB



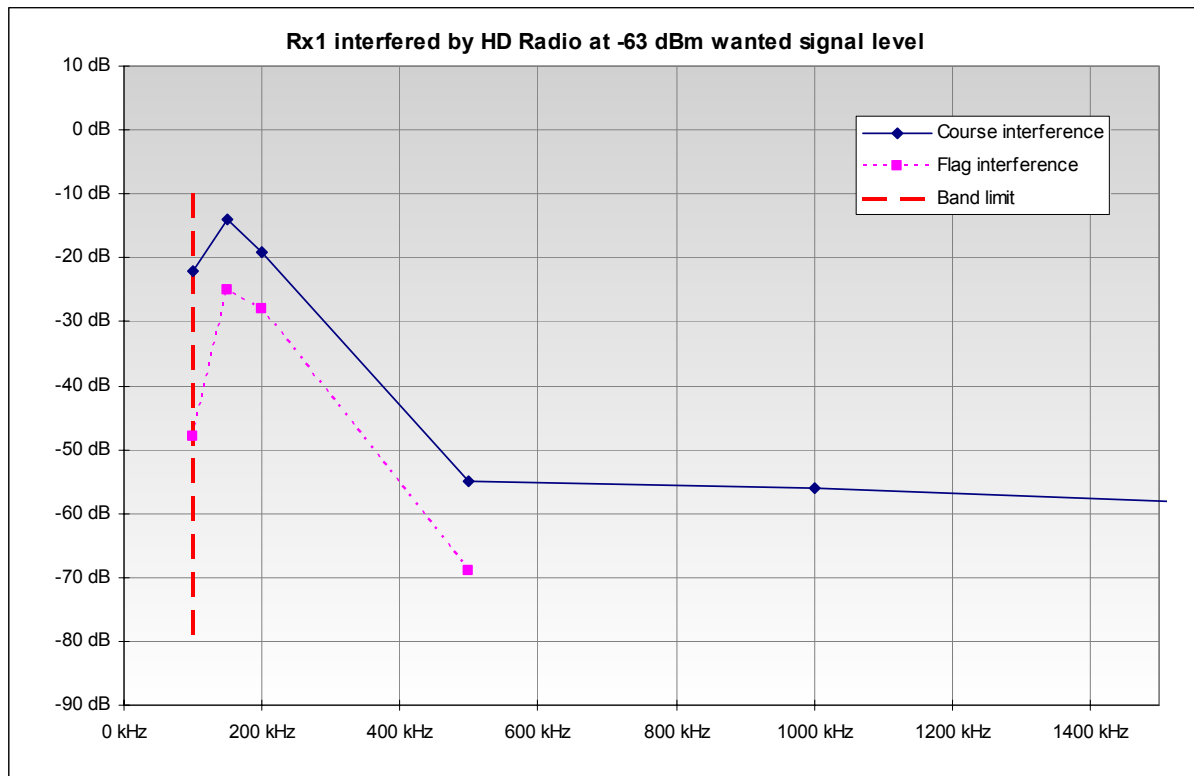
**Rx: 1**  
 Undist. Course dev.: +/-0,225 mV equals to 0.3° course deviation according to Rec IS.1140 5.4.1.1  
 Sensitivity Course: -98 dBm  
 Sensitivity Flag: -107 dBm

**Unwanted: HD Radio in hybrid mode**  
 Frequency: (variable) (center)  
 Full level: 7 dBm at 0 dB atten.

**Wanted: VOR**  
 Frequency: 108,0 MHz  
 Level: **-63 dBm**

**Criteria:**  
 HD Radio Signal degrades course accuracy by more than 0.3° ("Course interference")  
 HD Radio Signal shows flag ("Flag interference")

unwanted frequency	freq.-differ.	Course interference			HD-atten.	HD level	prot. ratio
		HD atten.	HD level				
107,900 MHz	100 kHz	48 dB	-41 dBm	-22 dB	22 dB	-15 dBm	-48 dB
107,850 MHz	150 kHz	56 dB	-49 dBm	-14 dB	45 dB	-38 dBm	-25 dB
107,800 MHz	200 kHz	51 dB	-44 dBm	-19 dB	42 dB	-35 dBm	-28 dB
107,500 MHz	500 kHz	15 dB	-8 dBm	-55 dB	1 dB	6 dBm	-69 dB
107,000 MHz	1000 kHz	14 dB	-7 dBm	-56 dB		> 7 dBm	< -70 dB
106,000 MHz	2000 kHz	10 dB	-3 dBm	-60 dB			
105,000 MHz	3000 kHz	7 dB	0 dBm	-63 dB			
103,000 MHz	5000 kHz		> 7 dBm	< -70 dB			





### 4.4 HD-Radio -> ILS reception

Rx: 1

Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1

Sensitivity Course: -95 dBm

Sensitivity Flag: -102 dBm

Unwanted: **HD Radio in hybrid mode**

Frequency: (variable) (center)

Full level: 7 dBm at 0 dB atten.

