

## GETTING THE MOST OUT OF JCAT NET CARD FEMTO

### INTRODUCTION

Thank you for purchasing the JCAT NET Card FEMTO.

This article will help you extract the most out of the product and get the best sound quality.

The article focuses on tips and tweaks. If you still haven't installed the JCAT NET Card FEMTO, please check the Quick Start Guide (available here; [http://files.jplay.eu/JCAT\\_NET\\_quick\\_start.pdf](http://files.jplay.eu/JCAT_NET_quick_start.pdf)) first before you continue.

### HARDWARE RECOMMENDATIONS

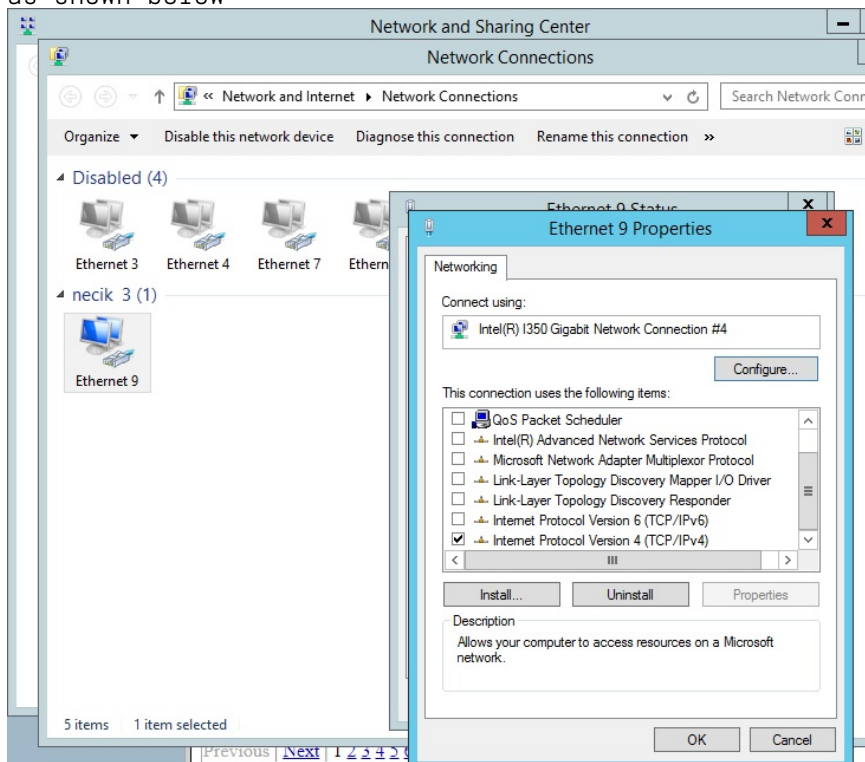
- Install the JCAT NET Card FEMTO in a PCIe slot with highest bandwidth - usually the slot located closest to CPU socket is best.
- Use linear power supply (5V/2A) with the JCAT NET Card FEMTO for best results. Although there are no switching regulators on the card, it is highly recommended to use linear PSU also for the source power. Otherwise the card will use power from PCI Express lane as input which is not optimal. Any good quality 5V/2A linear PSU would be ok. You can use JCAT 200W or 400W linear PSU. I am using single 400W Linear PSU to power a complete PC and the JCAT NET Card.
- Use audio grade LAN Cable between the JCAT NET Card FEMTO and your network device. The LAN cable should be as short as possible - optimal length is 1m. The longer the cable is, the less benefit you will get from the JCAT NET Card FEMTO.
- Using only one Ethernet port on the card will sound better than using both ports simultaneously.
- The JCAT NET Card FEMTO needs 100 hours burn-in time until it reaches full performance.
- If you use JPLAY Dual PC mode, it's best to have the JCAT NET Card FEMTO installed in both PCs.

