

## DOCUMENTO TÉCNICO INGENIERÍA / TECHNICAL DOCUMENTATION

PARA/TO:

DE/FROM:

**OMB**

ORGANIZACIÓN/ORGANIZATION:

FECHA/DATE:

**June 16 2006**

NÚMERO DE FAX/FAX NUMBER:

Nº DE REFERENCIA DEL REMITENTE/OUR REF. NUMBER:

**IT-04050602**

ASUNTO/SUBJECT:

SU Nº DE REFERENCIA/YOUR REF. NUMBER:

**EM25Dig Measurements**

### *Measurements for type certification of FM transmitters.*

- All the measurements done are valid for the unit tested identified with the serial number noted in the identification section, this unit was randomly selected. The results are valid also for the general and particular conditions specified.
- All the measurements are done in the OMB laboratory except the measurements for cabinet radiation, which was done in the external laboratory of *Ministerio de industria, turismo y comercio de España; Dirección general de telecomunicaciones y tecnologías de la información; Radiofrequency Laboratory*

#### • IDENTIFICATION.

Class: FM transmitter  
Model: EM25DIG  
Nominal power: 25W (Adjustable from 0 to 25W)  
Manufacturer: OMB Sistemas Electrónicos, S.A.  
Country of manufacturing: Spain  
Address: Avda. San Antonio 41, 50410 Cuarte de Huerva, Zaragoza, Spain.

**EQUIPMENT UNDER TEST (EUT)= EM25DIG**

**SERIAL NUMBER 60156**



- LIST OF TEST INSTRUMENTS USED FOR THE MEASUREMENTS DONE IN THE OMB LABORATORY (EXCLUDES CABINET RADIATION TEST):

| <b>Equipment</b>        | <b>Manufacturer</b>          | <b>Model</b> | <b>Serial Number</b> |
|-------------------------|------------------------------|--------------|----------------------|
| Wattmeter               | Bird                         | 4391         | 2442                 |
| Spectrum Analyzer       | Advantest                    | R3131        | J003753              |
| Modulation Analyzer     | HP                           | 8901B        | 3226A04087           |
| Audio Analyzer          | HP                           | 8903B        | 2910A06154           |
| Dynamic Signal Analyzer | HP                           | 3562A        | 2502A01080           |
| RF Coupler              | Bird                         | CU-2340/SRC  | A1240                |
| Thermal Chamber         | ACS (Angelantoni Centro-Sud) | UY-300       | 1940/B/7             |
| Dummy Load              | LSI (Lear Siegler Inc)       | 160B600X     | 1499                 |
| Multimeter              | Fluke                        | 27/FM        | 6625-00-165-6001     |

- INDEX

|                                                                                                                    |    |
|--------------------------------------------------------------------------------------------------------------------|----|
| • Identification.                                                                                                  | 1  |
| • List of test instruments used for the measurements done in the OMB laboratory (excludes cabinet radiation test): | 2  |
| • Index                                                                                                            | 2  |
| • Authorized Emission                                                                                              | 3  |
| • General conditions (Modified by particular conditions)                                                           | 3  |
| • Power Output Measurements                                                                                        | 3  |
| • Frequency stability                                                                                              | 5  |
| • Cabinet Radiation                                                                                                | 46 |
| • Preemphasis (75µs)                                                                                               | 48 |
| • Stereo transmission compliance                                                                                   | 50 |
| • Voltage And Current of final amplifiers                                                                          | 51 |
| • Subcarrier technical requirements                                                                                | 51 |
| • Conclusion:                                                                                                      | 52 |

- AUTHORIZED EMISSION

This equipment is able to be used in monophonic and stereophonic operation.

- For **monophonic** operation the emission designator is **180KF3E**
- For **stereophonic** operation the emission designator is **300KF8E**

- GENERAL CONDITIONS (MODIFIED BY PARTICULAR CONDITIONS)

Ambient Temperature: Between 17 and 25°C

Power supply (Nominal): 220VAC

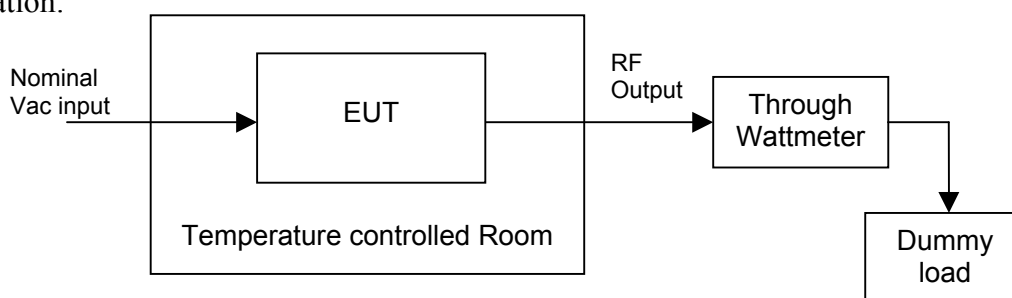
RF output of the equipment connected to a dummy load.

- POWER OUTPUT MEASUREMENTS

Particular Conditions:

- Without modulation input.
- Temperature varied between –10 and 45°C
- Measures done at 100%, 105% and 25% of nominal power.
- Acceptable limits: Between 90 and 105% of the adjusted level.
- Measurements done at 98MHz, 88.1MHz and 107.9MHz

Configuration:



| Frequency (MHz) | Temperature (°C) | Power adjusted (nominal) (W) | Power reading (Wattmeter) (W) | Range (min) (90%) (W) | Range (Max) (105%) (W) | Result (Pass/ Not Pass) |
|-----------------|------------------|------------------------------|-------------------------------|-----------------------|------------------------|-------------------------|
| 98              | -10              | 25                           | 26,1                          | 22,5                  | 26,25                  | Pass                    |
| 98              | 0                | 25                           | 25,7                          | 22,5                  | 26,25                  | Pass                    |
| 98              | 10               | 25                           | 24,6                          | 22,5                  | 26,25                  | Pass                    |
| 98              | 20               | 25                           | 24,6                          | 22,5                  | 26,25                  | Pass                    |
| 98              | 30               | 25                           | 24,2                          | 22,5                  | 26,25                  | Pass                    |
| 98              | 40               | 25                           | 24,2                          | 22,5                  | 26,25                  | Pass                    |
| 98              | 45               | 25                           | 23,4                          | 22,5                  | 26,25                  | Pass                    |
| 88,1            | -10              | 25                           | 26,2                          | 22,5                  | 26,25                  | Pass                    |

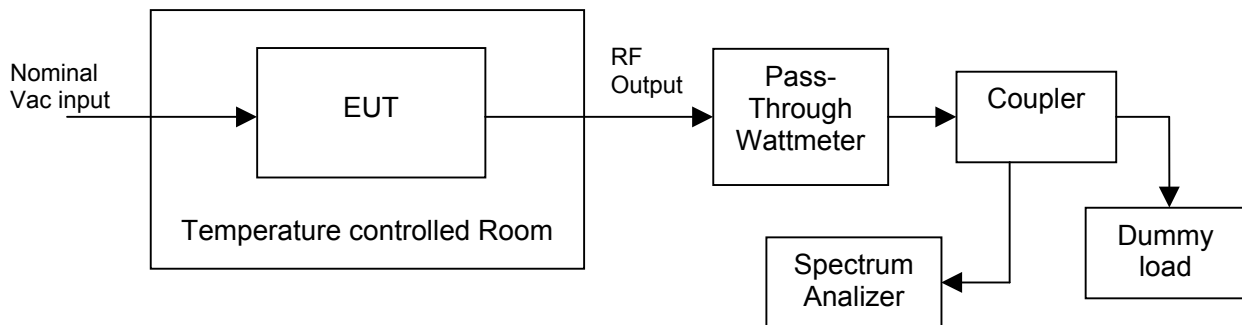
|       |     |       |      |       |       |      |
|-------|-----|-------|------|-------|-------|------|
| 88,1  | 0   | 25    | 25,9 | 22,5  | 26,25 | Pass |
| 88,1  | 10  | 25    | 24,9 | 22,5  | 26,25 | Pass |
| 88,1  | 20  | 25    | 24,6 | 22,5  | 26,25 | Pass |
| 88,1  | 30  | 25    | 24,5 | 22,5  | 26,25 | Pass |
| 88,1  | 40  | 25    | 23,7 | 22,5  | 26,25 | Pass |
| 88,1  | 45  | 25    | 23,5 | 22,5  | 26,25 | Pass |
|       |     |       |      |       |       |      |
| 107,9 | -10 | 25    | 26,2 | 22,5  | 26,25 | Pass |
| 107,9 | 0   | 25    | 25,7 | 22,5  | 26,25 | Pass |
| 107,9 | 10  | 25    | 24,6 | 22,5  | 26,25 | Pass |
| 107,9 | 20  | 25    | 24,6 | 22,5  | 26,25 | Pass |
| 107,9 | 30  | 25    | 24,3 | 22,5  | 26,25 | Pass |
| 107,9 | 40  | 25    | 23,6 | 22,5  | 26,25 | Pass |
| 107,9 | 45  | 25    | 23,3 | 22,5  | 26,25 | Pass |
|       |     |       |      |       |       |      |
| 98    | -10 | 6,25  | 6,5  | -     | 6,56  | Pass |
| 98    | 0   | 6,25  | 6,4  | -     | 6,56  | Pass |
| 98    | 10  | 6,25  | 5,9  | -     | 6,56  | Pass |
| 98    | 20  | 6,25  | 5,9  | -     | 6,56  | Pass |
| 98    | 30  | 6,25  | 5,3  | -     | 6,56  | Pass |
| 98    | 40  | 6,25  | 5,3  | -     | 6,56  | Pass |
| 98    | 45  | 6,25  | 5,2  | -     | 6,56  | Pass |
|       |     |       |      |       |       |      |
| 88,1  | -10 | 6,25  | 6,4  | -     | 6,56  | Pass |
| 88,1  | 0   | 6,25  | 6,4  | -     | 6,56  | Pass |
| 88,1  | 10  | 6,25  | 5,8  | -     | 6,56  | Pass |
| 88,1  | 20  | 6,25  | 5,7  | -     | 6,56  | Pass |
| 88,1  | 30  | 6,25  | 5,4  | -     | 6,56  | Pass |
| 88,1  | 40  | 6,25  | 5,3  | -     | 6,56  | Pass |
| 88,1  | 45  | 6,25  | 5,1  | -     | 6,56  | Pass |
|       |     |       |      |       |       |      |
| 107,9 | -10 | 6,25  | 6,3  | -     | 6,56  | Pass |
| 107,9 | 0   | 6,25  | 6,2  | -     | 6,56  | Pass |
| 107,9 | 10  | 6,25  | 5,8  | -     | 6,56  | Pass |
| 107,9 | 20  | 6,25  | 5,7  | -     | 6,56  | Pass |
| 107,9 | 30  | 6,25  | 5,3  | -     | 6,56  | Pass |
| 107,9 | 40  | 6,25  | 5,2  | -     | 6,56  | Pass |
| 107,9 | 45  | 6,25  | 5,1  | -     | 6,56  | Pass |
|       |     |       |      |       |       |      |
| 98    | -10 | 26,25 | 27,3 | 23,62 | 27,56 | Pass |
| 98    | 0   | 26,25 | 27,3 | 23,62 | 27,56 | Pass |
| 98    | 10  | 26,25 | 25,9 | 23,62 | 27,56 | Pass |
| 98    | 20  | 26,25 | 25,6 | 23,62 | 27,56 | Pass |
| 98    | 30  | 26,25 | 25,1 | 23,62 | 27,56 | Pass |
| 98    | 40  | 26,25 | 24,8 | 23,62 | 27,56 | Pass |
| 98    | 45  | 26,25 | 24,4 | 23,62 | 27,56 | Pass |
|       |     |       |      |       |       |      |
| 88,1  | -10 | 26,25 | 27,4 | 23,62 | 27,56 | Pass |
| 88,1  | 0   | 26,25 | 27,3 | 23,62 | 27,56 | Pass |
| 88,1  | 10  | 26,25 | 26,0 | 23,62 | 27,56 | Pass |
| 88,1  | 20  | 26,25 | 25,5 | 23,62 | 27,56 | Pass |
| 88,1  | 30  | 26,25 | 25,3 | 23,62 | 27,56 | Pass |
| 88,1  | 40  | 26,25 | 24,7 | 23,62 | 27,56 | Pass |
| 88,1  | 45  | 26,25 | 24,7 | 23,62 | 27,56 | Pass |
|       |     |       |      |       |       |      |
| 107,9 | -10 | 26,25 | 26,3 | 23,62 | 27,56 | Pass |
| 107,9 | 0   | 26,25 | 26,2 | 23,62 | 27,56 | Pass |
| 107,9 | 10  | 26,25 | 24,9 | 23,62 | 27,56 | Pass |
| 107,9 | 20  | 26,25 | 24,6 | 23,62 | 27,56 | Pass |
| 107,9 | 30  | 26,25 | 24,3 | 23,62 | 27,56 | Pass |
| 107,9 | 40  | 26,25 | 23,9 | 23,62 | 27,56 | Pass |
| 107,9 | 45  | 26,25 | 23,7 | 23,62 | 27,56 | Pass |
|       |     |       |      |       |       |      |

- FREQUENCY STABILITY

A) Particular Conditions:

- Tested at nominal Output Power
- Temperature varied between  $-10$  and  $45^{\circ}\text{C}$
- Nominal AC voltage input
- Without modulation input.
- Acceptable limits:  $\pm 2\text{KHz}$ .
- Measurements done at  $98\text{MHz}$ ,  $88.1\text{MHz}$  and  $107.9\text{MHz}$

Configuration:

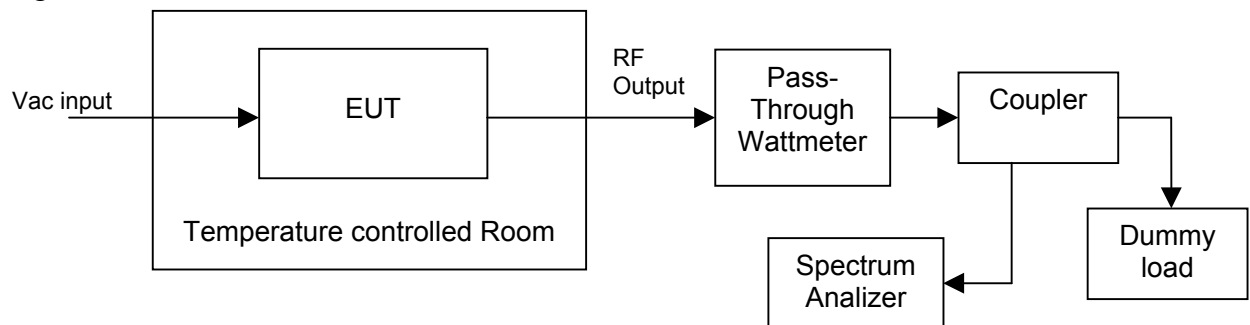


| Temperature           | Frequency          | Frequency error    | Range ( $\pm 2\text{KHz}$ ) | Pass / No Pass |
|-----------------------|--------------------|--------------------|-----------------------------|----------------|
| $-10^{\circ}\text{C}$ | $88.1\text{MHz}$   | $-0,115\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $0^{\circ}\text{C}$   | $88.1\text{MHz}$   | $-0,042\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $10^{\circ}\text{C}$  | $88.1\text{MHz}$   | $0,034\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $20^{\circ}\text{C}$  | $88.1\text{MHz}$   | $0,041\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $30^{\circ}\text{C}$  | $88.1\text{MHz}$   | $0,061\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $40^{\circ}\text{C}$  | $88.1\text{MHz}$   | $-0,023\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $45^{\circ}\text{C}$  | $88.1\text{MHz}$   | $-0,092\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $-10^{\circ}\text{C}$ | $98\text{ MHz}$    | $-0,119\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $0^{\circ}\text{C}$   | $98\text{ MHz}$    | $-0,043\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $10^{\circ}\text{C}$  | $98\text{ MHz}$    | $0,066\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $20^{\circ}\text{C}$  | $98\text{ MHz}$    | $0,054\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $30^{\circ}\text{C}$  | $98\text{ MHz}$    | $0,108\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $40^{\circ}\text{C}$  | $98\text{ MHz}$    | $0,028\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $45^{\circ}\text{C}$  | $98\text{ MHz}$    | $-0,102\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $-10^{\circ}\text{C}$ | $107.9\text{ MHz}$ | $-0,125\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $0^{\circ}\text{C}$   | $107.9\text{ MHz}$ | $-0,207\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |
| $10^{\circ}\text{C}$  | $107.9\text{ MHz}$ | $0,064\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $20^{\circ}\text{C}$  | $107.9\text{ MHz}$ | $0,058\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $30^{\circ}\text{C}$  | $107.9\text{ MHz}$ | $0,108\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $40^{\circ}\text{C}$  | $107.9\text{ MHz}$ | $0,027\text{KHz}$  | $\pm 2\text{KHz}$           | Pass           |
| $45^{\circ}\text{C}$  | $107.9\text{ MHz}$ | $-0,115\text{KHz}$ | $\pm 2\text{KHz}$           | Pass           |

B) Particular Conditions:

- Tested at 21°C
- 98MHz output
- Measures done at 100%, 105% and 25% of nominal power.
- Varying AC voltage input
- Acceptable limits:  $\pm 2\text{KHz}$ .

Configuration:



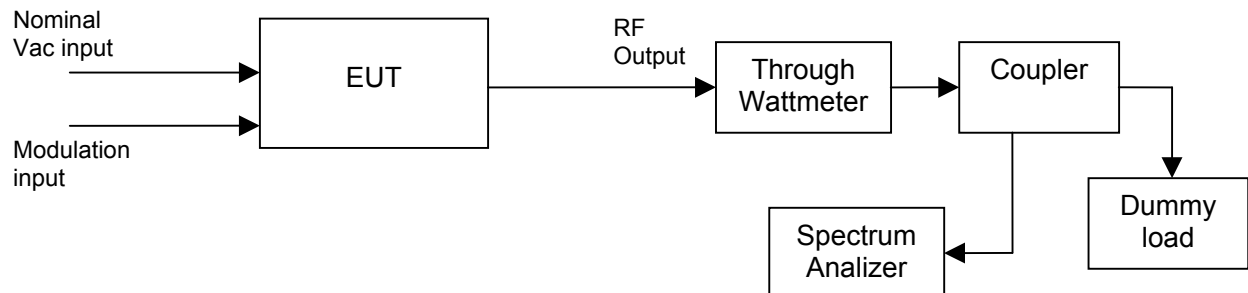
| Power          | Input AC voltage  | Freq. error | Range ( $\pm 2\text{KHz}$ ) | Pass/Not Pass |
|----------------|-------------------|-------------|-----------------------------|---------------|
| 25W (100%)     | 99.5V (115V-15%)  | -0.128KHz   | $\pm 2\text{KHz}$           | Pass          |
| 25W (100%)     | 131.5V (115V+15%) | -0.127KHz   | $\pm 2\text{KHz}$           | Pass          |
| 25W (100%)     | 195.5V (230-15%)  | +0.087KHz   | $\pm 2\text{KHz}$           | Pass          |
| 25W (100%)     | 260V (230+15%)    | +0.260KHz   | $\pm 2\text{KHz}$           | Pass          |
|                |                   |             |                             |               |
| 26,25 W (105%) | 99.5V (115V-15%)  | -0.151KHz   | $\pm 2\text{KHz}$           | Pass          |
| 26,25 W (105%) | 131.5V (115V+15%) | -0.124KHz   | $\pm 2\text{KHz}$           | Pass          |
| 26,25 W (105%) | 195.5V (230-15%)  | -0.062KHz   | $\pm 2\text{KHz}$           | Pass          |
| 26,25 W (105%) | 260V (230+15%)    | -0.004KHz   | $\pm 2\text{KHz}$           | Pass          |
|                |                   |             |                             |               |
| 6,25 W (25%)   | 99.5V (115V-15%)  | -0.109KHz   | $\pm 2\text{KHz}$           | Pass          |
| 6,25 W (25%)   | 131.5V (115V+15%) | -0.108KHz   | $\pm 2\text{KHz}$           | Pass          |
| 6,25 W (25%)   | 195.5V (230-15%)  | +0.190KHz   | $\pm 2\text{KHz}$           | Pass          |
| 6,25 W (25%)   | 260V (230+15%)    | +0.011KHz   | $\pm 2\text{KHz}$           | Pass          |

- CONDUCTED RADIATION

Particular Conditions:

- With modulation input. As in *CFR Title 47 Chapter 1 Part 2. 1049*
  - \_ Mono (85% deviation)
  - \_ Mono + Subcarrier (85% deviation)
  - \_ Stereo (85% deviation)
- Temperature 25°C
- Measures done at 100%, 105% and 25% of nominal power.
- Measurements done at 98MHz, 88.1MHz and 107.9MHz
- Nominal AC voltage input
- Acceptable limits: As in *CFR Title 47 Chapter 1 Part 73. 317*
  - \_ In frequencies between 120 and 240KHz away from carrier:  
Below **25dBc** of the unmodulated carrier.
  - \_ In frequencies between 240 and 600KHz away from carrier:  
Below **35dBc** of the unmodulated carrier.
  - \_ In frequencies more than 600KHz away from carrier:  
Below  $(43 + 10\log(P))=57\text{dBc}$  of the unmodulated carrier.

