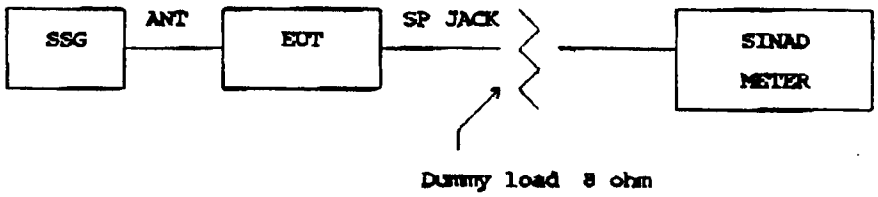
5-3 Test Result: Cellular image rejection

15.121(b)

Rationale:
In order for determine image(spurious) rejection characteristics on scanning receiver, use of one SSG method would be suitable rather than two or three SSG method since cellular image reception would be considered as unwanted reception solely at outside of cellular band.

Test set-up:



Conditions:
AF Signal : 1 kHz
Deviation : +/- 3kHz (for frequency modulation)
Modulation : 60 % (for amplitude modulation)

Test frequencies: 824.01MHz, 836.52MHz, 849.00MHz,
869.01MHz, 881.52MHz, 894.00MHz

A) Preliminary check against image reception

A-1) Disable the output signal of SSG. Disconnect dummy load and enable the EUT to confirm the presence of audio noise on speaker.

A-2) Set the EUT with "Squelched Threshold" to prevent audio signal.

A-3) Set the frequency of SSG to cellular band, and apply 60dBuV of RF output to EUT. Note that 60dBuV signal level corresponds approx. 66dB above the "Squelched Threshold" sensitivity of -6dBuV (not, receiving sensitivity). This is approx. 28dB (= 66 - 38) above the FCC limitation.

A-4) Enable EUT and search the cellular frequencies on the all of receiving range.

A-5) List the all of detected frequencies if EUT detects them, and the following steps shall be taken to determine the actual image rejection characteristics individually.

A-6) Repeat the above procedure for remaining frequencies.

A-7) Go to Part B of the test.

B) Determination of actual image rejection characteristics

B-1) Based on preliminary investigation, both of EUT and SSG shall be set to the frequency at which obtained in A-5) in the above.
Connect the dummy load and set the squelch volume of EUT to unsquelched for obtaining the audio signal.

B-2) Adjust and record the RF output of SSG to obtain 12dB SINAD on EUT. SSG level at which obtaining the 12dB SINAD is receiving sensitivity of EUT (not, tight squelch sensitivity).

B-3) Adjust the frequency of SSG to the corresponded cellular frequency associated with A-5. Adjust and record the RF output of SSG to obtain 12dB SINAD on EUT.

B-4) Image rejection ratio is obtained as differences between B-2) and B-3).

C) TEST DATA Spec. : At least 38dB

Cellular Frequency (MHz)	Image/sprious (Frequency stopped on EUT) (MHz)	Image Rjection Ratio (dB)
824.01		
836.52		
849.00		
869.01		
881.52		
894.00		

Note: As EUT detected no frequency over the receiving ranges, EUT was surely complied as much as exceeding 66dB of image rejection, therefore, further investigation will not be needed.

Note: All data not reported were more than 28 dB above the FCC limit.