### SOFTWARE RECOMMENDATIONS

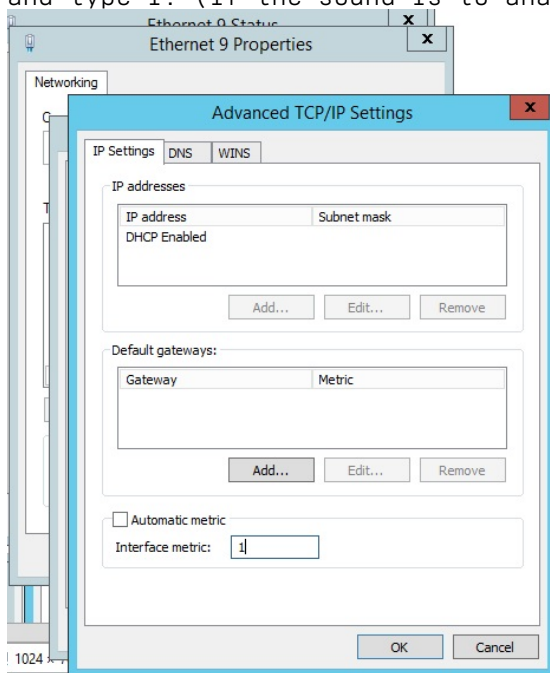
Below you will find a detailed description of my reference settings for the JCAT NET Card FEMTO under Windows OS. I spent many hours checking each option, one by one, in search of a combination that sounds best. This is what I've found:

- Windows Server (2012 / 2016) is preferred as some options that affect performance of the card are available only under Windows Server OS.

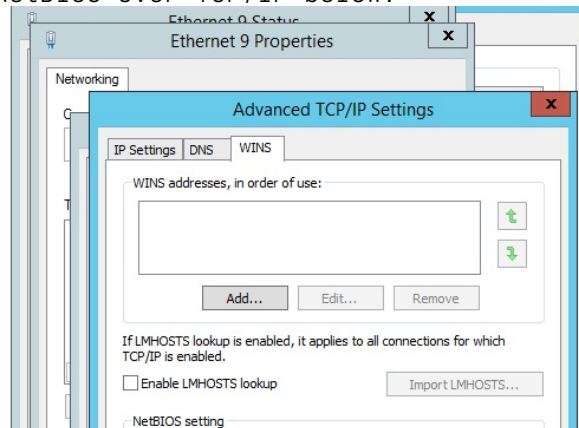
1. Go to Control Panel -> Network and Sharing Center -> Network Connections -> Double-click on JCAT NET Card's FEMTO connection to open Properties -> Untick all fields leaving only TCP/IPv4 ticked as shown below



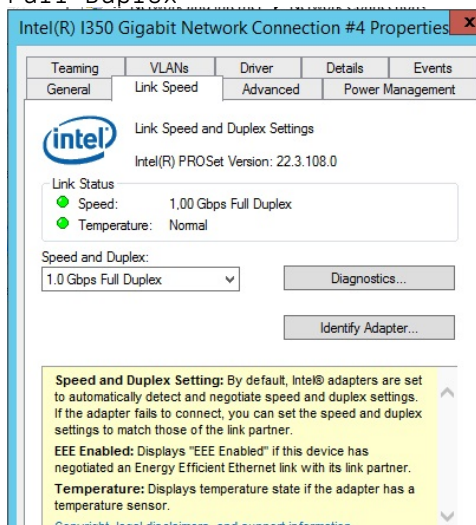
2. Select TCP/IPv4 and click Properties -> Untick Automatic metric and type 1. (If the sound is too analytical, increase to 2)



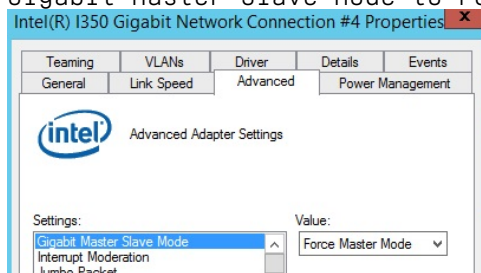
- Go to WINS tab -> untick Enable LMHOSTS lookup and select Disable NetBIOS over TCP/IP below.



