Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	Comparison of 64QAM and 16QAM blocking signals for Adjacent and Non-adjacent Channel rejection
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Source(s)	Darcy Poulin SiGe Semiconductor Voice: +613-820-9244 x274 dp@sige.com
Re:	
Abstract	This document explains why the difference in ACR between 16QAM-3/4 and 64QAM-3/4 should be the same as the difference in SNR between 16QAM-3/4 and 64QAM-3/4
Purpose	To explain how ACR should be related to SNR.
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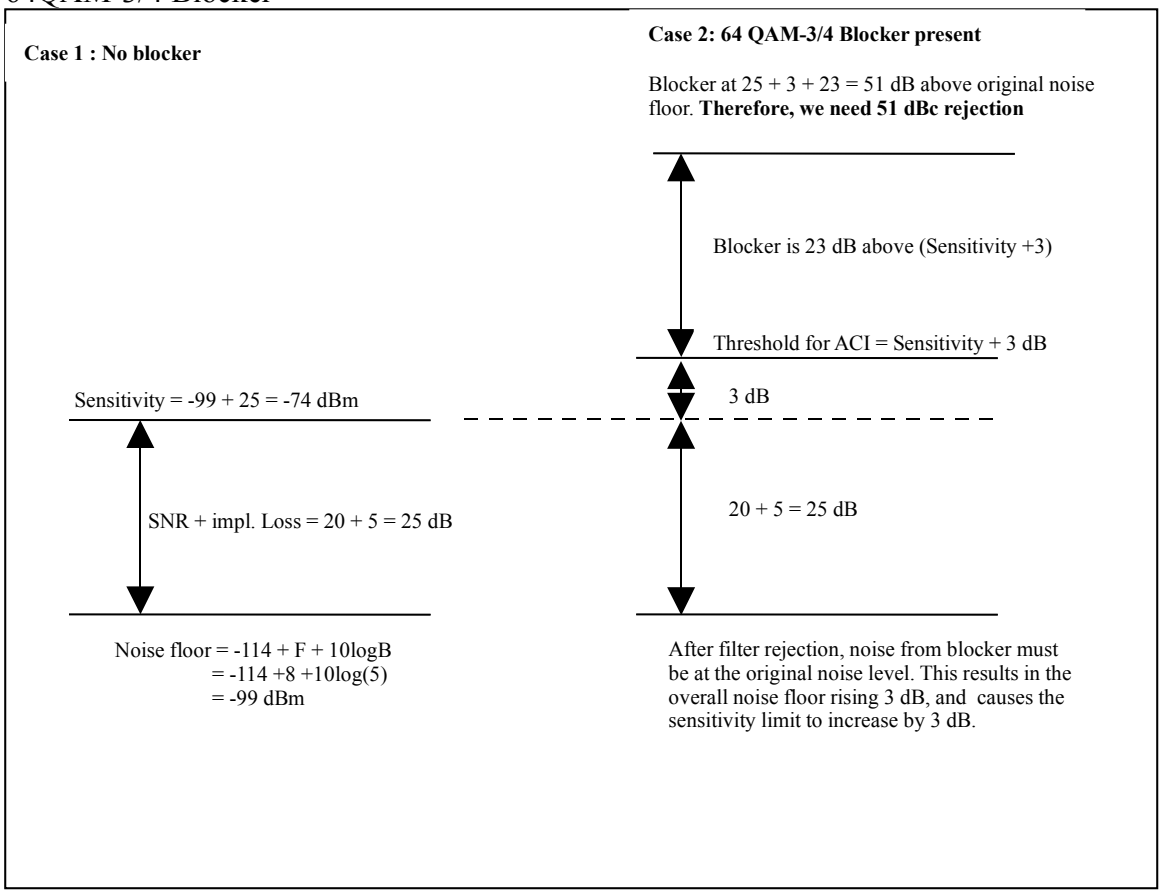
Comparison of 64QAM and 16QAM blocking signals for Adjacent and Non-adjacent Channel rejection