Configuration:



Procedure:

1. Without modulation, adjust the level of the signal to be the reference of the spectrum analyzer display. Take a plot
2. Set the display frequency start and stop to be able to watch the harmonics and spurious signals far from 600KHz out of the carrier. Take a plot
3. With the proper modulation (defined in CFR Title 47 Chapter 1 Part 2. 1049) take plots showing the levels in the points required by CFR Title 47 Chapter 1 Part 73. 317

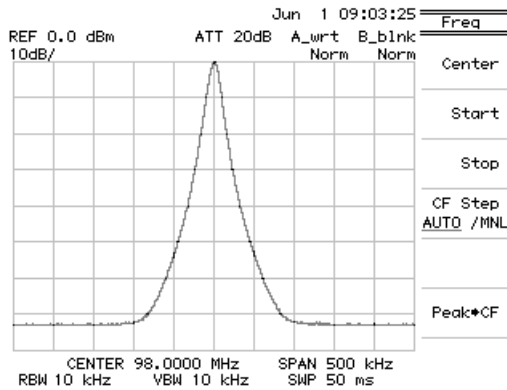
|        |                                                                                                                                                                                |          |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| •      | <b>Conducted radiation</b>                                                                                                                                                     | <b>7</b> |
| A.     | 98MHz                                                                                                                                                                          | 10       |
| A.a.   | Nominal power (25W = 100% power) 98MHz                                                                                                                                         | 10       |
| A.a.1. | Carrier whitout modulation (reference)                                                                                                                                         | 10       |
| A.a.2. | Out of 600KHz from carrier.                                                                                                                                                    | 10       |
| A.a.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 11       |
| A.a.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 12       |
| A.a.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 13       |
| A.b.   | Nominal power (26,25W = 105% power) 98MHz                                                                                                                                      | 14       |
| A.b.1. | Carrier whitout modulation (reference)                                                                                                                                         | 14       |
| A.b.2. | Out of 600KHz from carrier.                                                                                                                                                    | 14       |
| A.b.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 15       |
| A.b.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 16       |
| A.b.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 17       |
| A.c.   | Nominal power (6,25W = 25% power) 98MHz                                                                                                                                        | 18       |
| A.c.1. | Carrier whitout modulation (reference)                                                                                                                                         | 18       |
| A.c.2. | Out of 600KHz from carrier.                                                                                                                                                    | 18       |
| A.c.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 19       |
| A.c.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 20       |
| A.c.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 21       |
| B.     | 88.1MHz                                                                                                                                                                        | 22       |
| B.a.   | Nominal power (25W = 100% power) 88.1MHz                                                                                                                                       | 22       |
| B.a.1. | Carrier whitout modulation (reference)                                                                                                                                         | 22       |
| B.a.2. | Out of 600KHz from carrier.                                                                                                                                                    | 22       |
| B.a.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 23       |
| B.a.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 24       |
| B.a.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 25       |
| B.b.   | Nominal power (26,25W = 105% power) 88.1MHz                                                                                                                                    | 26       |
| B.b.1. | Carrier whitout modulation (reference)                                                                                                                                         | 26       |
| B.b.2. | Out of 600KHz from carrier.                                                                                                                                                    | 26       |
| B.b.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 27       |
| B.b.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 28       |
| B.b.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 29       |
| B.c.   | Nominal power (6,25W = 25% power) 88.1MHz                                                                                                                                      | 30       |
| B.c.1. | Carrier whitout modulation (reference)                                                                                                                                         | 30       |
| B.c.2. | Out of 600KHz from carrier.                                                                                                                                                    | 30       |
| B.c.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 31       |
| B.c.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 32       |
| B.c.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 33       |
| C.     | 107.9MHz                                                                                                                                                                       | 34       |
| C.a.   | Nominal power (25W = 100% power) 107.9MHz                                                                                                                                      | 34       |
| C.a.1. | Carrier whitout modulation (reference)                                                                                                                                         | 34       |
| C.a.2. | Out of 600KHz from carrier.                                                                                                                                                    | 34       |
| C.a.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 35       |
| C.a.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 36       |

|        |                                                                                                                                                                                |    |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| C.a.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 37 |
| C.b.   | Nominal power (26.25W = 105% power) 107.9MHz                                                                                                                                   | 38 |
| C.b.1. | Carrier whitout modulation (reference)                                                                                                                                         | 38 |
| C.b.2. | Out of 600KHz from carrier.                                                                                                                                                    | 38 |
| C.b.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 39 |
| C.b.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 40 |
| C.b.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 41 |
| C.c.   | Nominal power (6.25W = 25% power) 107.9MHz                                                                                                                                     | 42 |
| C.c.1. | Carrier whitout modulation (reference)                                                                                                                                         | 42 |
| C.c.2. | Out of 600KHz from carrier.                                                                                                                                                    | 42 |
| C.c.3. | Mono (15KHz, 85% modulation=63.75KHz)                                                                                                                                          | 43 |
| C.c.4. | Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)                                                                       | 44 |
| C.c.5. | Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%) | 45 |

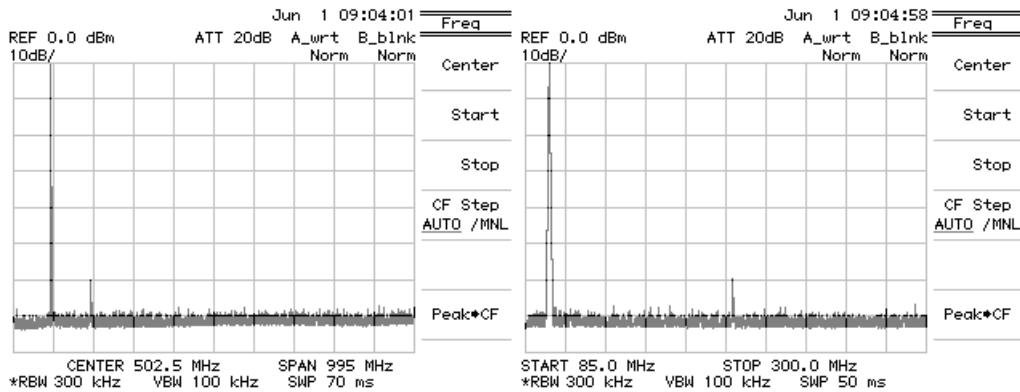
## A. 98MHz

A.a. Nominal power (25W = 100% power) 98MHz

A.a.1. Carrier whitout modulation (reference)

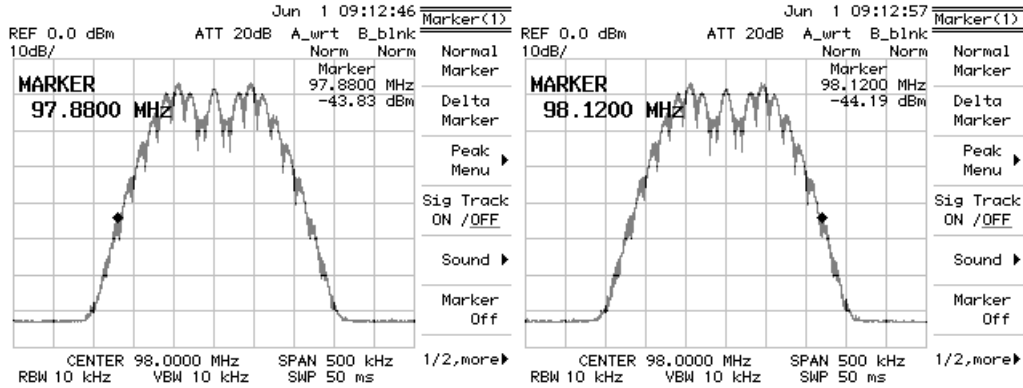


A.a.2. Out of 600KHz from carrier.

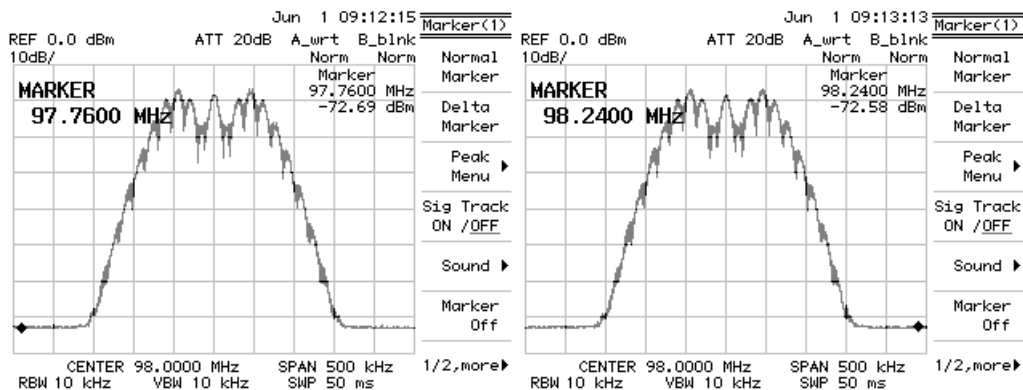


More than 600KHz away from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

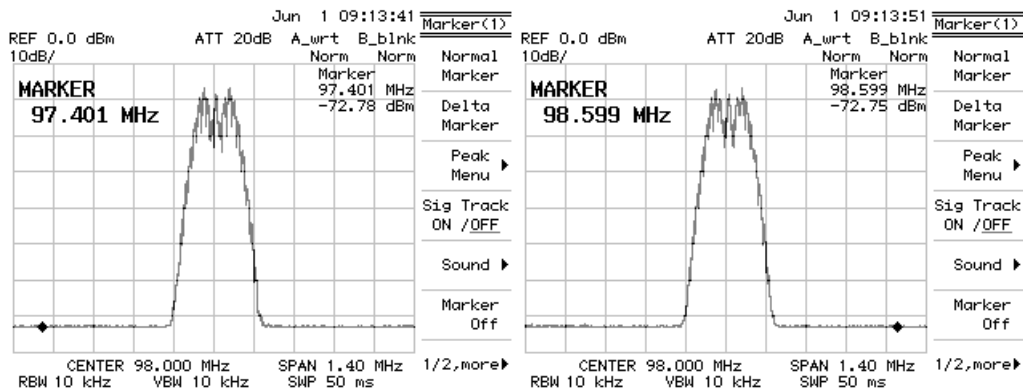
### A.a.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

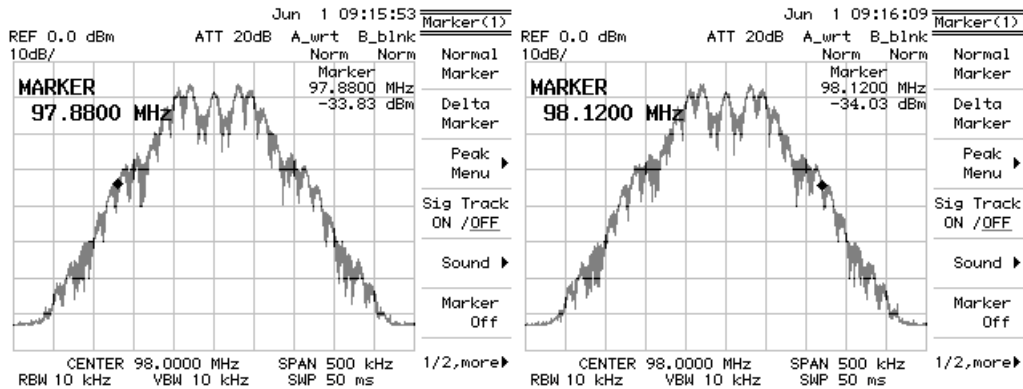


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

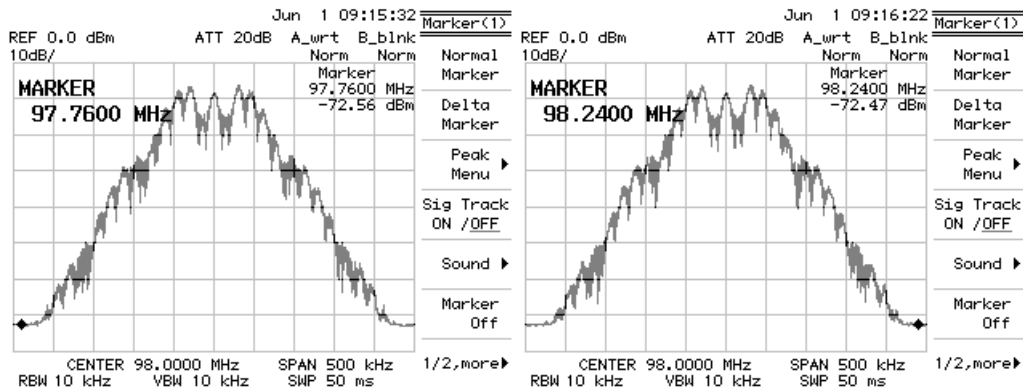


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

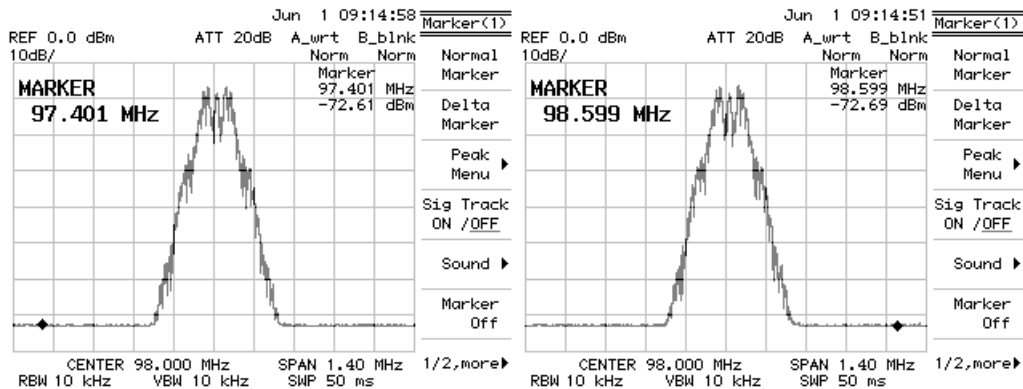
A.a.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

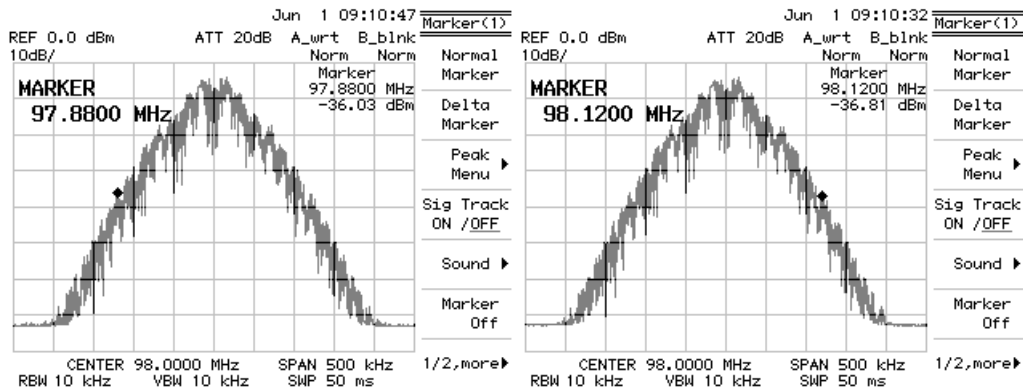


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

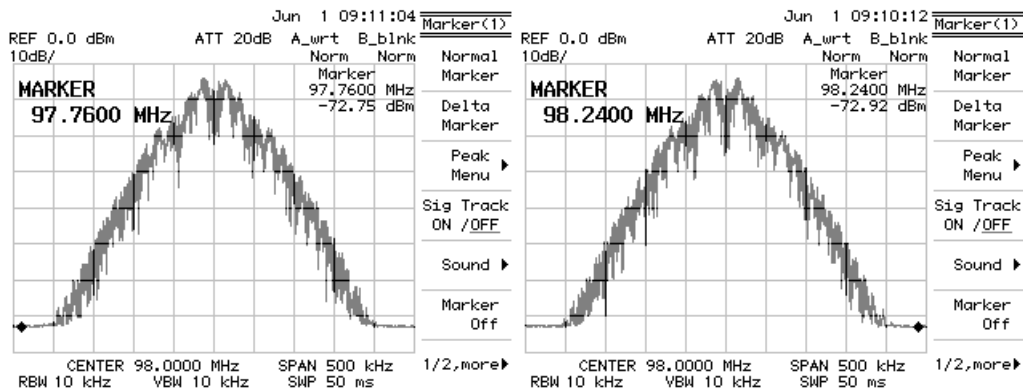


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

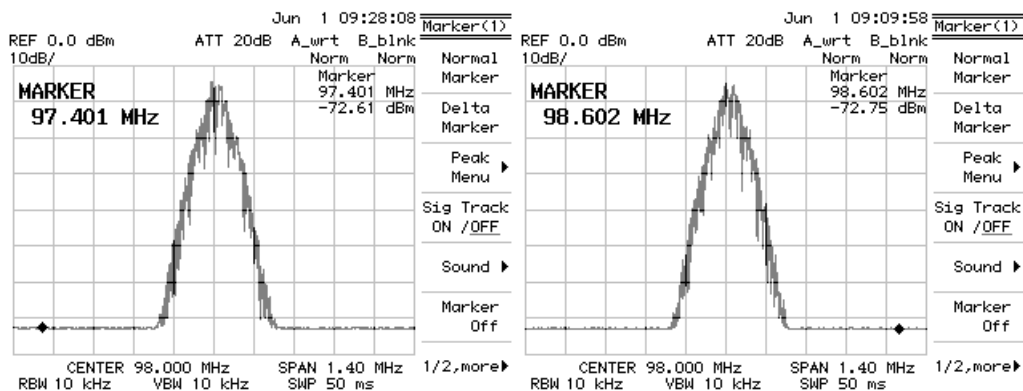
A.a.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



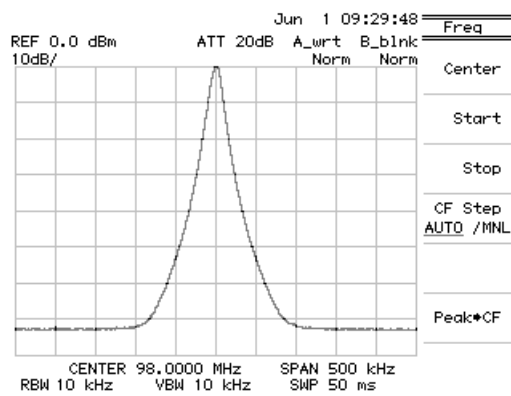
Markers at 240KHz from the carrier. Below 35dBc => **Pass**



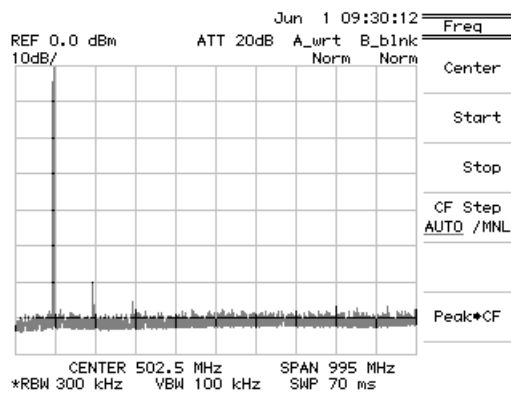
Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

A.b. Nominal power (26,25W = 105% power) 98MHz

A.b.1. Carrier without modulation (reference)

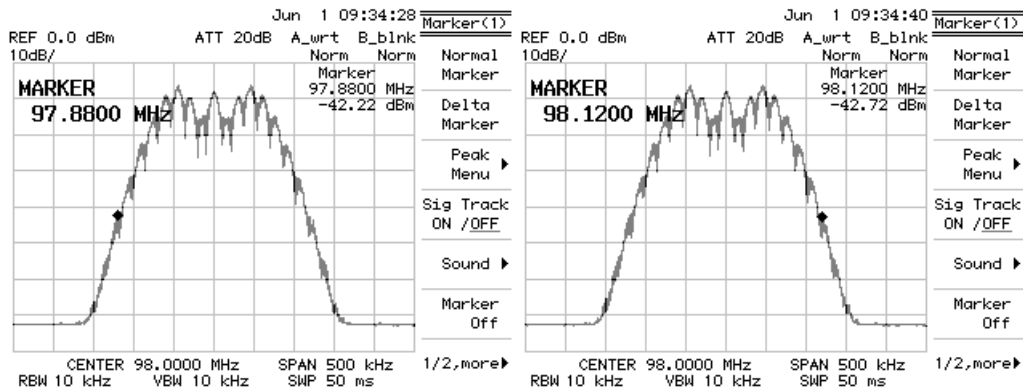


A.b.2. Out of 600KHz from carrier.

