

RFI Measurement of Embedded Box CPU

By :- SSK, PAR, SBB

Following are the test result of RFI measurement done for Advantech's Embedded Box CPU.

Test Procedure:

1. Measurement done at 3 meter distance with Rx LPDA antenna
2. Log periodic antenna with 20dB amplifier used as receiver.
3. RFI Test done for 0-500MHz frequency band radiated from CPU in all direction.
4. There is no significant radiation or line above 500 MHz.

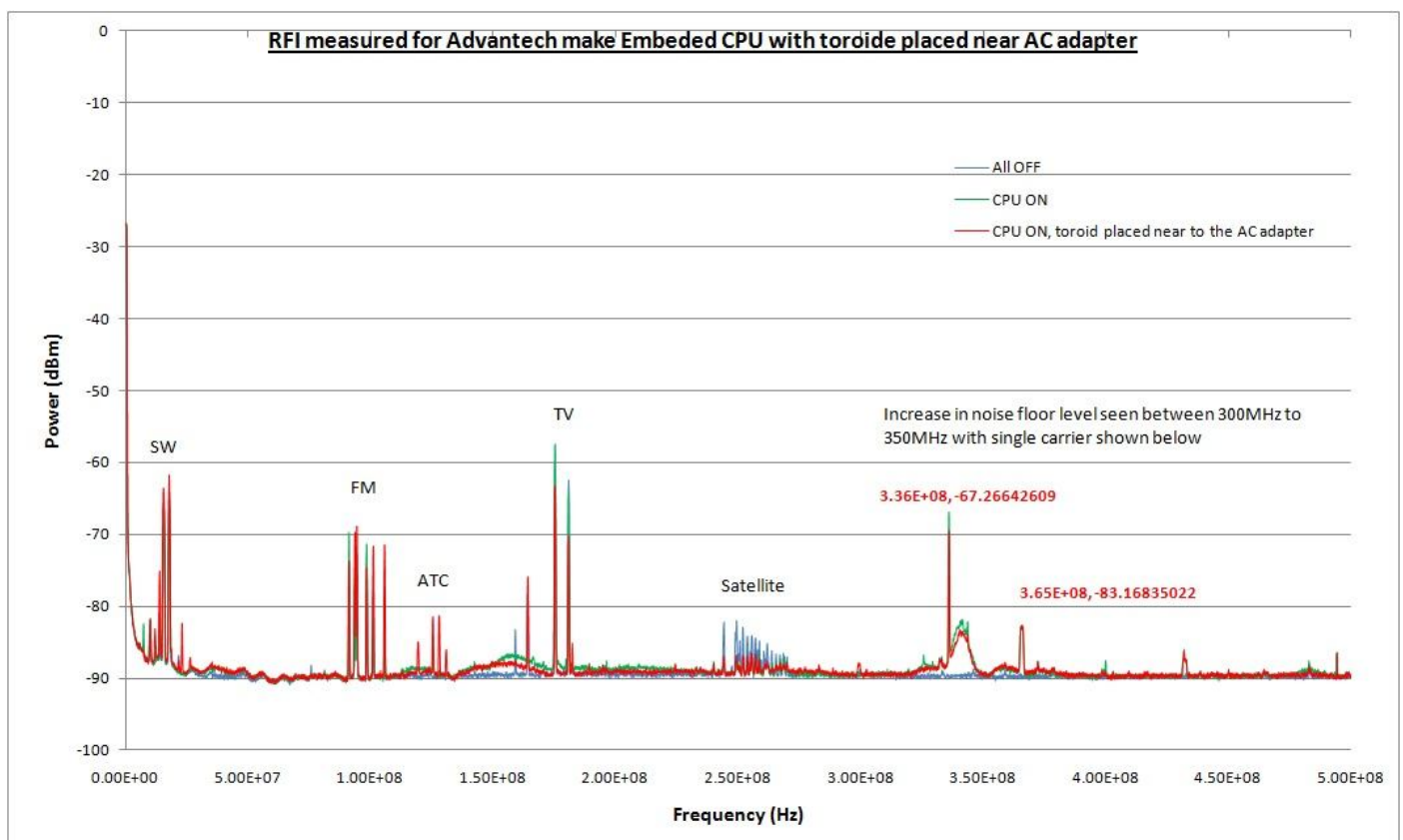
**Fig.:-1 Corner view of Embedded CPU****Fig.:-2 Rear view of Embedded CPU****Measurement Result:**

Fig.:-3 Shows there is increase in noise floor level near 150MHz and 325MHz band. This figure also shows strong line at 336MHz.