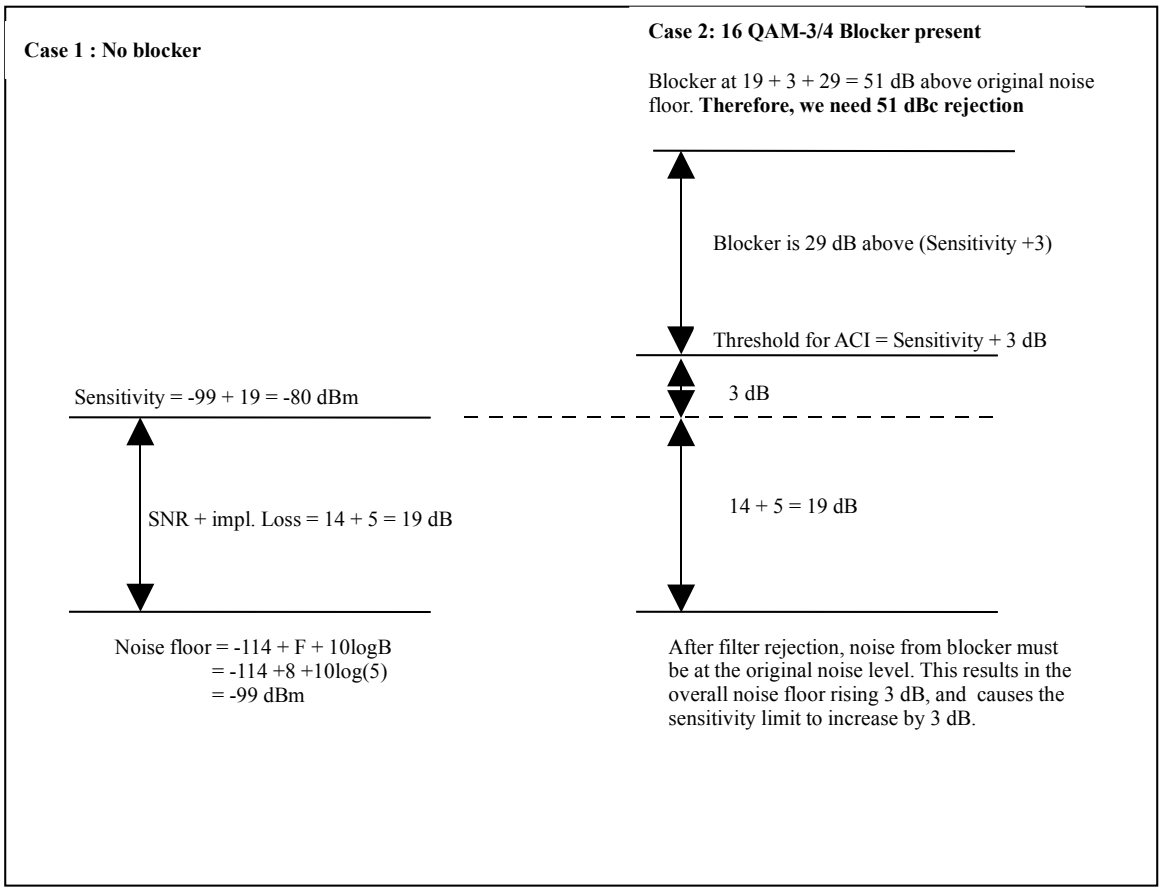
64QAM-3/4 Blocker



With no blockers present, the sensitivity is 25 dB above the thermal noise floor.

When a blocker is present, the specification requires us to start measuring performance 3 dB above the original rate-determined sensitivity. Therefore, noise from the blocker must result in the noise floor increasing by 3 dB. In order to cause a 3 dB increase in the noise floor, the noise from the blocker must fall at the original noise floor level. Filtering in the radio must therefore suppress the blocking signal to the level of the original noise floor. This information allows us to determine how much rejection the radio must provide to guarantee that the blocking specification can be met.
Since the blocker for 64QAM is 23 dB above the desired signal, and since the noise from the blocker must be reduced so that it is at the original noise level, we will require 23 + 3 +25 = 51 dBc filtering.

16QAM-3/4 Blocker



Note that the required rejection in the radio is identical for 16QAM and 64QAM as long as the difference in required channel rejection (as specified in table 339) is the same as the difference in required SNR.

If the difference in channel rejection is different from the difference in SNR, then one case will be more challenging to meet than the other.

In conclusion, the difference in required channel rejection in table 339 between 16QAM and 64QAM should be 6 dB, since this is the difference in SNRs required.