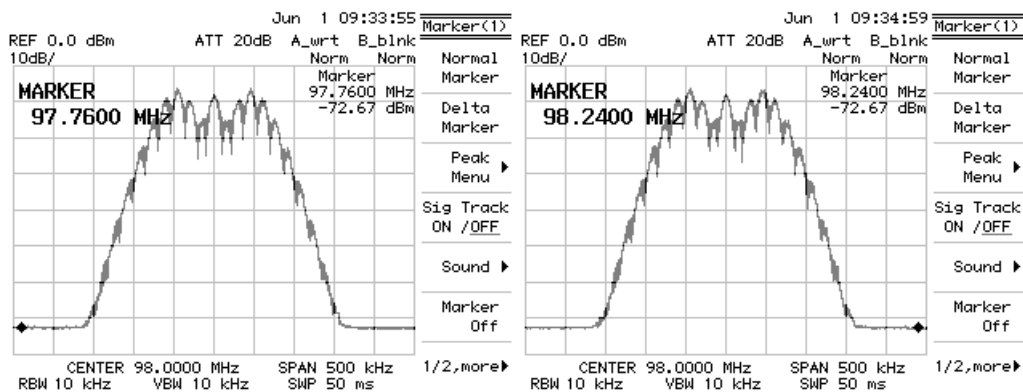


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc} \Rightarrow$  **Pass**

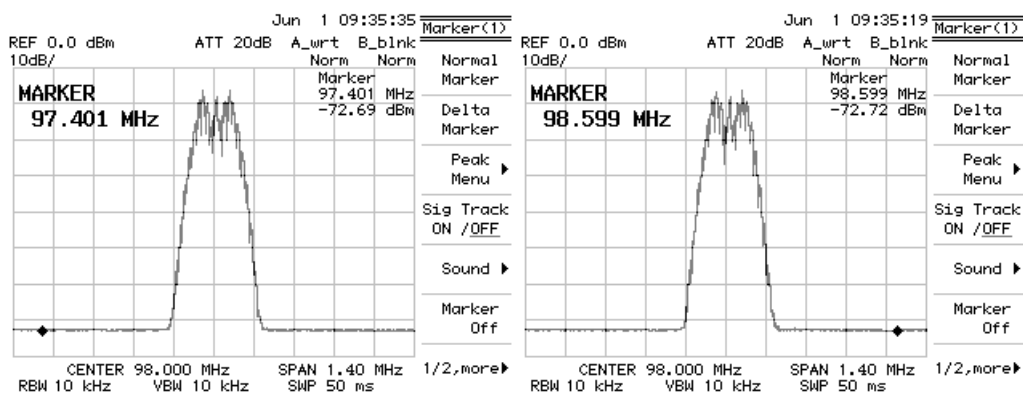
### A.b.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

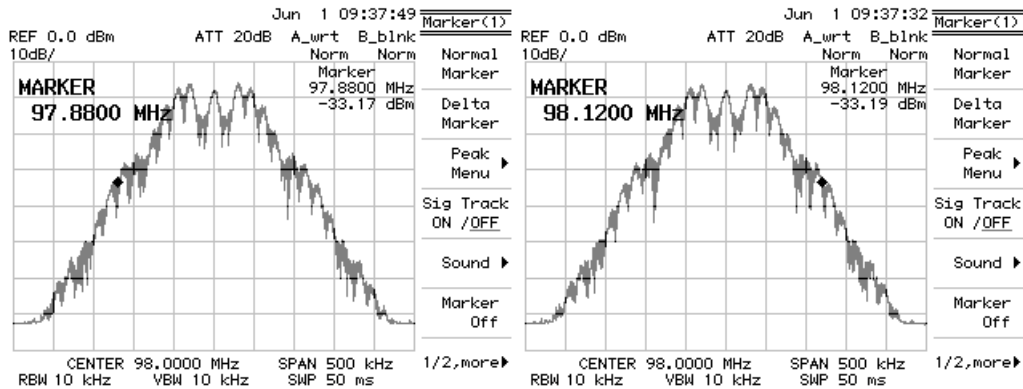


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

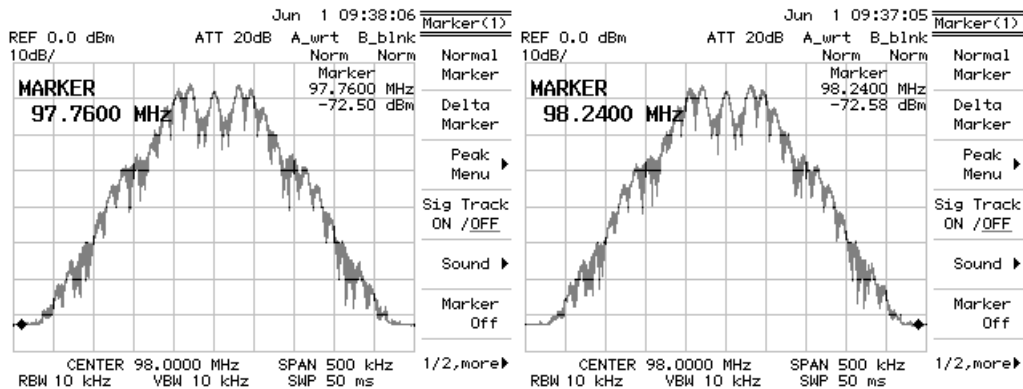


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc}$  => **Pass**

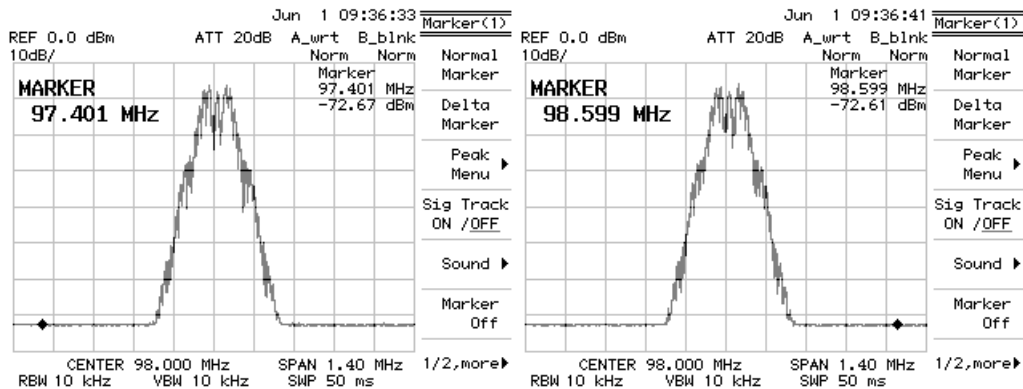
A.b.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

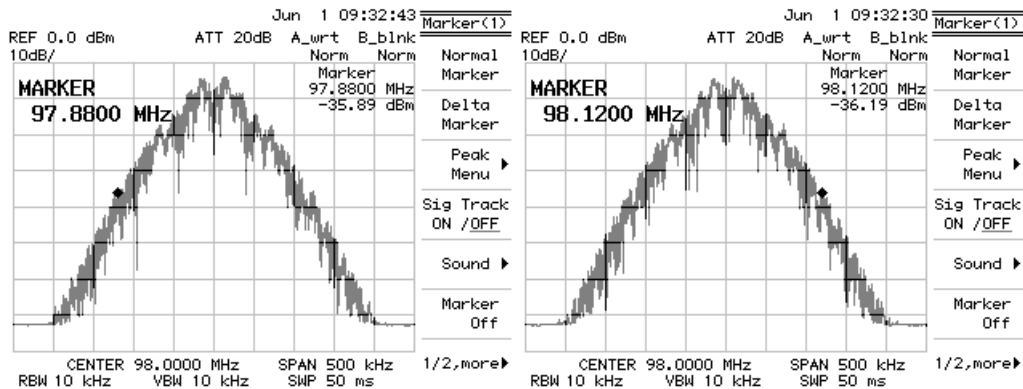


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

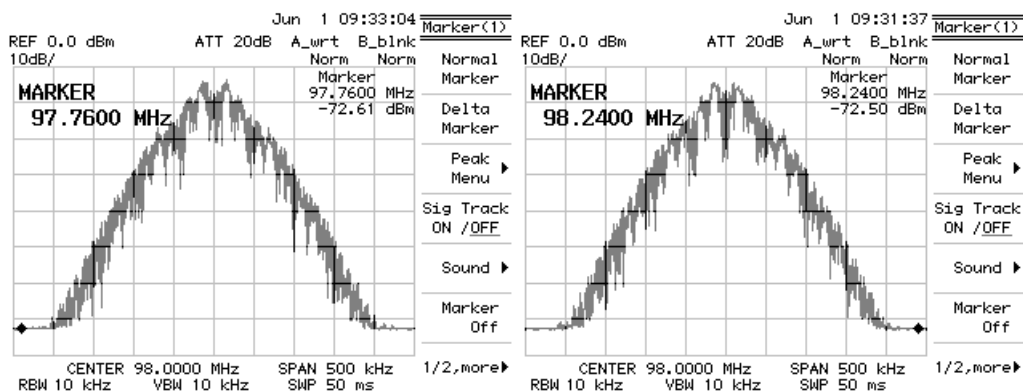


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc}$  => **Pass**

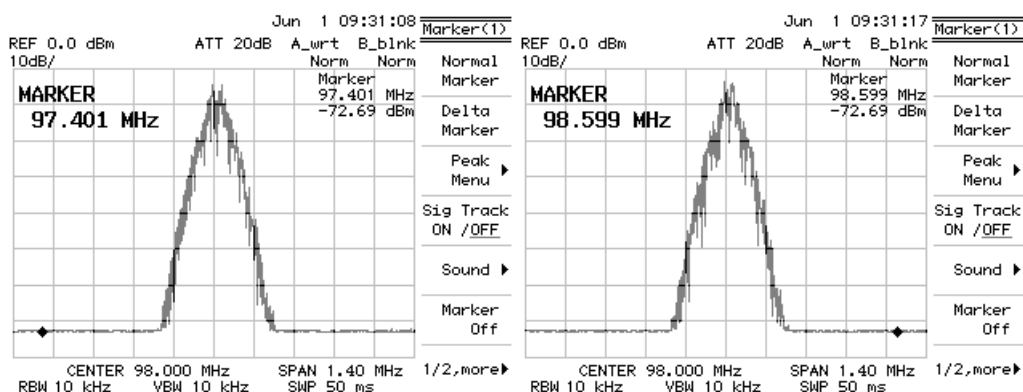
A.b.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



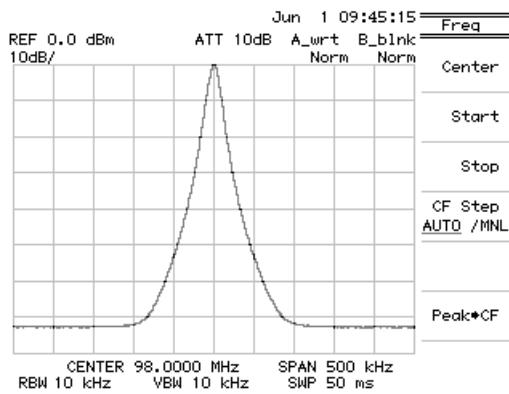
Markers at 240KHz from the carrier. Below 35dBc => **Pass**



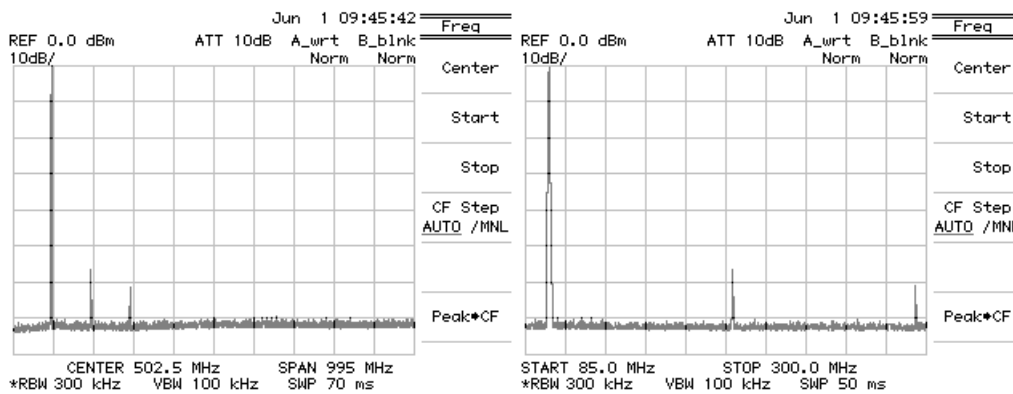
Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc}$  => **Pass**

A.c. Nominal power (6,25W = 25% power) 98MHz

A.c.1. Carrier without modulation (reference)

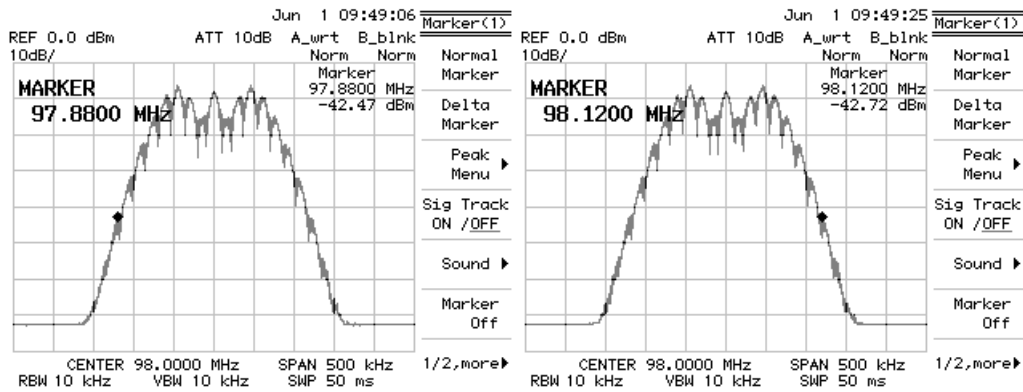


A.c.2. Out of 600KHz from carrier.

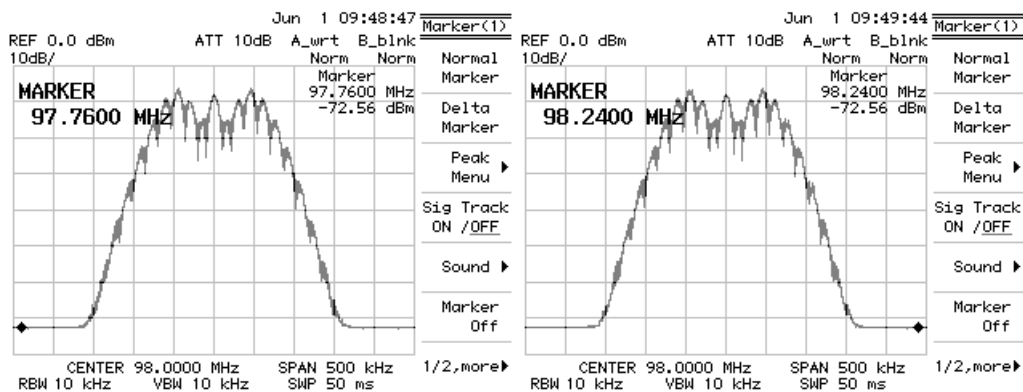


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc} \Rightarrow$  **Pass**

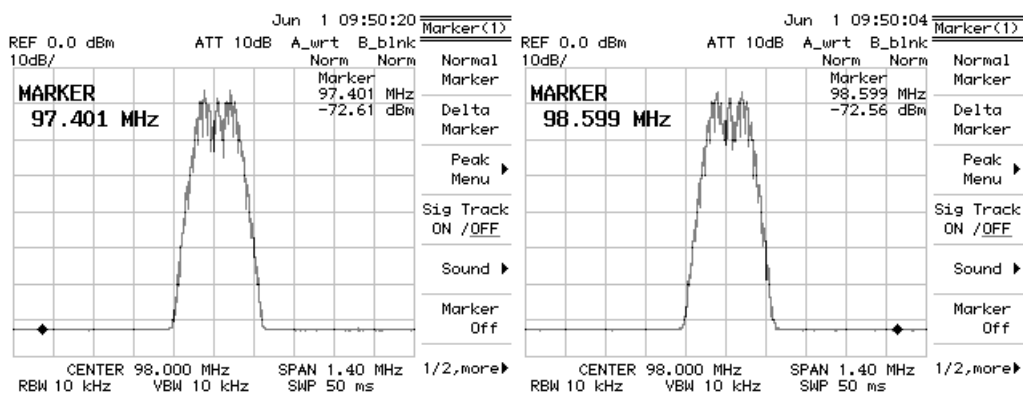
### A.c.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

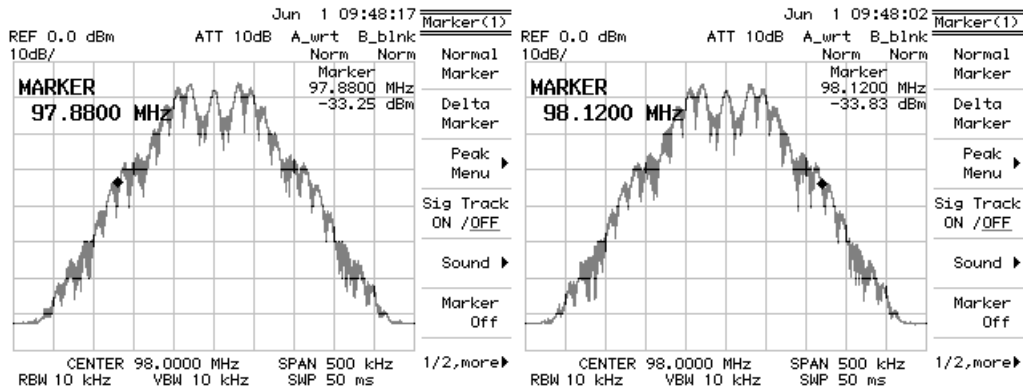


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

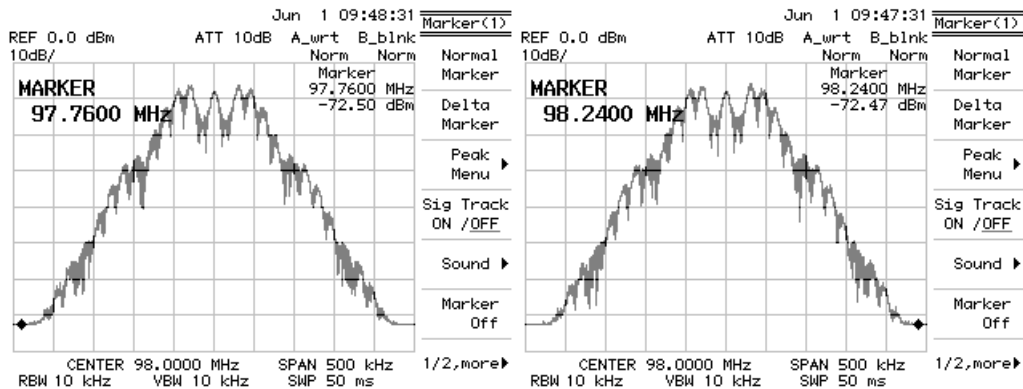


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

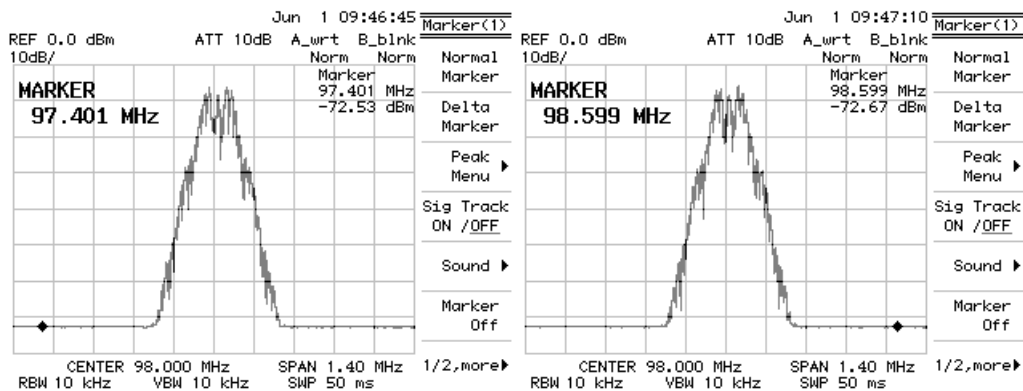
A.c.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