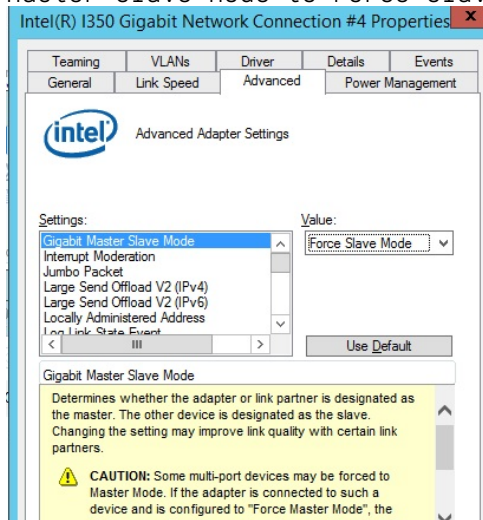
- From Network Connections -> Double-click on JCAT NET Card's FEMTO connection to open Properties again -> click Configure... button to enter driver properties.
- Go to Link Speed tab -> from Speed & Duplex menu choose 1.0 Gbps Full Duplex



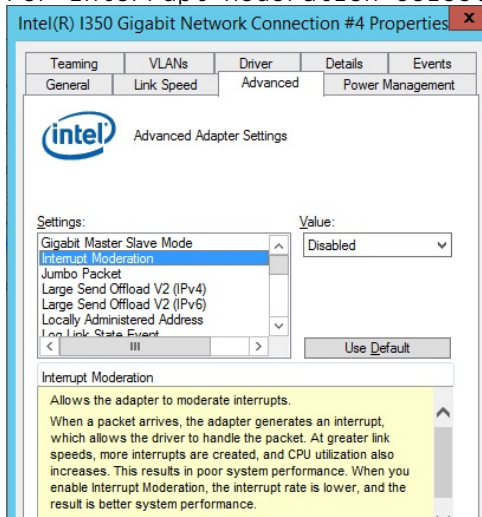
- Go to Advanced tab. If you use JPLAY dual PC mode and this is Control PC or if you have only one JCAT NET Card FEMTO, set Gigabit Master Slave Mode to Force Master Mode.



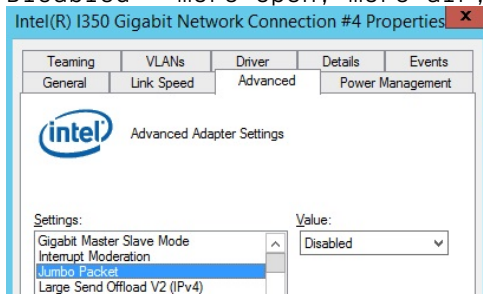
7. If you use JPLAY dual PC mode and this is Audio PC, set Gigabit Master Slave Mode to Force Slave Mode



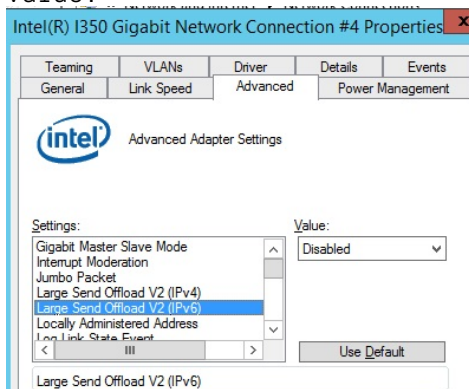
8. For Interrupt Moderation select Disabled value.



