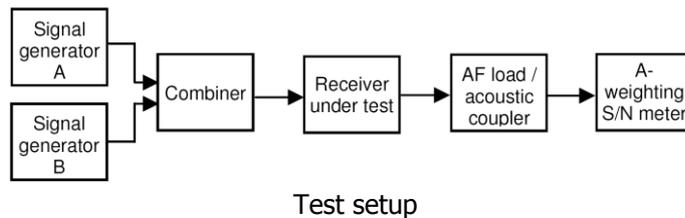


Protection Criteria for Audio PMSE

1. Hardware test procedure

Definition:

The PMSE protection level can be described as the unwanted signal level which degrades the PMSE receiver output audio $S+N/N$ to 80 dB(A).



Test procedure:

- Set signal generator A to receiver frequency (f_c)
- Set wanted signal generator A to the necessary modulation parameters (e.g. FM, Deviation +/- 24 kHz, AF 1000 Hz)
- Set signal generator A RF output level measured at receiver input to -85 dBm
- Set unwanted signal generator B on receiver frequency (f_c)
- Set signal generator B RF on smallest output level (e.g. -130 dBm)
- Set signal generator B to Modulation FM, Deviation +/- 24 kHz, AF 400 Hz
- Modify signal generator B RF output level until receiver $S+N/N$ degrades to 80 dB(A).
Note:
If required due to the used analogue audio compander technique employed, the unwanted level can alternatively be measured on an audio quality limit of 30 dB SINAD.
- Record the generator B RF level measured at receiver input
- Repeat the measuring on other interfering frequencies and record the generator B RF level measured at receiver input

2. Preview on the results

Analogue Audio PMSE

Depending on the receiver construction a co-channel interference level of about -110 to -115 dBm will be measured.

Digital Audio PMSE

With spectrum efficient modulations an unwanted interferer level of -115 dBm is to apply.

3. Derivation of interference level

a. PMSE quality threshold in operation

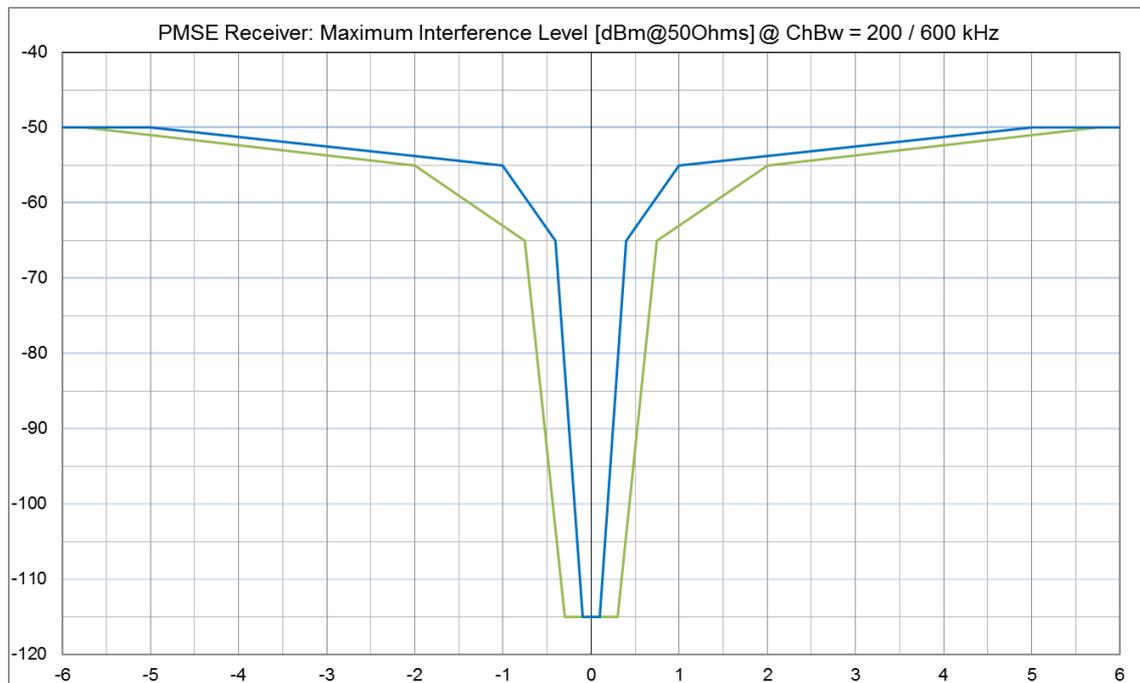
The minimal working field strength is -85 dBm. This level includes fading notches. With a 30 dB C/I a quality degradation of 1 dB appears.

b. PMSE receiver sensitivity

An actual PWMS receiver offers a sensitivity of -110 dBm. Typically RF squelch is set to -95 dBm. The minimum quality level with current equipment is given at -95 dBm with 20 dB C/I. Under these conditions a quality degradation of 3 dB appears.

Both examples calculate a maximum interference level of -115 dBm in 200 kHz channel. This can be transferred into a relative interference level of -168 dBm/Hz.

4. Estimation of the maximum PMSE Interference level



Note: active antenna distribution components are not considered (PMSE receiver only).