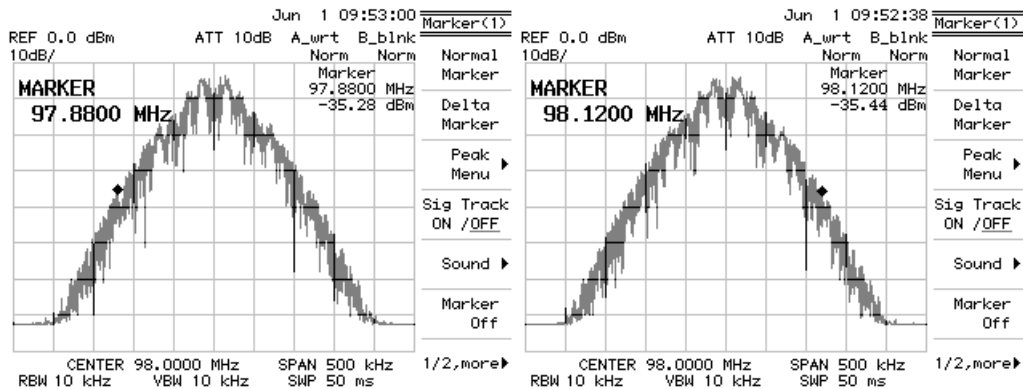


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

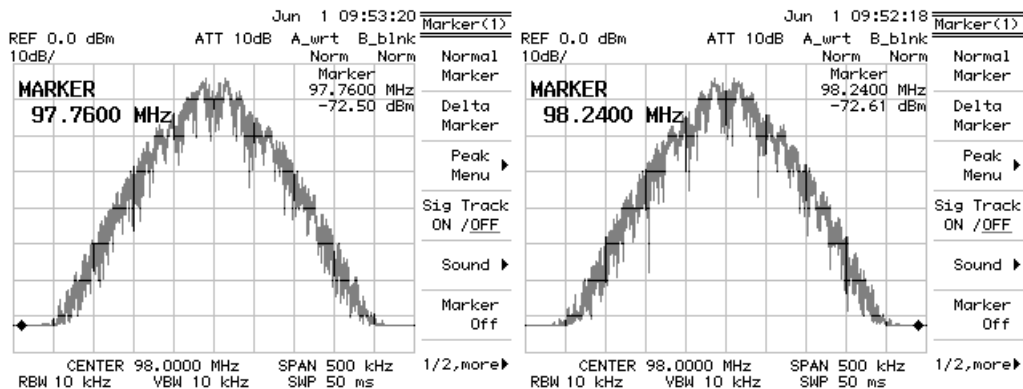


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

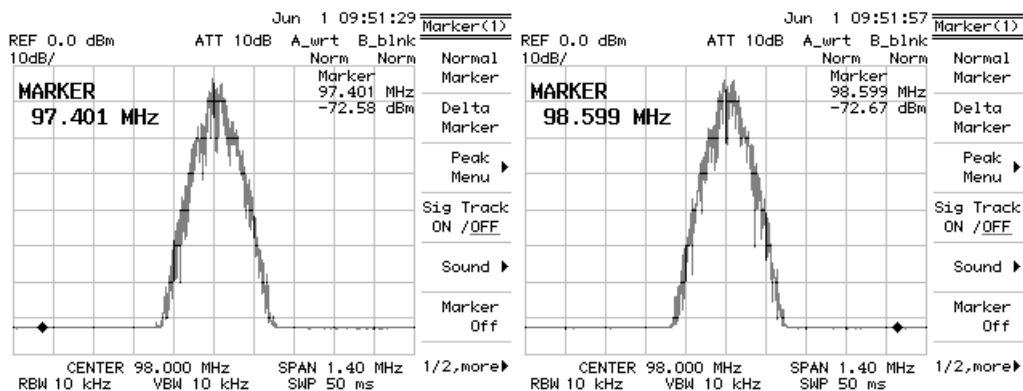
A.c.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



Markers at 240KHz from the carrier. Below 35dBc => **Pass**

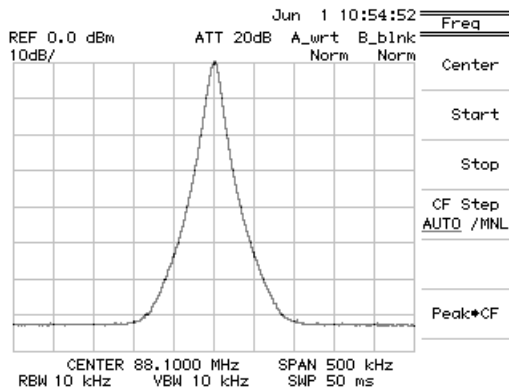


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

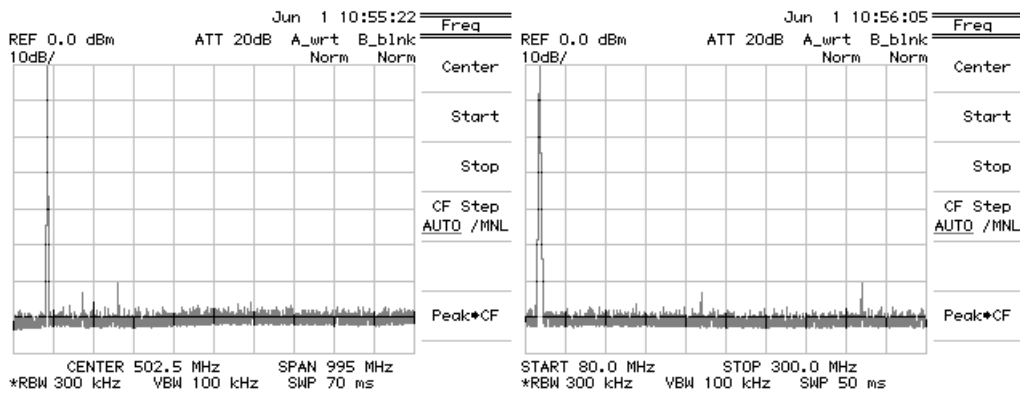
B. 88.1MHz

B.a. Nominal power (25W = 100% power) 88.1MHz

B.a.1. Carrier whitout modulation (reference)

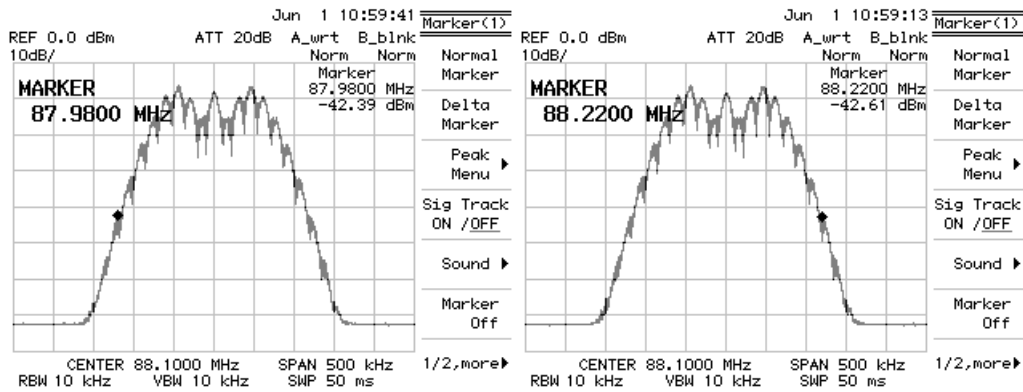


B.a.2. Out of 600KHz from carrier.

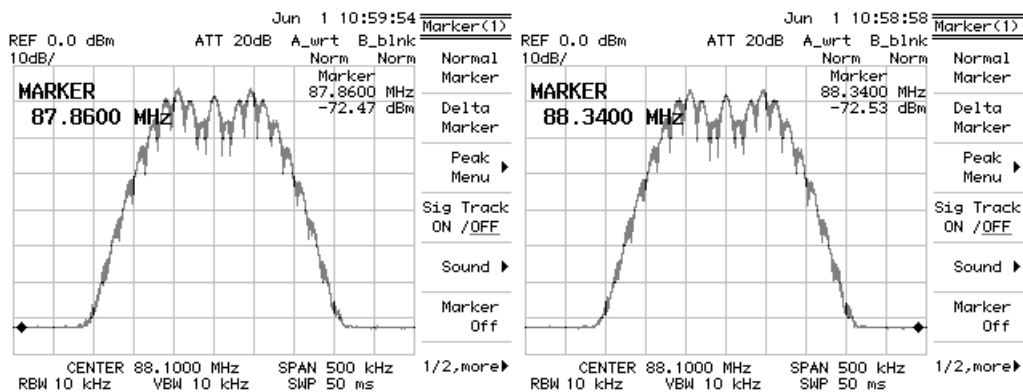


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 57\text{dBc}$  => **Pass**

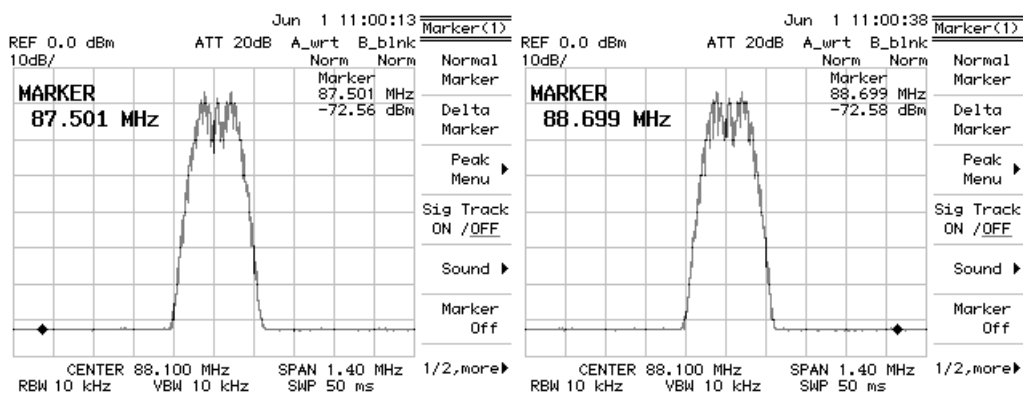
### B.a.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

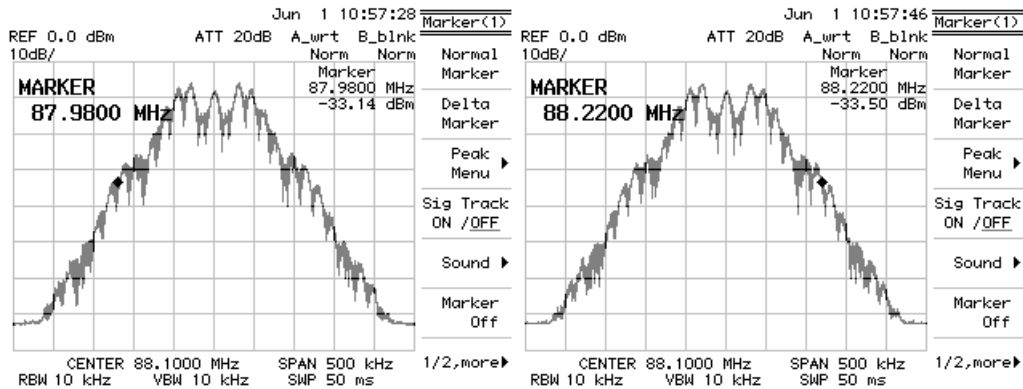


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

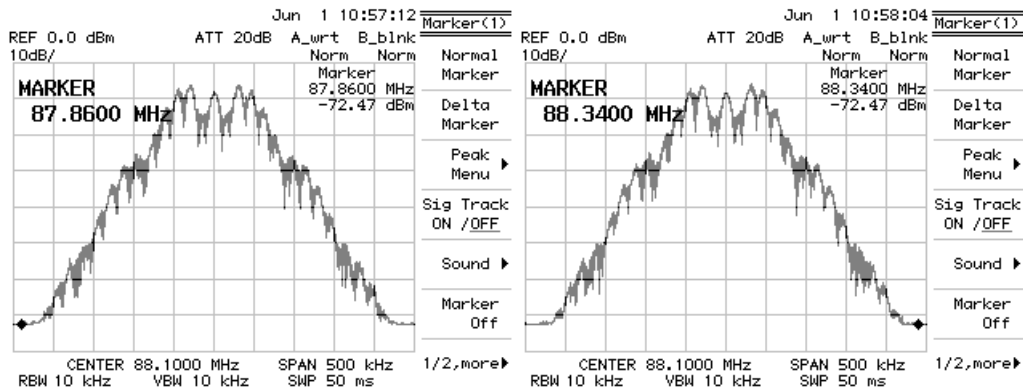


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

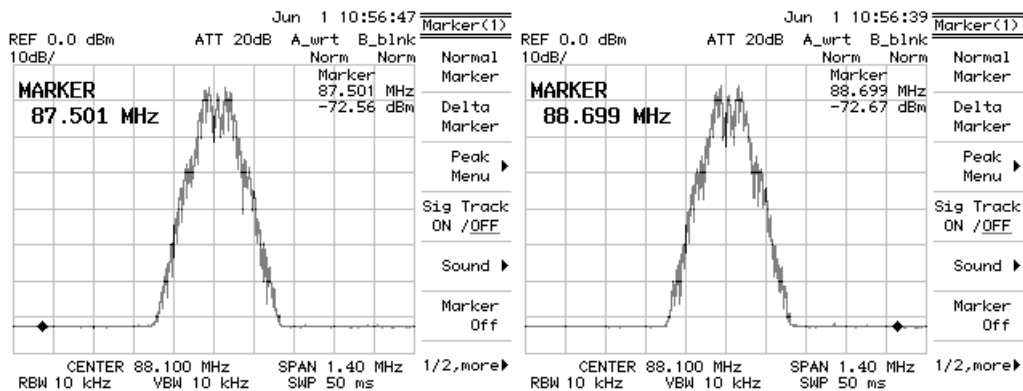
B.a.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

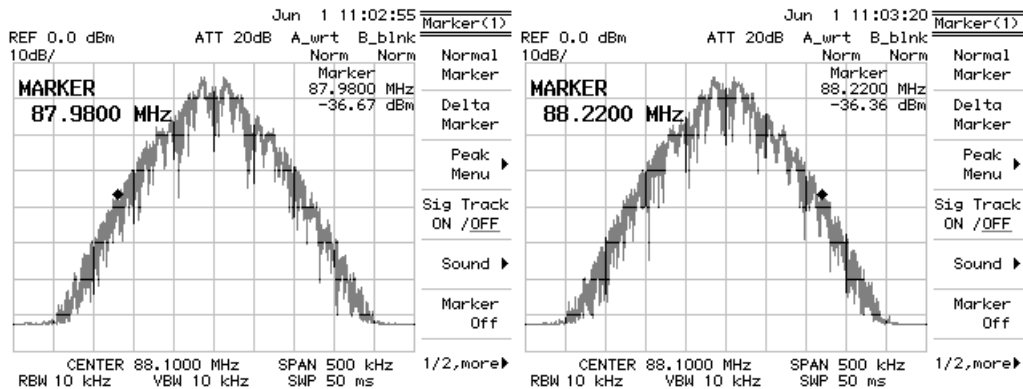


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

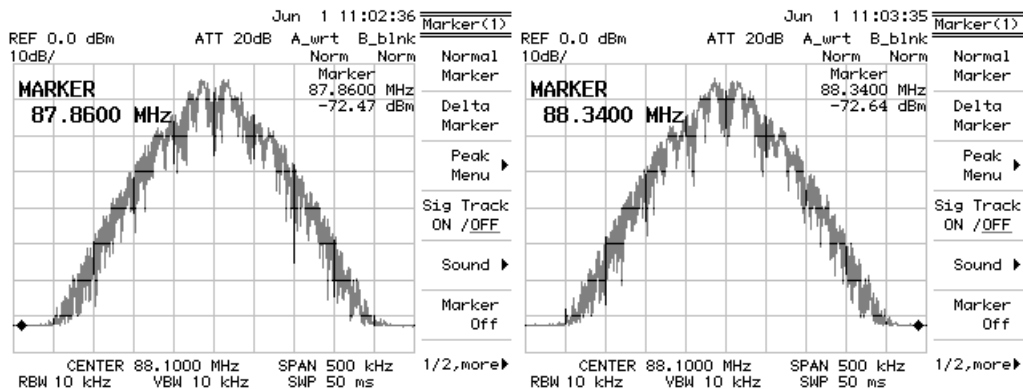


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

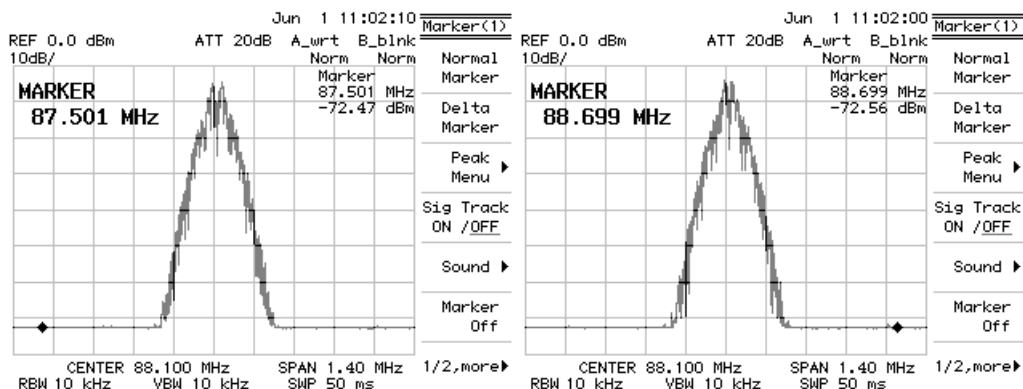
B.a.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



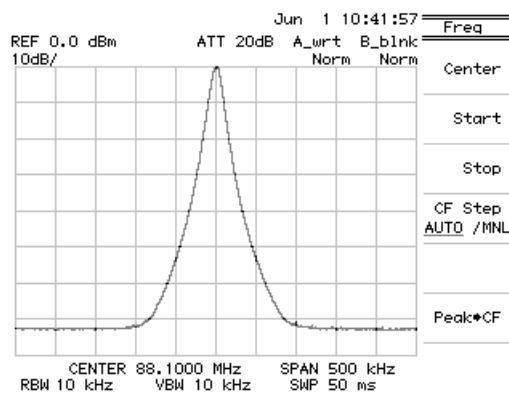
Markers at 240KHz from the carrier. Below 35dBc => **Pass**



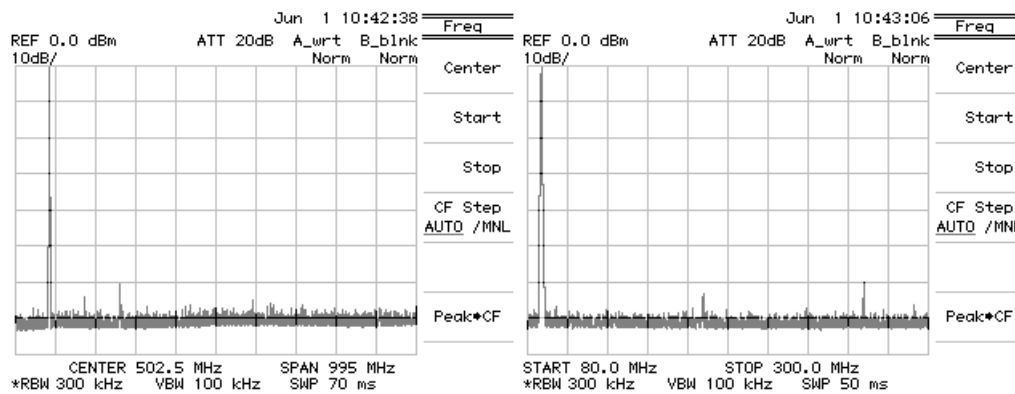
Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

B.b. Nominal power (26,25W = 105% power) 88.1MHz

B.b.1. Carrier without modulation (reference)

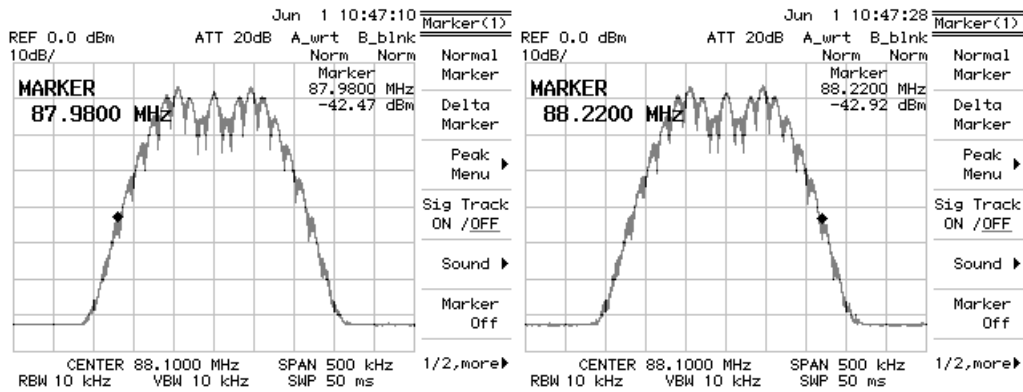


B.b.2. Out of 600KHz from carrier.