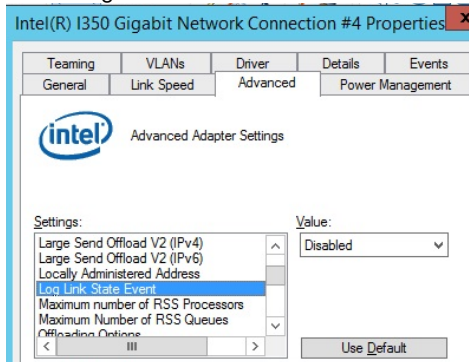
9. For Jumbo Packet select Disabled value. (4088 more focus, 9014 even more focus and weight, darker sound. and less air than 4088. Disabled - more open, more air, most natural sound)



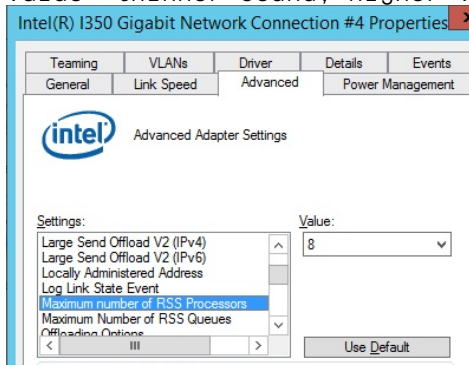
10. For both Large Send Offload V2 (IPv4) & (IPv6) select Disabled value.



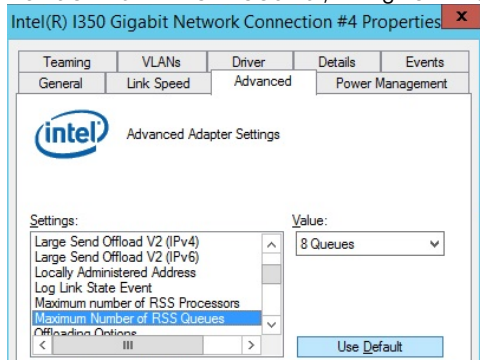
11. For Log Link State Event select Disabled value



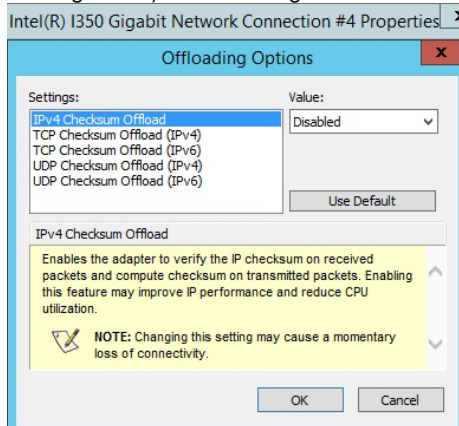
12. For Maximum number of RSS Processors select value 8. ((lower value= thinner sound, higher value = fuller sound))



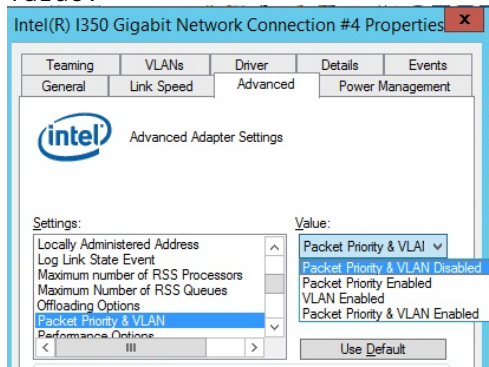
13. For Maximum number of RSS Queues select value 8 Queues. (lower value= thinner sound, higher value = fuller sound)



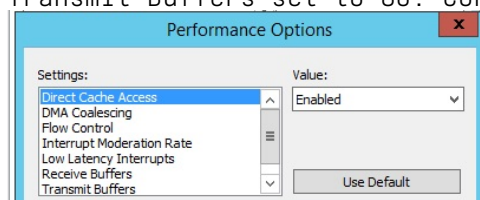
14. Enter Offloading Options and set all values to Disabled. Confirm changes by clicking OK button.