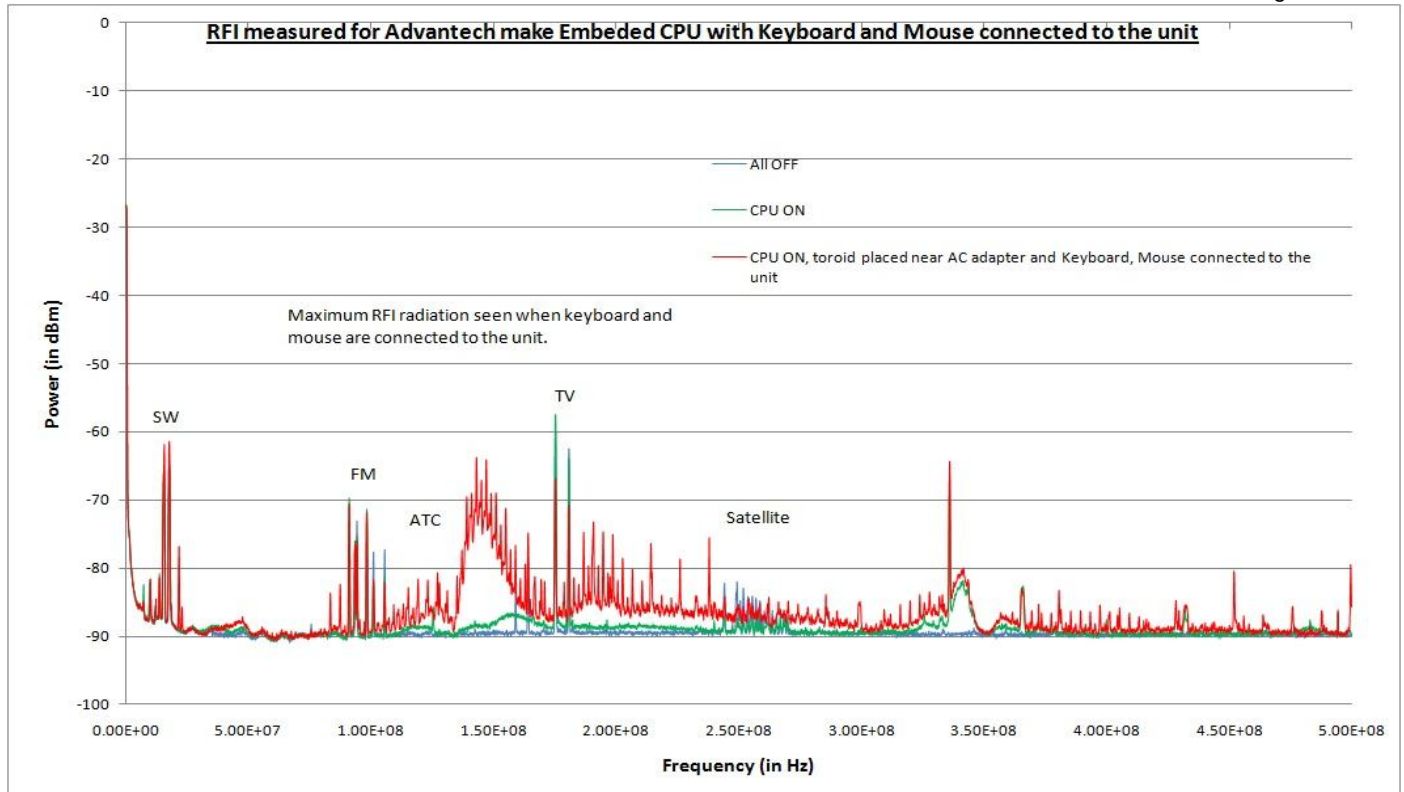


Fig.:4 Shows maximum increase in noise floor level from 100MHz to 400MHz band. We can also seen many discrete lines in above band. This is due to radiation coming from unshielded connectors and cables.