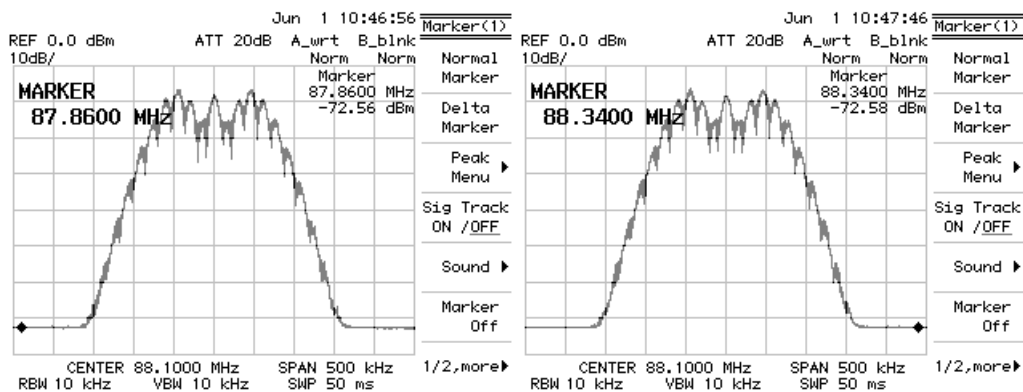


More than 600KHz away from the carrier. Below  $(43 + 10\log(P))=57.19\text{dBc}$  => **Pass**

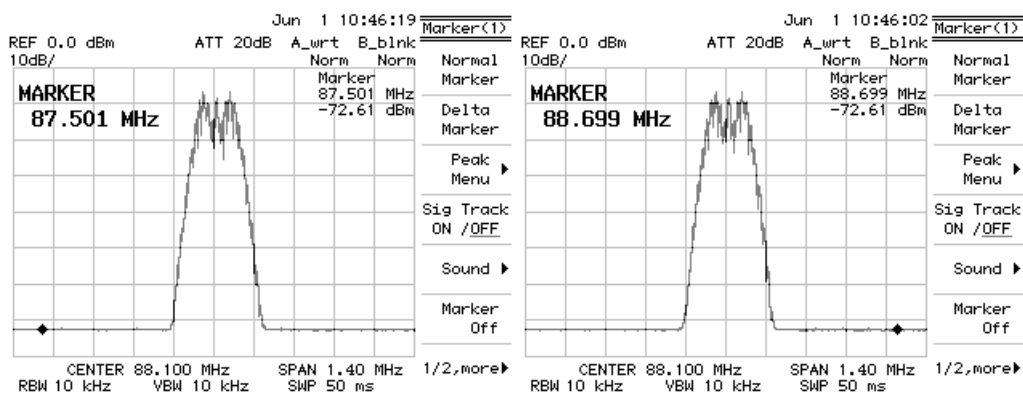
### B.b.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

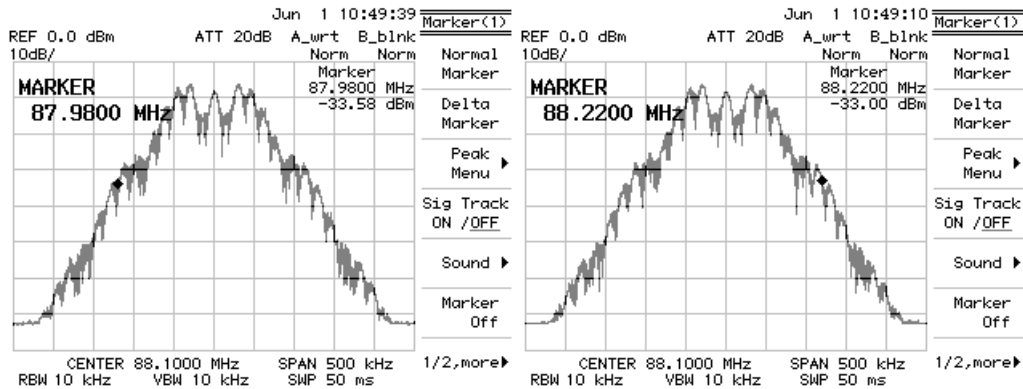


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

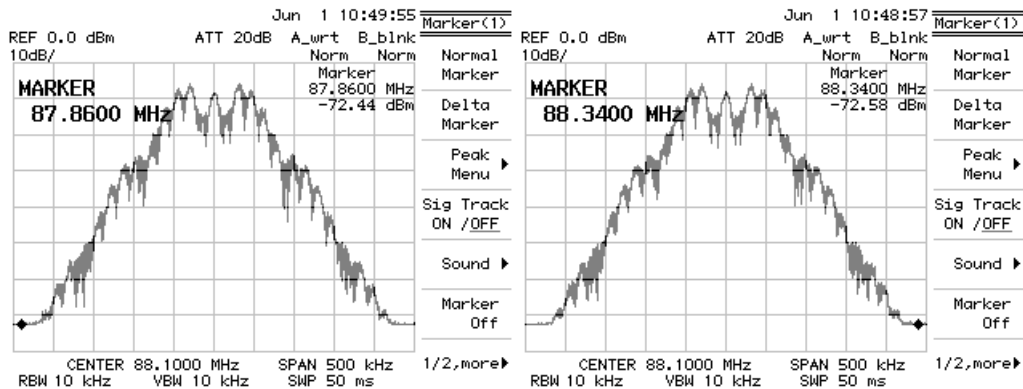


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57.19\text{dBc}$  => **Pass**

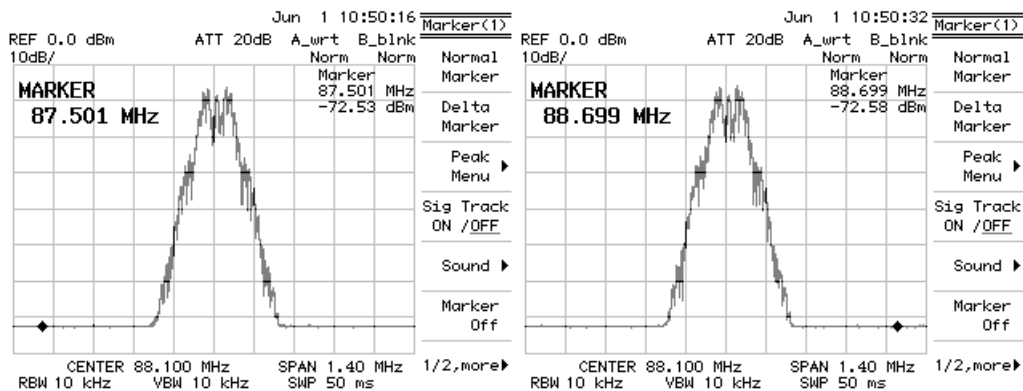
B.b.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

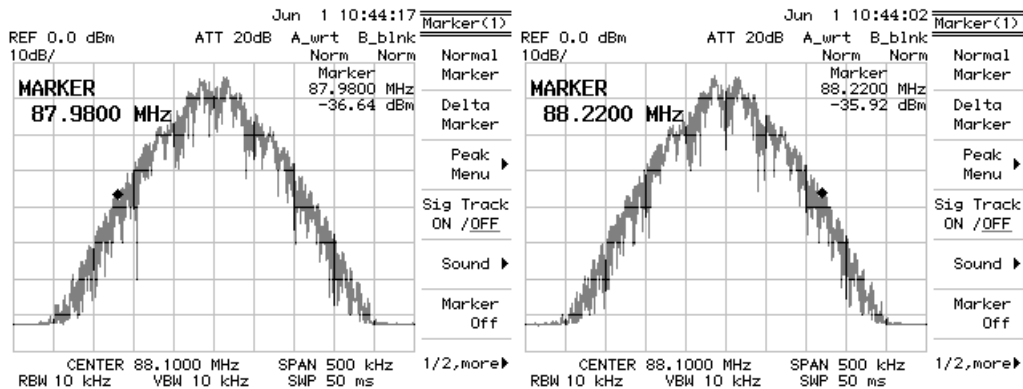


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

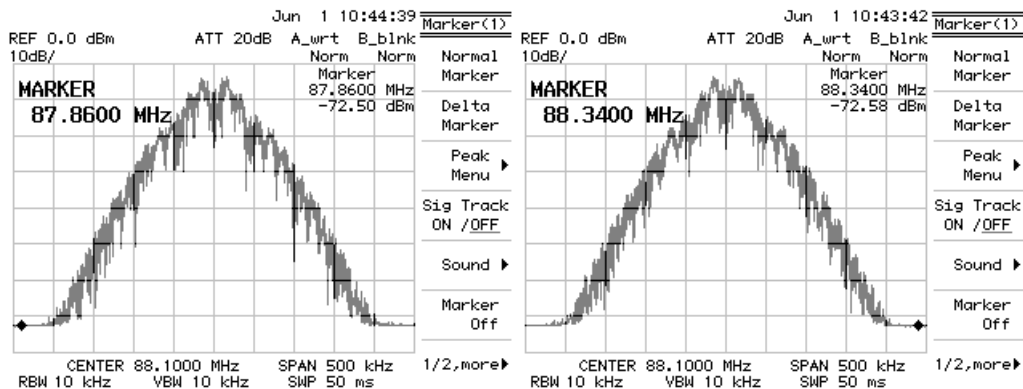


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57.19\text{dBc}$  => **Pass**

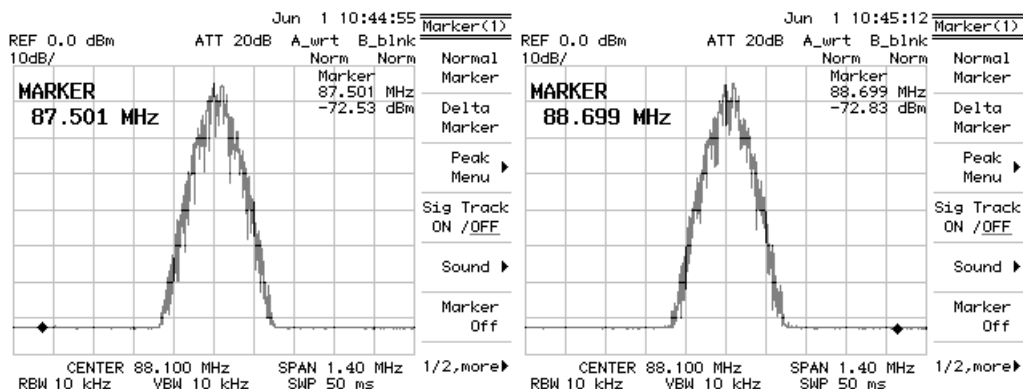
B.b.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



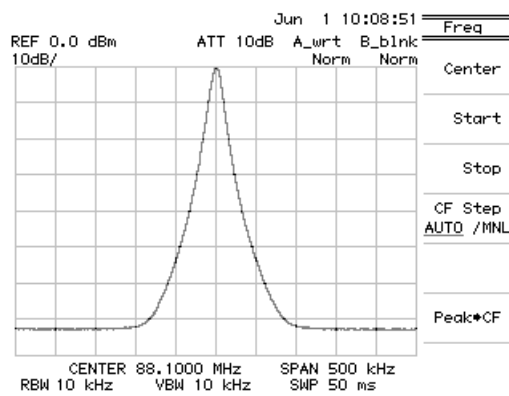
Markers at 240KHz from the carrier. Below 35dBc => **Pass**



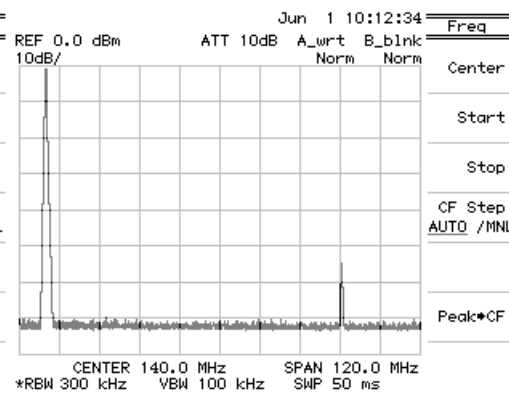
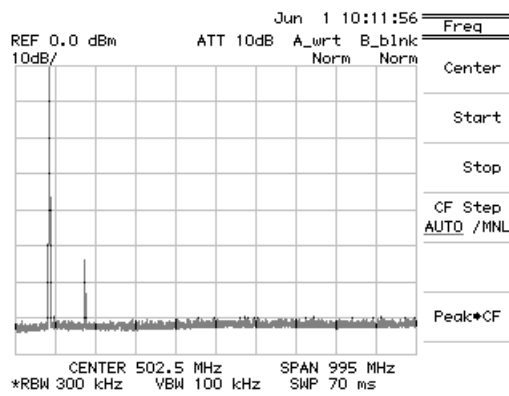
Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57.19\text{dBc}$  => **Pass**

B.c. Nominal power (6,25W = 25% power) 88.1MHz

B.c.1. Carrier without modulation (reference)

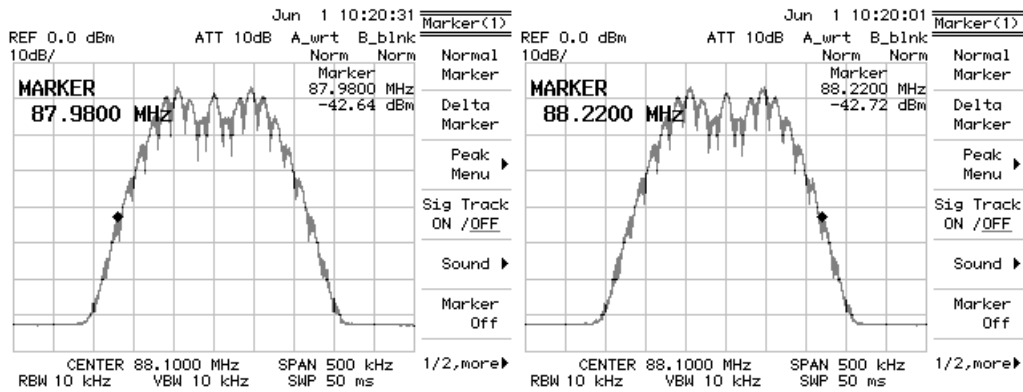


B.c.2. Out of 600KHz from carrier.

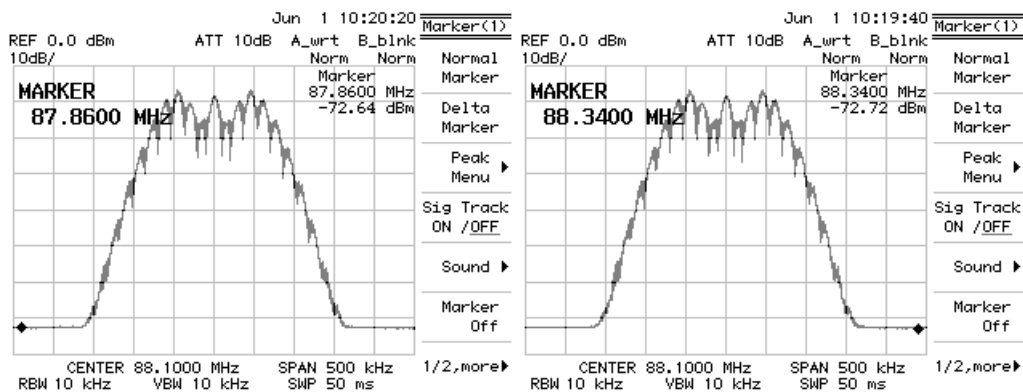


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

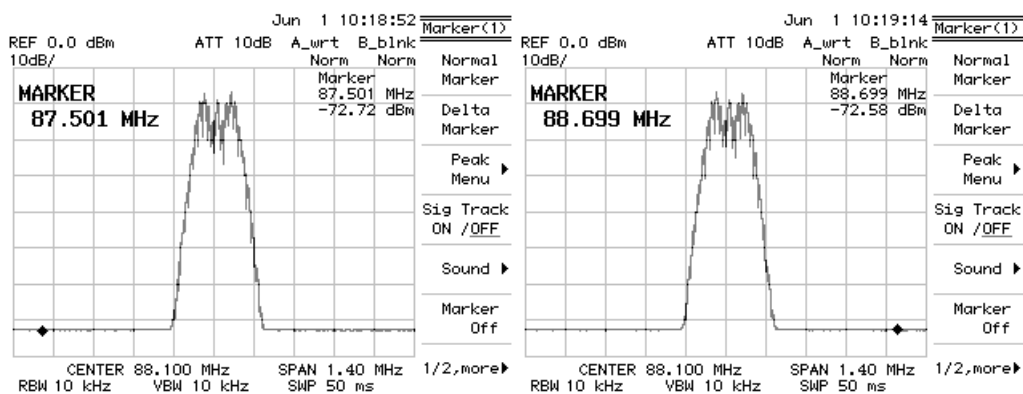
### B.c.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

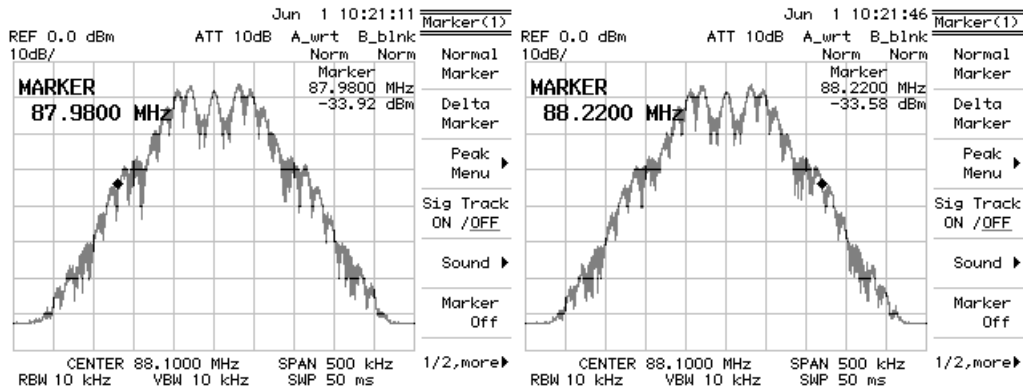


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

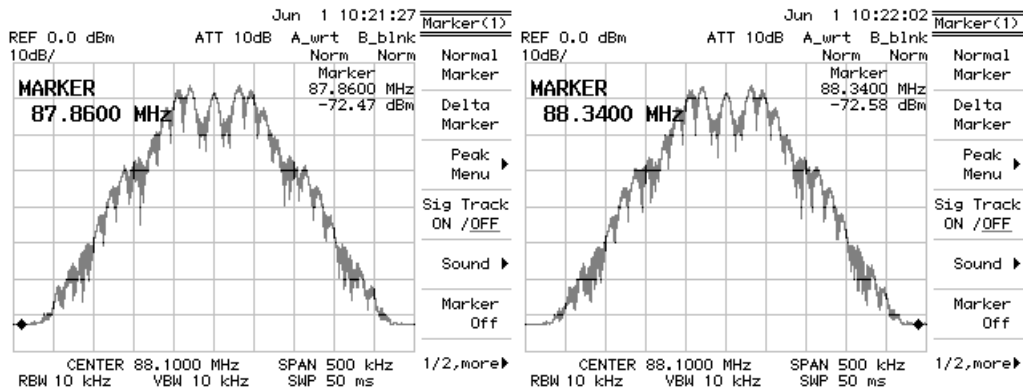


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

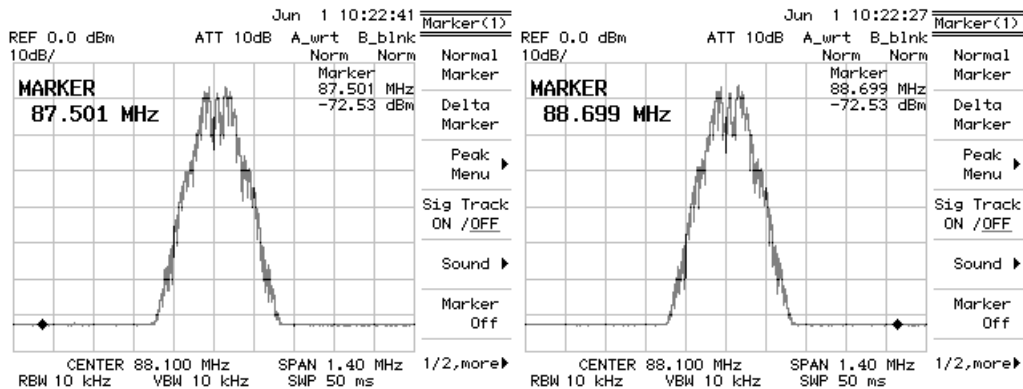
B.c.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