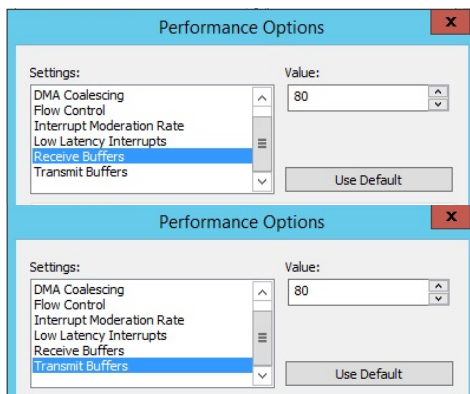


15. For Packet Priority & VLAN select Packet Priority & VLAN Disabled value.

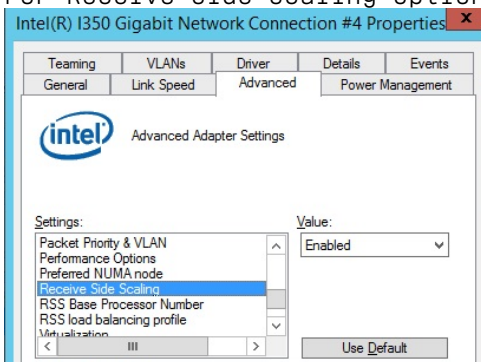


16. Enter Performance Options. Set Direct Cache Access to Enabled. All other options should be Disabled. Receive Buffers set to 80. Transmit Buffers set to 80. Confirm changes by clicking OK button.

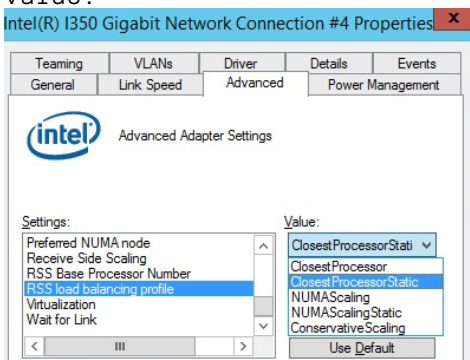




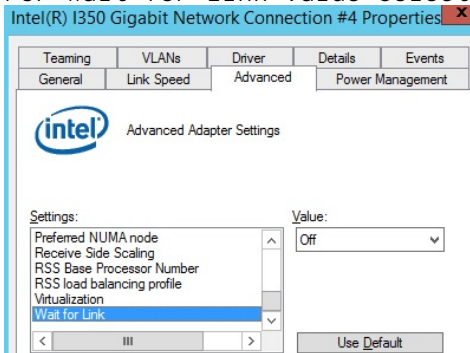
17. For Receive Side Scaling option select Enabled value.



18. For RSS load balancing profile select ClosestProcessorStatic value.

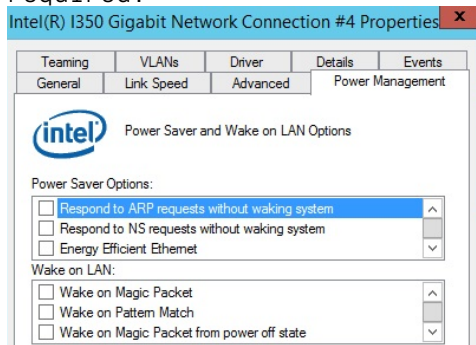


19. For Wait for Link value select Off.





20. Go to Power Management tab and untick all options. Now click OK button to confirm all changes. The network connection will reset and all changes should become effective. Sometimes restart is required.



- If some option is not described above, it should be disabled. Do not leave any options on auto. It is important to have all options fixed.
- In JPLAY dual PC mode repeat the above procedures for both PCs. The only option different should be Gigabit Master Slave Mode (points 6 and 7)