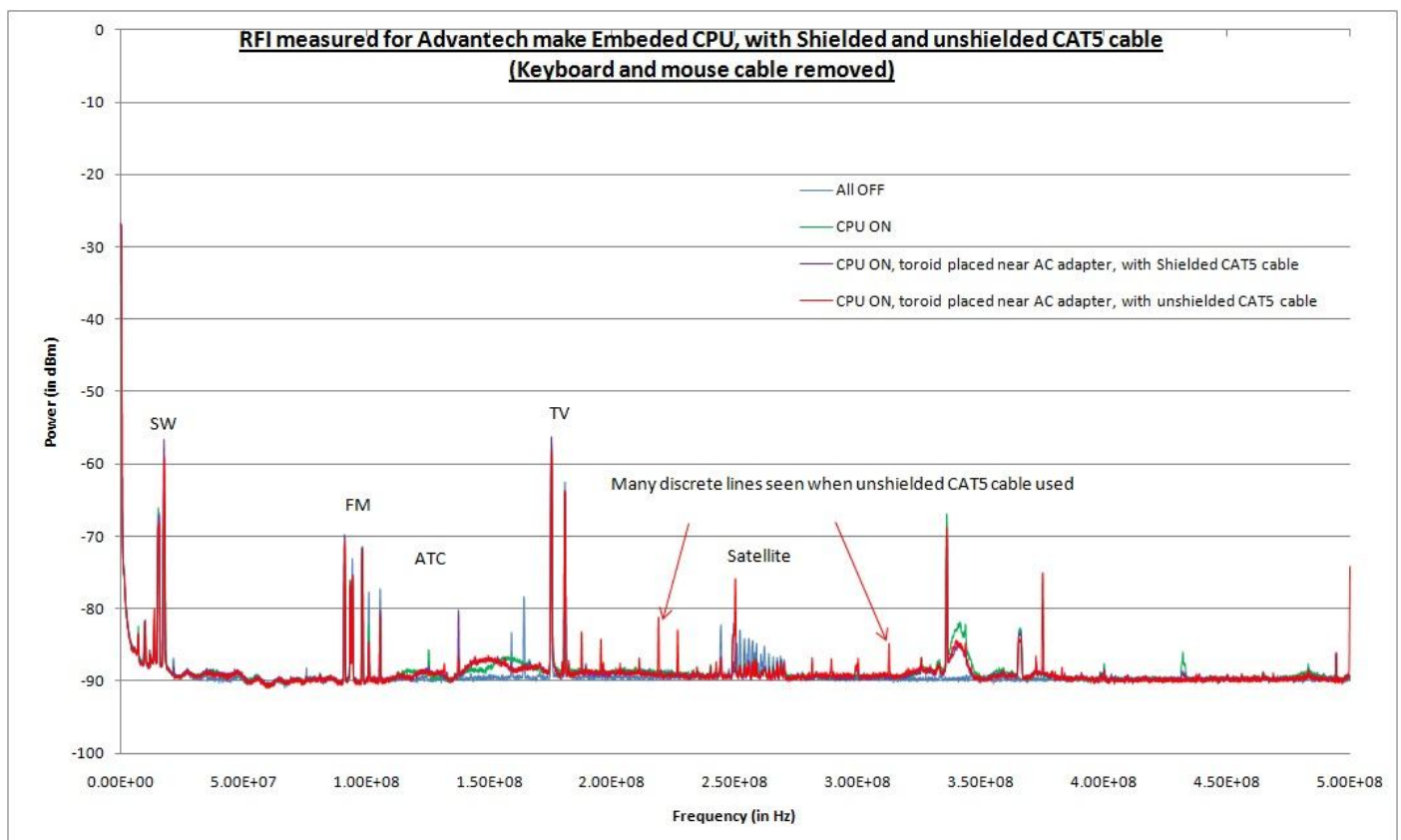


Fig.:5 Shows many discrete lines due to unshielded CAT5 cable. They disappear by use of shielded CAT5 cable.

Conclusion :-

RFI measurement shows Advantech make Embedded CPU increase in noise floor level and stronger discrete lines. This may be due to use of unshielded and unfiltered connectors on embedded CPU. The external unshielded cables like CAT5, mouse and keyboard gives maximum radiation and discrete lines. This can be reduced by using shielded cables.