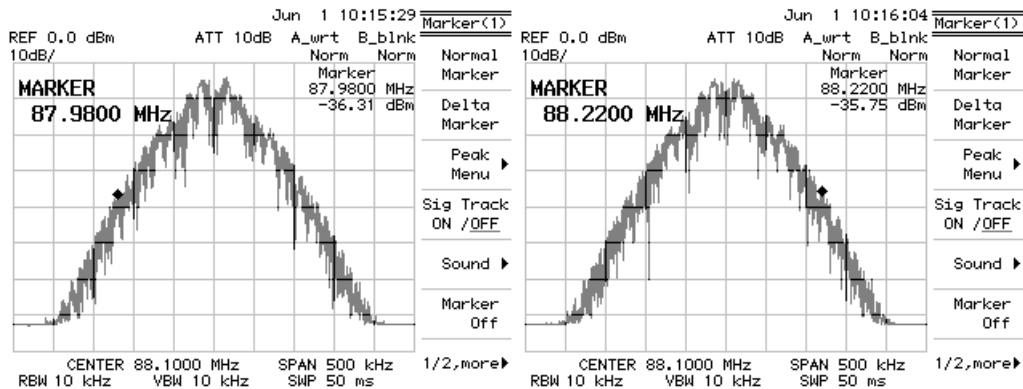


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

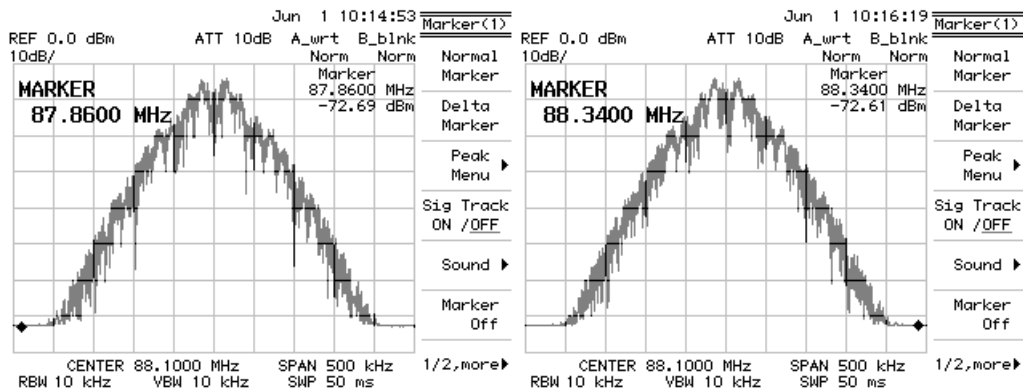


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

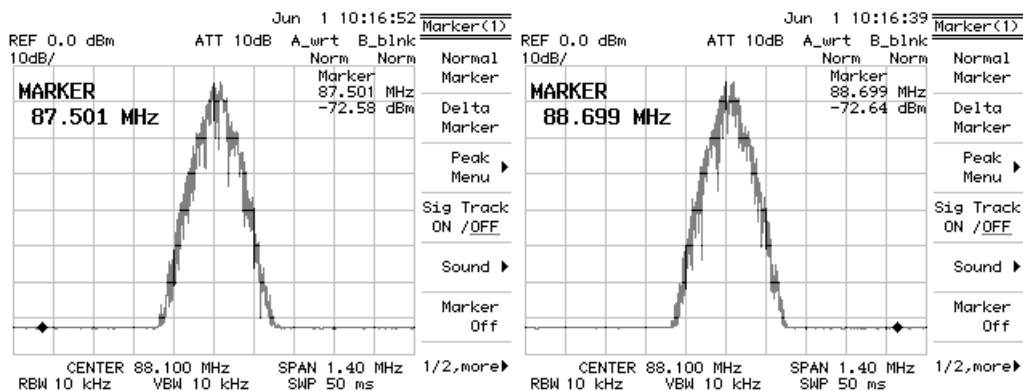
B.c.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



Markers at 240KHz from the carrier. Below 35dBc => **Pass**

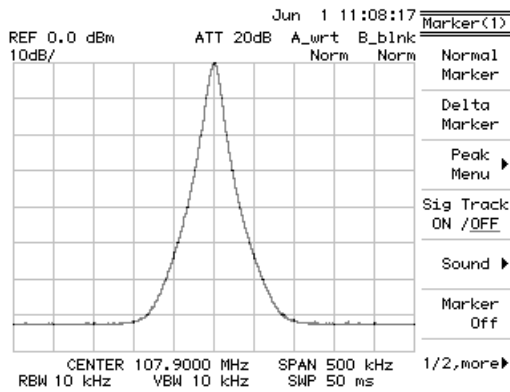


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

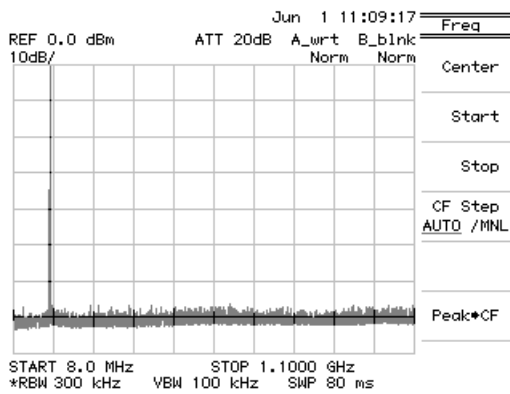
### C. 107.9MHz

C.a. Nominal power (25W = 100% power) 107.9MHz

C.a.1. Carrier whitout modulation (reference)

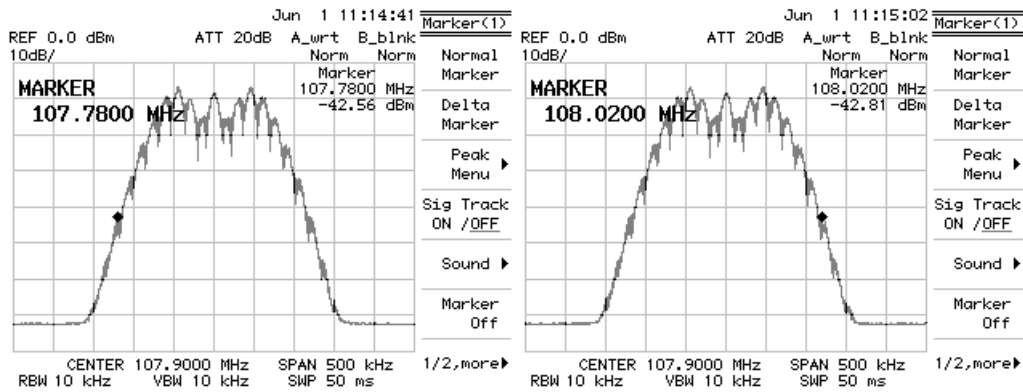


C.a.2. Out of 600KHz from carrier.

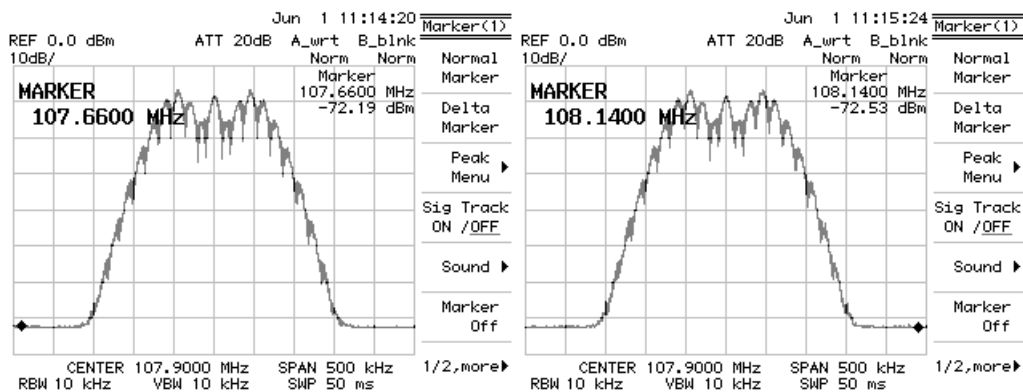


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 57\text{dBc}$  => **Pass**

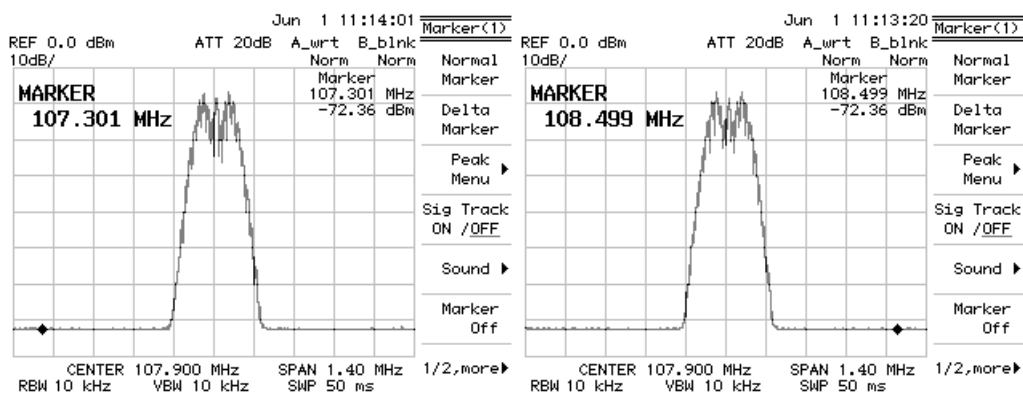
### C.a.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

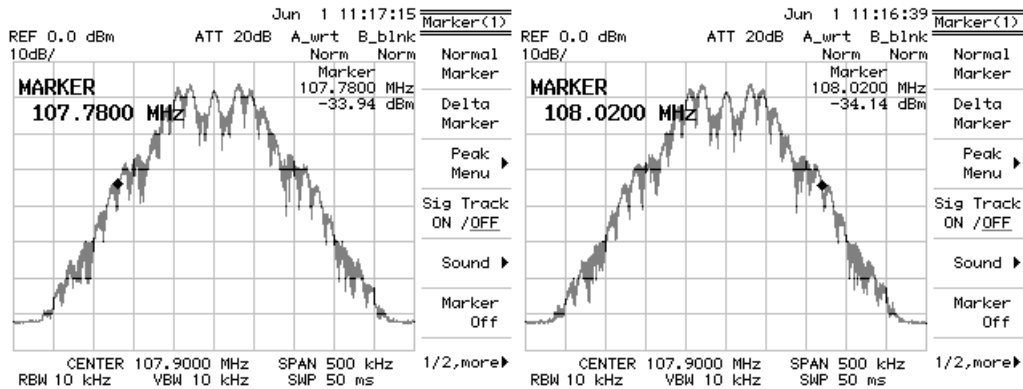


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

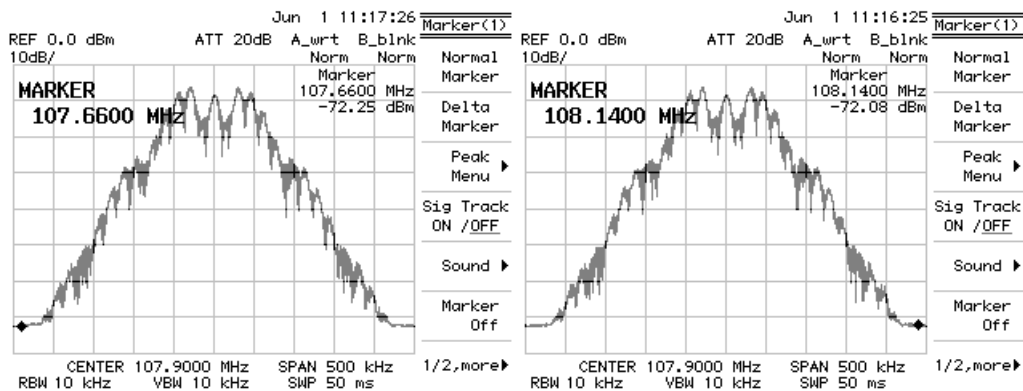


More than 600KHz away from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

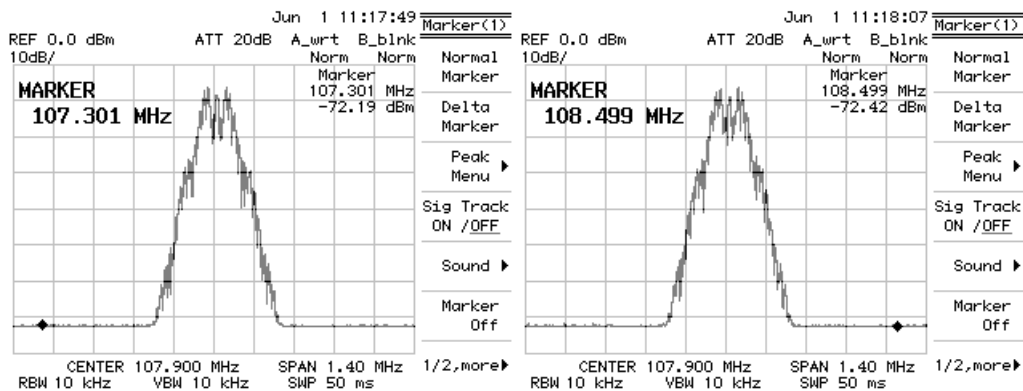
C.a.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

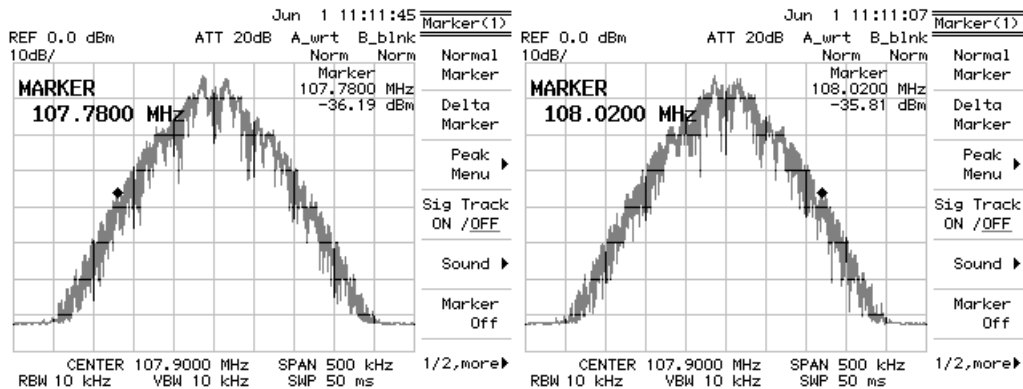


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

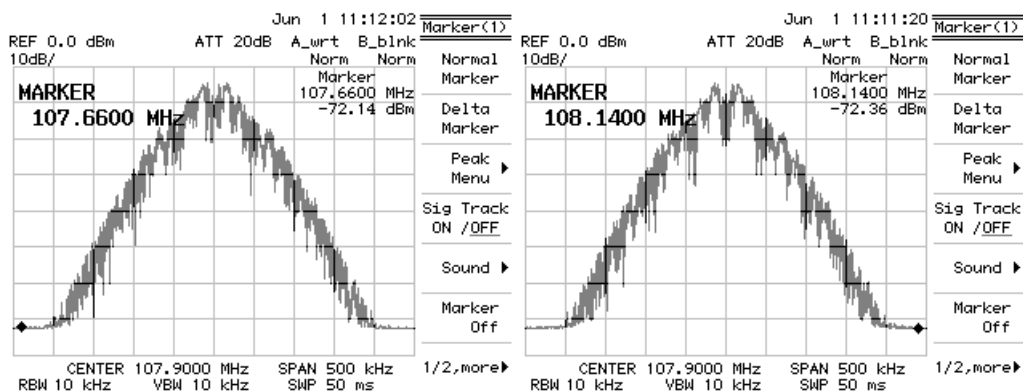


Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

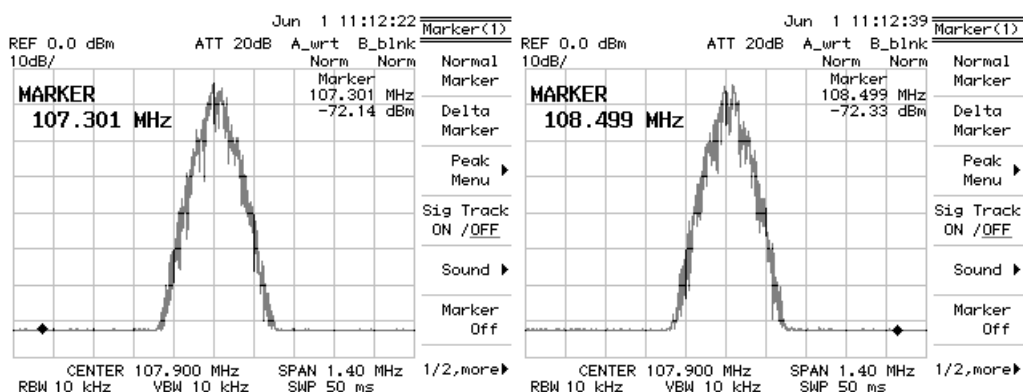
C.a.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



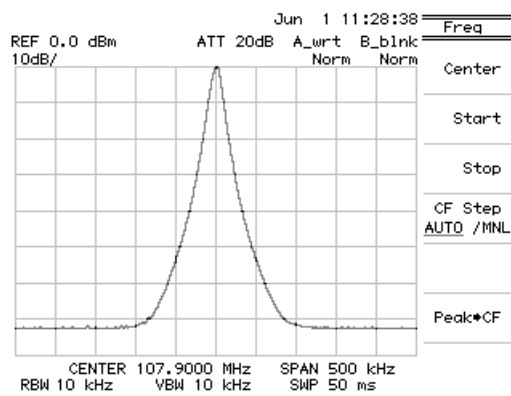
Markers at 240KHz from the carrier. Below 35dBc => **Pass**



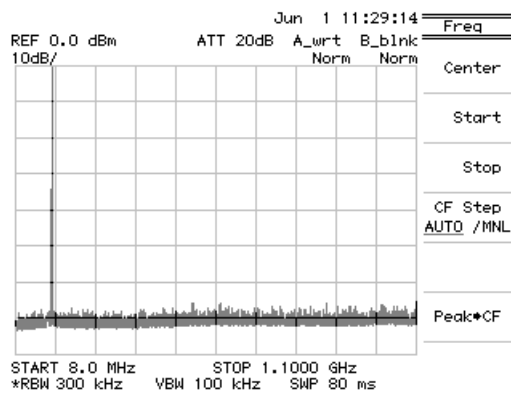
Markers at 600KHz from the carrier. Below  $(43 + 10\log(P))=57\text{dBc}$  => **Pass**

C.b. Nominal power (26.25W = 105% power) 107.9MHz

C.b.1. Carrier without modulation (reference)

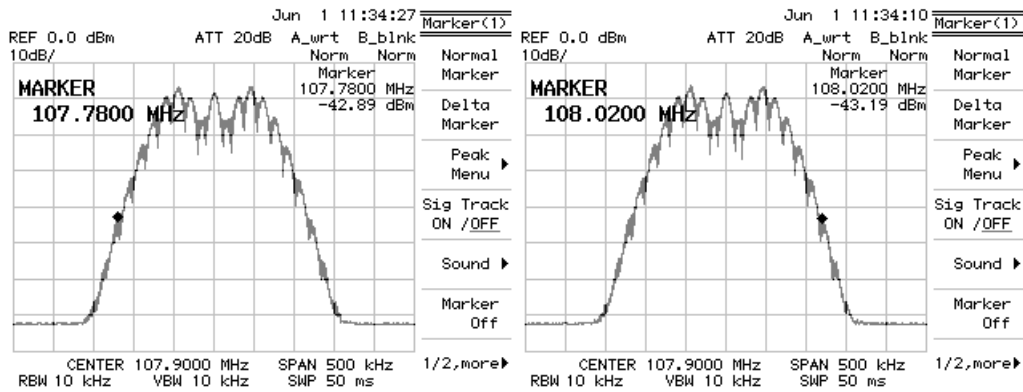


C.b.2. Out of 600KHz from carrier.