Wanted: **ILS** 0.093 course deflection

Frequency: 108,1 MHz

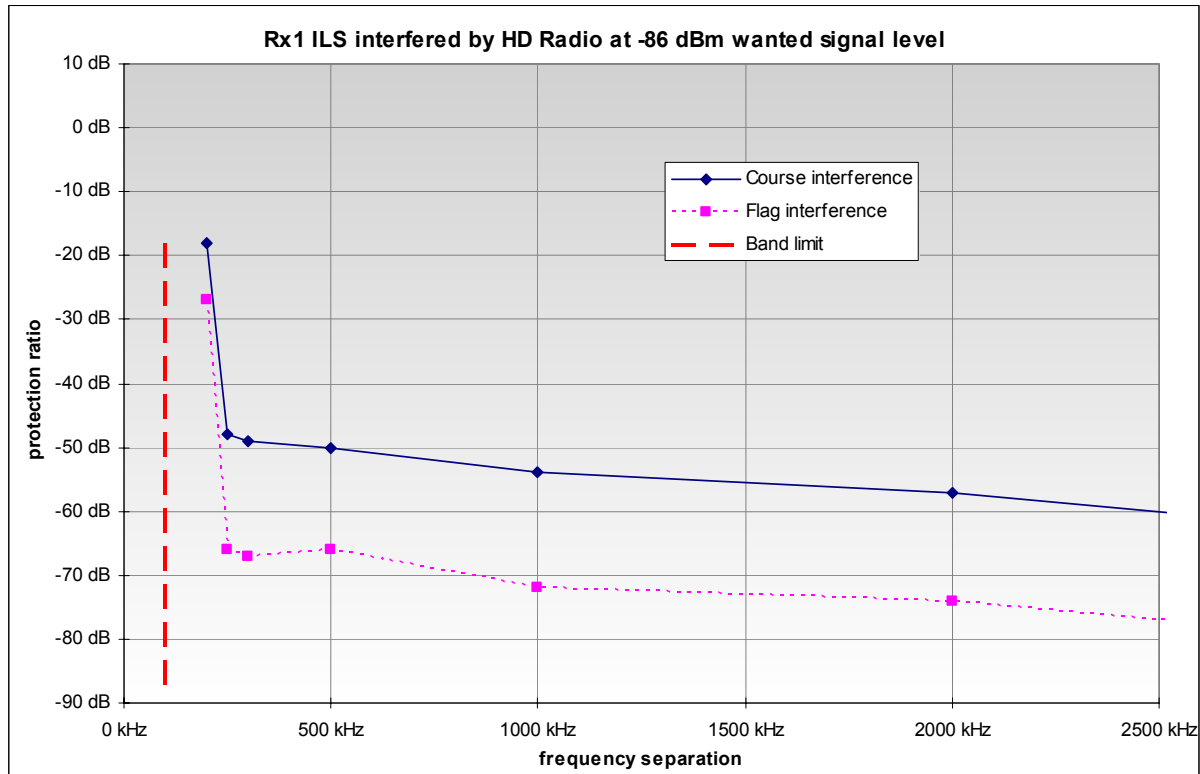
Level: **-86 dBm**

**HD Radio Signal degrades course accuracy by more than 0.3° ("Course interference")**

Criteria:

**HD Radio Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		HD-Radio atten.	HD-Radio level	prot. ratio	HD-Radio atten.	HD-Radio level	prot. ratio
107,900 MHz	200 kHz	75 dB	-68 dBm	-18 dB	66 dB	-59 dBm	-27 dB
107,850 MHz	250 kHz	45 dB	-38 dBm	-48 dB	27 dB	-20 dBm	-66 dB
107,800 MHz	300 kHz	44 dB	-37 dBm	-49 dB	26 dB	-19 dBm	-67 dB
107,600 MHz	500 kHz	43 dB	-36 dBm	-50 dB	27 dB	-20 dBm	-66 dB
107,100 MHz	1000 kHz	39 dB	-32 dBm	-54 dB	21 dB	-14 dBm	-72 dB
106,100 MHz	2000 kHz	36 dB	-29 dBm	-57 dB	19 dB	-12 dBm	-74 dB
105,100 MHz	3000 kHz	30 dB	-23 dBm	-63 dB	13 dB	-6 dBm	-80 dB
103,100 MHz	5000 kHz	26 dB	-19 dBm	-67 dB	8 dB	-1 dBm	-85 dB
98,100 MHz	10000 kHz	25 dB	-18 dBm	-68 dB	6 dB	1 dBm	-87 dB



**Rx:** **1**  
 Undist. Course dev.: +/-0,225 mV equals to 2 Sigma course deviation according to Rec IS.1140 5.3.1.1  
 Sensitivity Course: -95 dBm  
 Sensitivity Flag: -102 dBm

**Unwanted:** **HD Radio in hybrid mode**  
 Frequency: (variable) (center)  
 Full level: 7 dBm at 0 dB atten.

**Wanted:** **ILS** 0.093 course deflection  
 Frequency: 108,1 MHz  
 Level: **-70 dBm**

**Criteria:** **HD Radio Signal degrades course accuracy by more than 0.3° ("Course interference")**  
**HD Radio Signal shows flag ("Flag interference")**

unwanted frequency	freq.-differ.	Course interference			Flag interference		
		HD-Radio atten.	HD-Radio level	prot. ratio	HD-Radio-atten.	HD-Radio level	prot. ratio
107,900 MHz	200 kHz	56 dB	-49 dBm	-21 dB	50 dB	-43 dBm	-27 dB
107,850 MHz	250 kHz	28 dB	-21 dBm	-49 dB	11 dB	-4 dBm	-66 dB
107,800 MHz	300 kHz	28 dB	-21 dBm	-49 dB	10 dB	-3 dBm	-67 dB
107,600 MHz	500 kHz	29 dB	-22 dBm	-48 dB	10 dB	-3 dBm	-67 dB
107,100 MHz	1000 kHz	21 dB	-14 dBm	-56 dB	4 dB	3 dBm	-73 dB
106,100 MHz	2000 kHz	21 dB	-14 dBm	-56 dB	3 dB	4 dBm	-74 dB
105,100 MHz	3000 kHz	13 dB	-6 dBm	-64 dB		> 7 dBm	< -77 dB
103,100 MHz	5000 kHz	10 dB	-3 dBm	-67 dB			
98,100 MHz	10000 kHz	8 dB	-1 dBm	-69 dB			