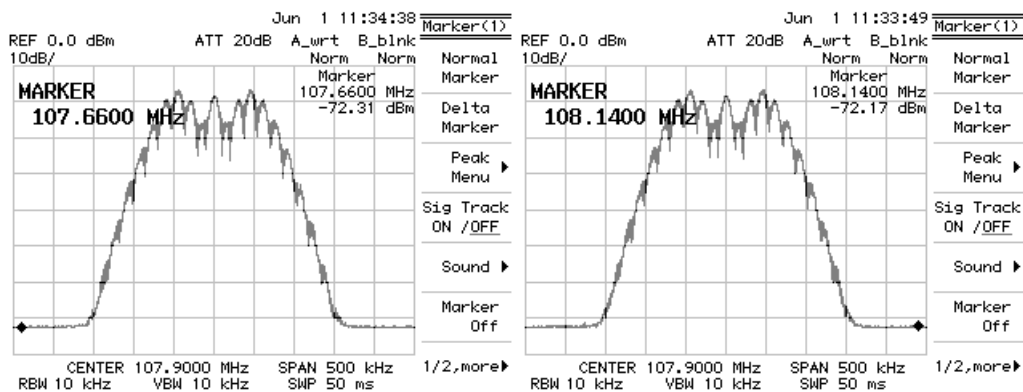


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc} \Rightarrow$  **Pass**

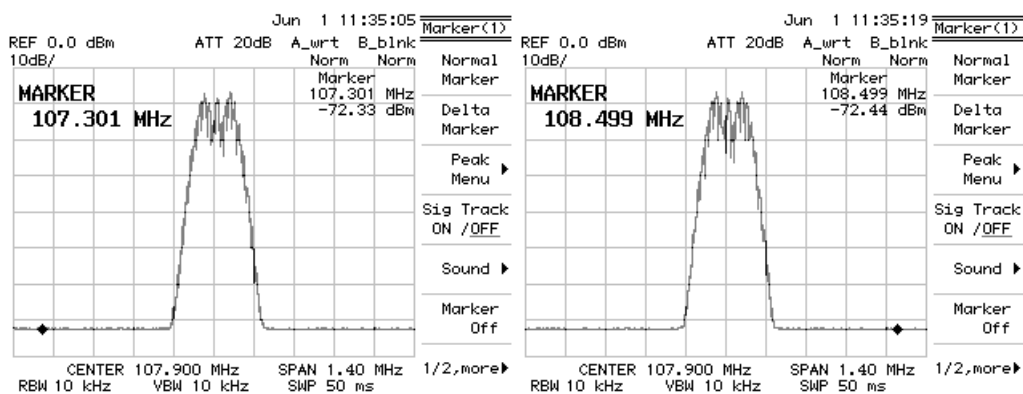
### C.b.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

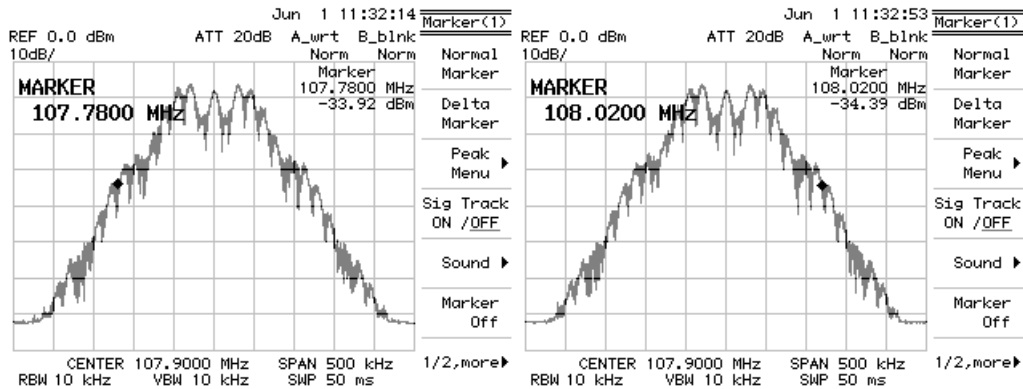


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

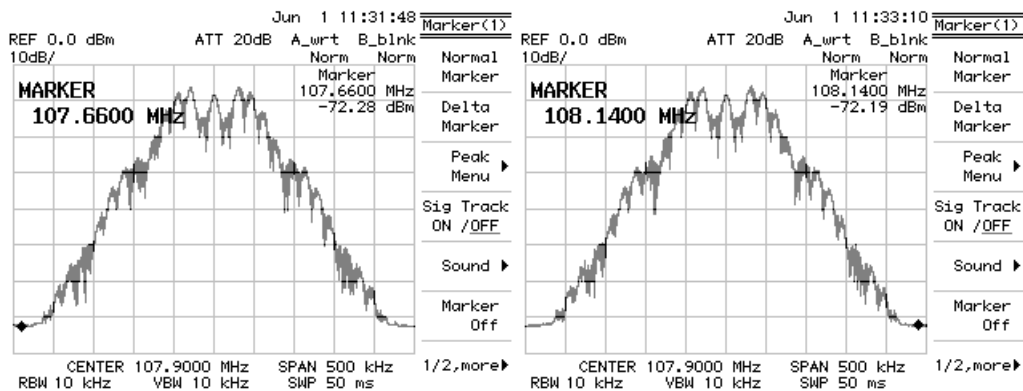


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc}$  => **Pass**

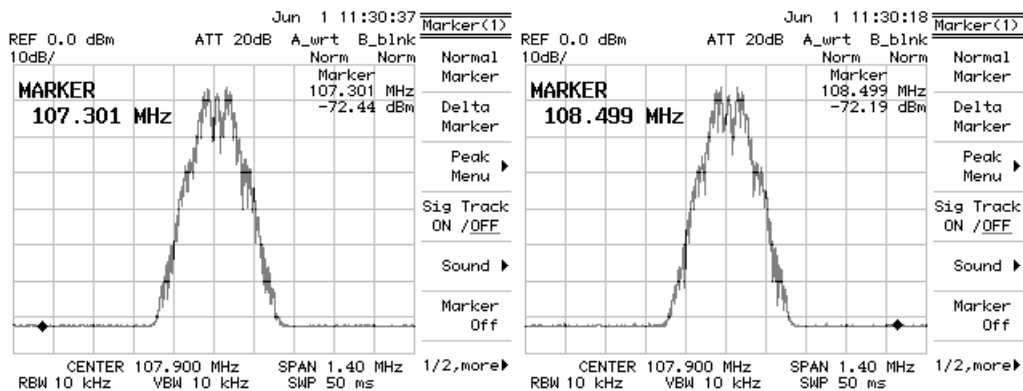
C.b.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

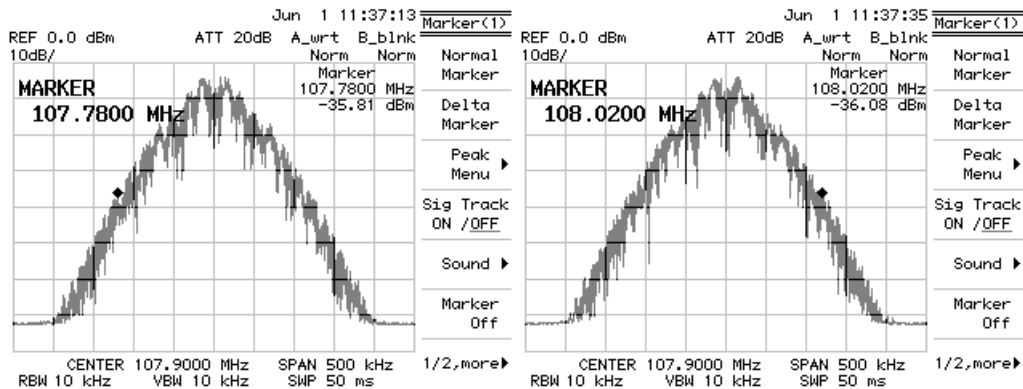


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

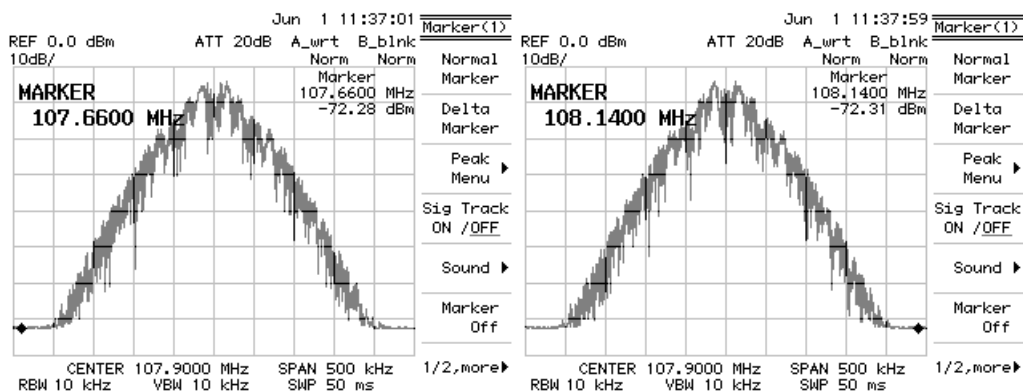


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc}$  => **Pass**

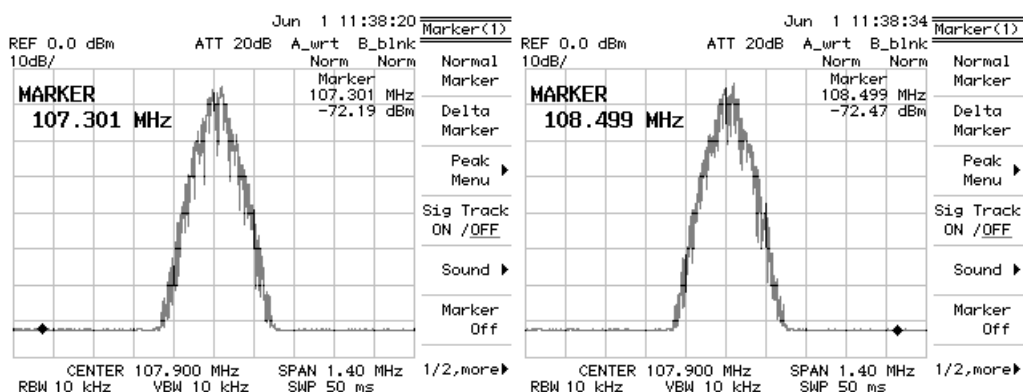
C.b.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



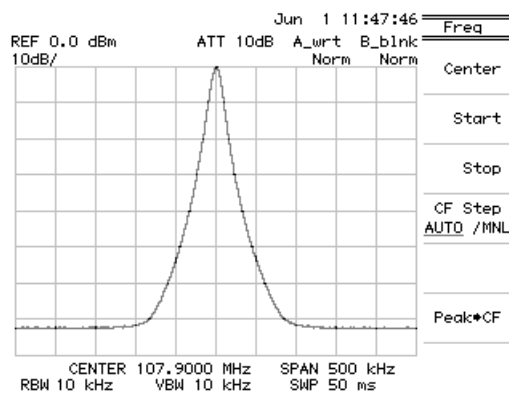
Markers at 240KHz from the carrier. Below 35dBc => **Pass**



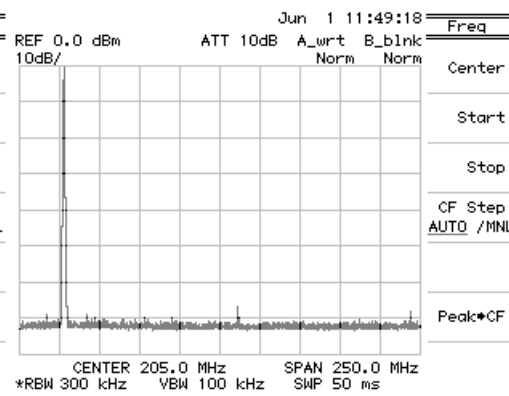
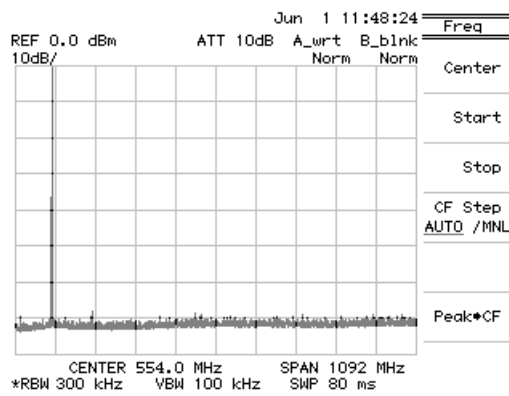
Markers at 600KHz from the carrier. Below  $(43 + 10\log(P)) = 57,19\text{dBc}$  => **Pass**

C.c. Nominal power (6.25W = 25% power) 107.9MHz

C.c.1. Carrier without modulation (reference)

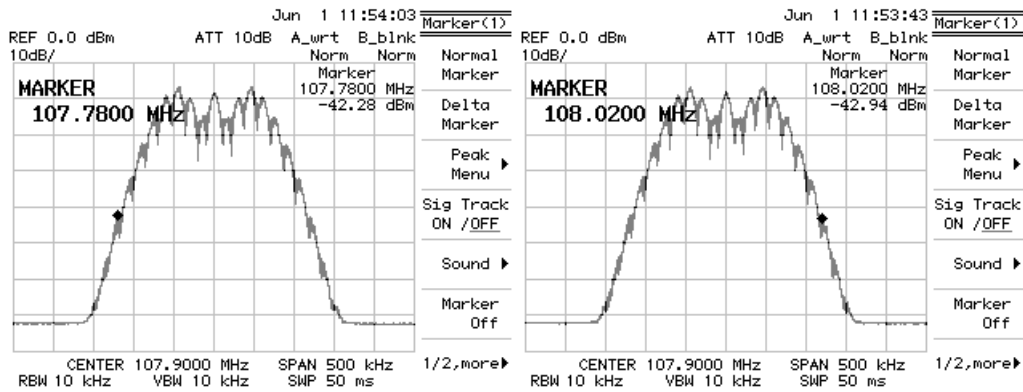


C.c.2. Out of 600KHz from carrier.

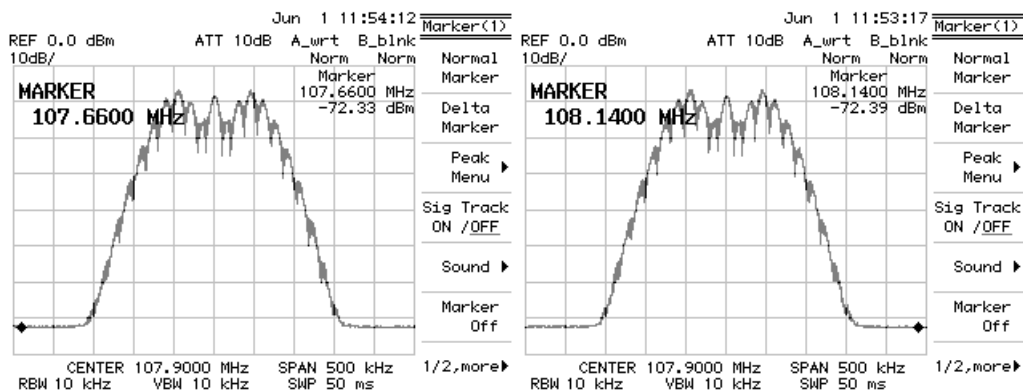


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

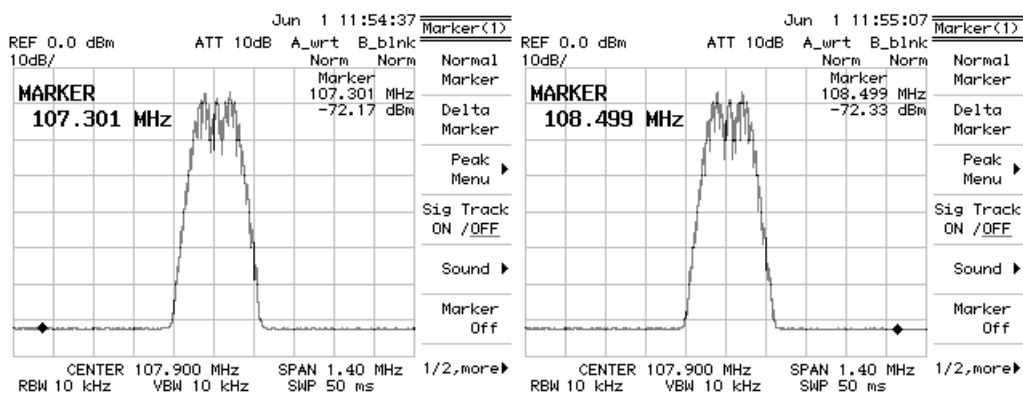
### C.c.3. Mono (15KHz, 85% modulation=63.75KHz)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

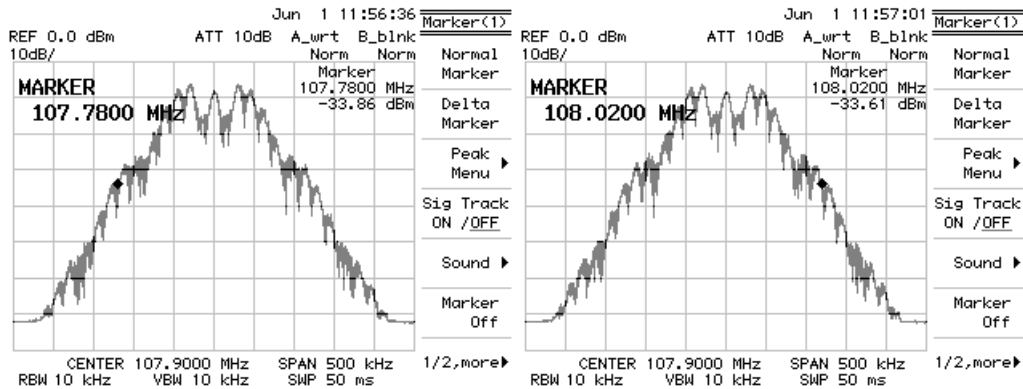


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

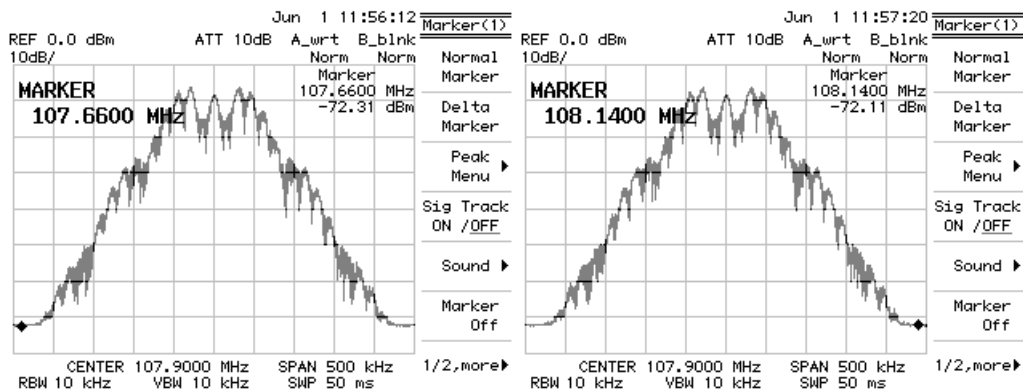


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

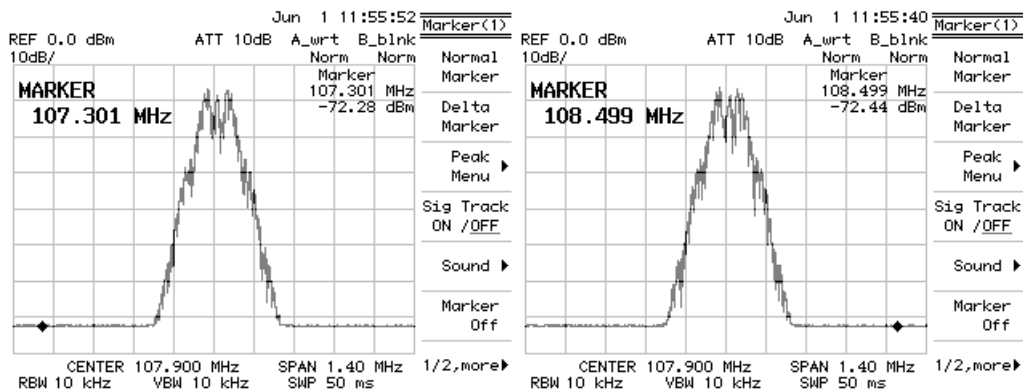
C.c.4. Mono + Subcarrier (15KHz 70% modulation =52.5KHz + 67KHz 15% modulation =11.25KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**

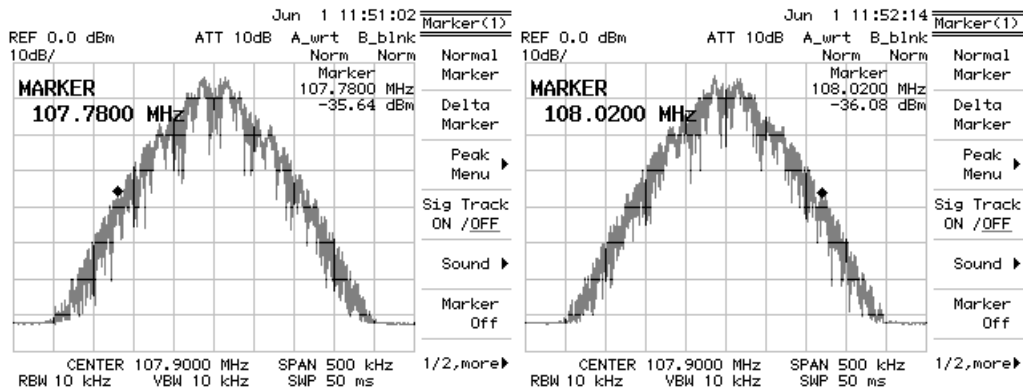


Markers at 240KHz from the carrier. Below 35dBc => **Pass**

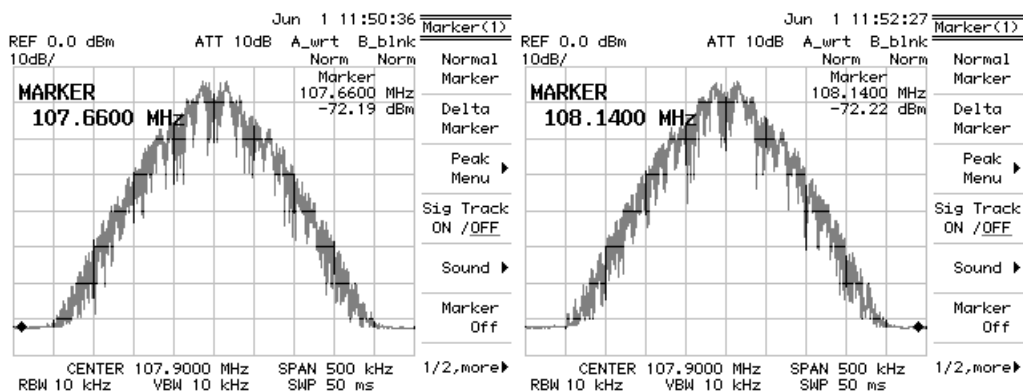


More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50,96\text{dBc}$  => **Pass**

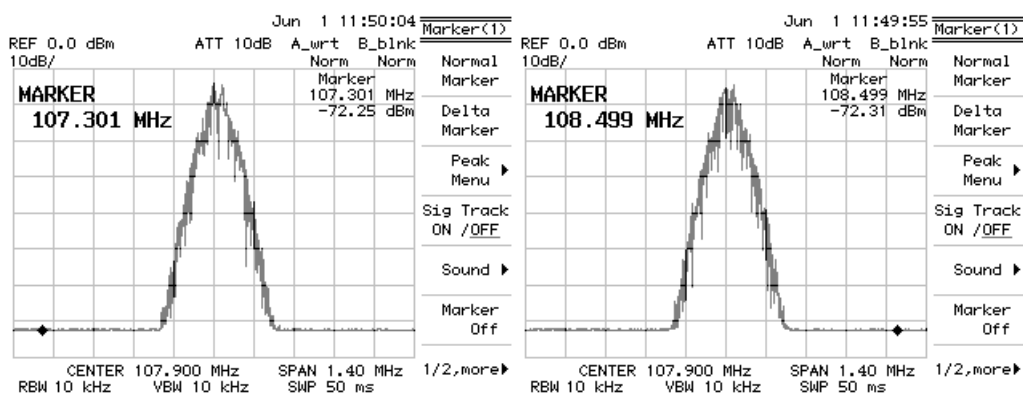
C.c.5. Stereo (15KHz main subchannel at 38% modulation=28.5KHz + 15KHz stereo subchannel at 38% modulation=28.5KHz + Pilot tone 19KHz at 9% modulation=6.75KHz. Total modulation=85%)



Markers at 120KHz from the carrier. Below 25dBc => **Pass**



Markers at 240KHz from the carrier. Below 35dBc => **Pass**



More than 600KHz away from the carrier. Below  $(43 + 10\log(P)) = 50.96\text{dBc}$  => **Pass**

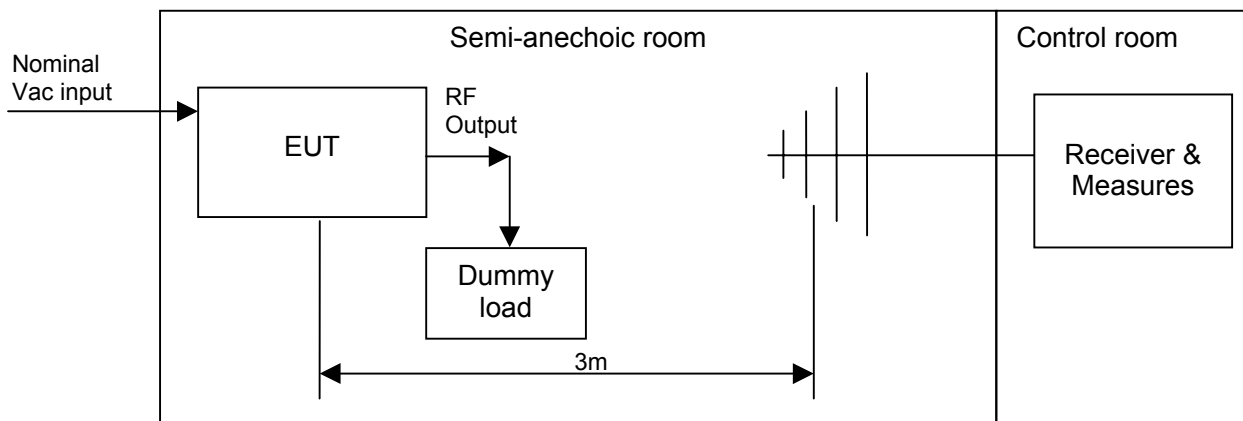
- CABINET RADIATION

Particular Conditions:

- Without modulation input.
- Temperature 17°C
- Measures done at 100% of nominal power.
- Measurements done at 98MHz
- Nominal AC voltage input
- Acceptable limits: -60dBc
- This test has been done in an external laboratory (Ministerio de industria, turismo y comercio de España; Dirección general de telecomunicaciones y tecnologías de la información; Radiofrequency Laboratory) in the following conditions and with the following instruments:

| Equipment                           | Manufacturer  | Model   | Serial Number |
|-------------------------------------|---------------|---------|---------------|
| Receiver                            | Rodhe&Schwarz | ESIB 26 | 834000/003    |
| Measurement Software                | Rodhe&Schwarz | ES-K1   | 2526          |
| Biconic Antenna (20-200MHz)         | EMCO          | 3104    | 3210          |
| Log-periodic Antenna (200-1000 MHz) | ETS           | 3148    | 35962         |
| Mast position Controller            | EMCO          | 3146    | 8905-1356     |
| Table position Controller           | EMCO          | 1051    | 1097          |
| Semi-anechoic Room                  | IRSA          | CSA 3m  | -             |
| Control Room                        | IRSA          | -       | -             |
| Cable                               | Shuner        | RG214   | CA1           |
| Cable                               | Shuner        | RG214   | CA2           |
| Cable                               | Shuner        | RG214   | SC1           |
| Cable                               | Shuner        | SF106   | SC4           |
| Cable                               | Shuner        | SF106   | A1            |
| Cable                               | Shuner        | RG214   | B1            |
| Cable                               | Shuner        | SF104   | CA9           |
| Cable                               | Shuner        | MF141   | CA8           |
| Cable                               | Shuner        | MF141   | CA10          |

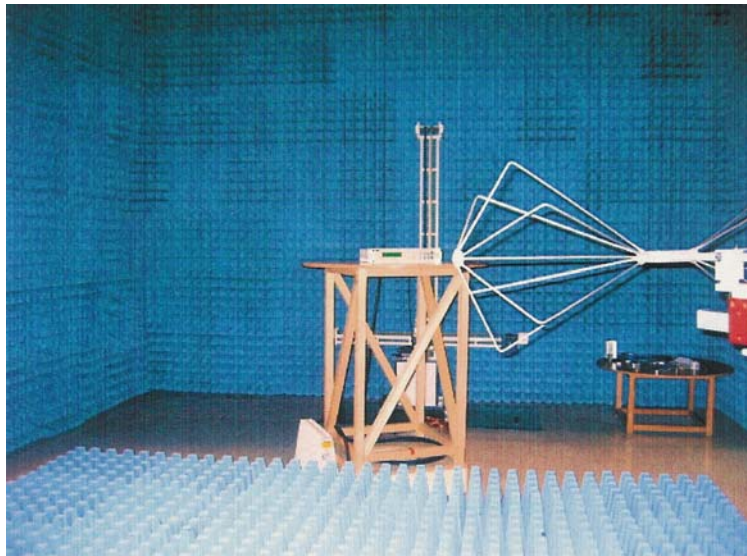
Configuration:



### Procedure:

- 1) The transmitter is energized at nominal output power over a dummy load.
- 2) For every harmonic or spurious signal the receiving antenna is adjusted to have maximum signal rotating the antenna horizontally and adjusting polarization.
- 3) Repeat at the main 4 directions every  $90^\circ$  of the equipment under test.
- 4) Measure until the 10<sup>th</sup> harmonic.

### Results:



### Results:

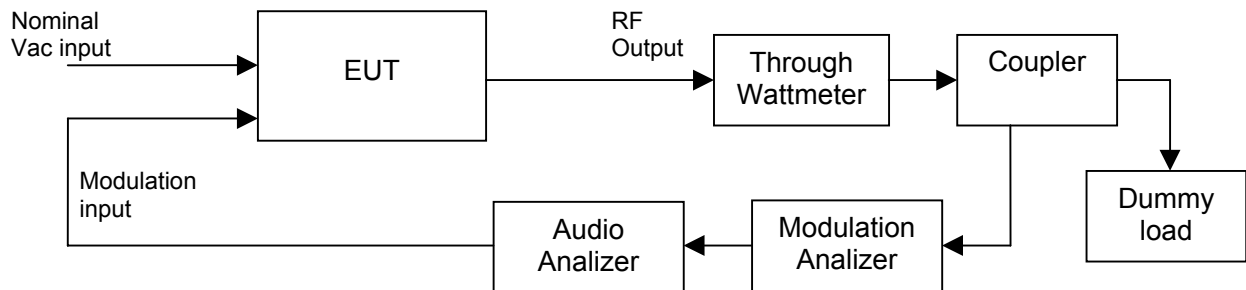
For 25W of RF power the corresponding level at –60dB is of -16dBm. Every signal appearing is below this limit, therefore the result is: **Pass**

- PREEMPHASIS (75µs)

Particular Conditions:

- With modulation input.
- Temperature 25°C
- Measures done at 100% of nominal power.
- Measurements done at 98MHz
- Nominal AC voltage input
- Acceptable limits: As in figure 2 of 73.333 of the 47 CFR Ch1

Configuration:



Procedure:

1. With mono modulation input, adjust the level of the audio input signal (400Hz tone) to modulate 75KHz (100%), this level value is taken as reference (0dB)
2. The frequency of the input signal is varied form 30Hz to 15KHz adjusting the level of the audio signal to keep 75KHz deviation. These levels are tabulated and verified with the limits of Figure 2 CFR Title 47 Ch73.373
3. The attenuation of the audio input signal is normalized to the reference level of 400Hz 75KHz deviation.
4. The result is compared to the figure 2 of 73.333 of the 47 CFR Ch1

Results:

| Frequency (Hz) | Attenuation (dBm)<br>Normalized | Pass /<br>Not Pass |
|----------------|---------------------------------|--------------------|
| 30             | -0,19                           | Pass               |
| 100            | -0,15                           | Pass               |
| 200            | -0,12                           | Pass               |
| 300            | -0,07                           | Pass               |
| 400            | 0                               | Pass               |
| 600            | 0,16                            | Pass               |
| 1000           | 0,7                             | Pass               |
| 1500           | 0,808                           | Pass               |
| 2000           | 2,6                             | Pass               |
| 3000           | 4,63                            | Pass               |
| 4000           | 6,48                            | Pass               |
| 5000           | 8,09                            | Pass               |
| 6000           | 9,45                            | Pass               |
| 7000           | 10,69                           | Pass               |

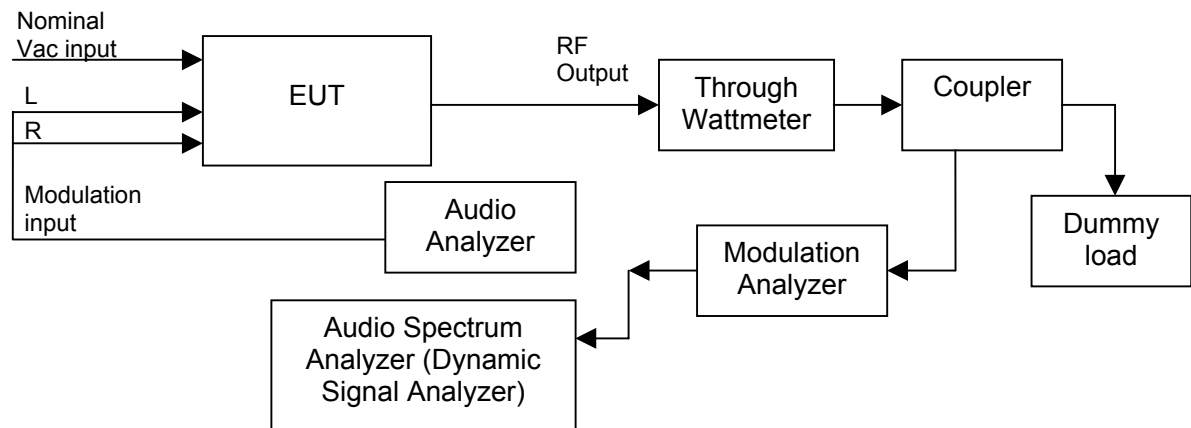
|       |       |      |
|-------|-------|------|
| 10000 | 13,55 | Pass |
| 12000 | 15,07 | Pass |
| 15000 | 16,89 | Pass |

- STEREO TRANSMISSION COMPLIANCE

Particular Conditions:

- With modulation input.
- Temperature 25°C
- Measures done at 100% of nominal power.
- Measurements done at 98MHz
- Nominal AC voltage input

Configuration:



Results:

- |                                                    |                             |             |
|----------------------------------------------------|-----------------------------|-------------|
| a) Pilot Subcarrier Frequency =19.0KHz             | Limits 19KHz $\pm$ 2KHz     | <b>Pass</b> |
| b) Stereo Subcarrier Frequency=38.0KHz             | Limits 38KHz $\pm$ 4KHz     | <b>Pass</b> |
| c) Pilot Subcarrier Amplitude (Deviation)=7.3KHz   | Limits 6KHz – 7,5KHz(8-10%) | <b>Pass</b> |
| d) Stereo Subcarrier Amplitude (Deviation)=0.13KHz | Limit 0.75KHz (1%)          | <b>Pass</b> |
| e) Stereo coding                                   |                             |             |

Procedure for stereo coding:

1. Apply input to the Left channel, 1KHz tone modulating 100%
2. With a pilot subcarrier of 10% =7,5KHz measure the levels of the signals in the Audio Spectrum Analyzer (Dynamic Signal Analyzer)
3. The tone in the subband between 50Hz & 15KHz must be 6dB upper than both tones appearing in the subband between 23KHz and 53KHz. These last two tones must be of the same level.
4. Change the input from Left to Right

|                                      |                      |             |
|--------------------------------------|----------------------|-------------|
| Between 50Hz & 15KHz of the baseband | Limit 45% modulation | <b>Pass</b> |
|--------------------------------------|----------------------|-------------|

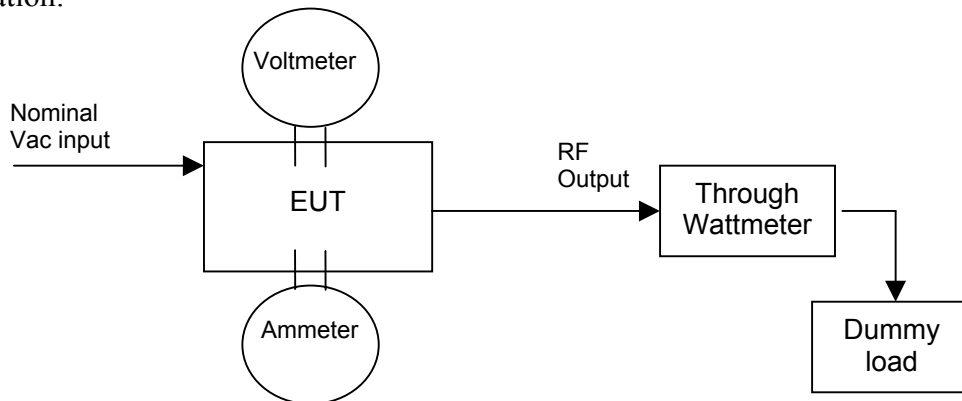
|                                         |                      |             |
|-----------------------------------------|----------------------|-------------|
| Between 23KHz and 53KHz of the baseband | Limit 45% modulation | <b>Pass</b> |
|-----------------------------------------|----------------------|-------------|

- VOLTAGE AND CURRENT OF FINAL AMPLIFIERS

Particular Conditions:

- Without modulation input.
- Temperature 25°C
- Measures done at 100% and 25% of nominal power.
- Measurements done at 98MHz
- Nominal AC voltage input

Configuration:



Results:

- |                           |                                               |
|---------------------------|-----------------------------------------------|
| a) Nominal Power 100% 25W | Power Amplifier Current=1.62A; Voltage=27.97V |
| b) Power 25% 6.25W        | Power Amplifier Current=0.72A; Voltage=27.95V |

- SUBCARRIER TECHNICAL REQUIREMENTS

This test is not applicable because the equipment under test has not internal Subcarrier generator.

- CONCLUSION:

All the test done over this equipment have been passed.

| TEST                | RESULT |
|---------------------|--------|
| Power Output        | Pass   |
| Frequency stability | Pass   |
| Conducted radiation | Pass   |
| Cabinet radiation   | Pass   |
| Preemphasis         | Pass   |
| Stereo transmission | Pass   |
| Voltage & Current   | Pass   |

Responsible of the execution of the test:

OMB Engineering Department.  
José Luis Rueda.

June 16 2006