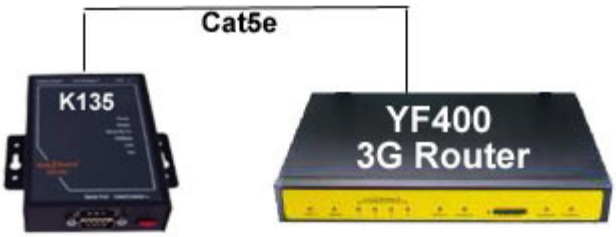
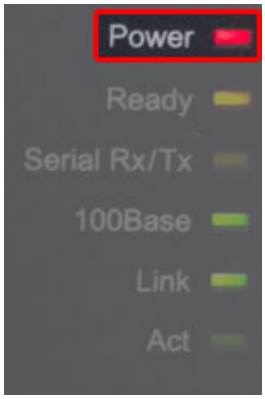
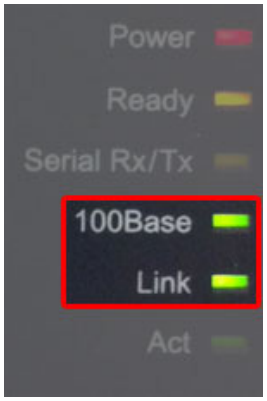
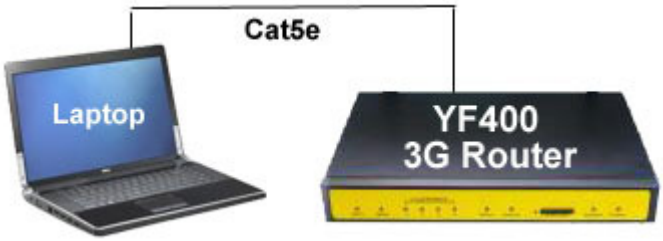
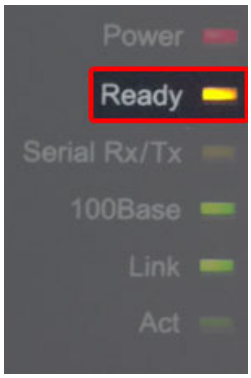
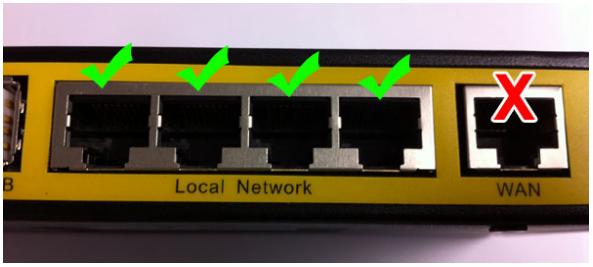
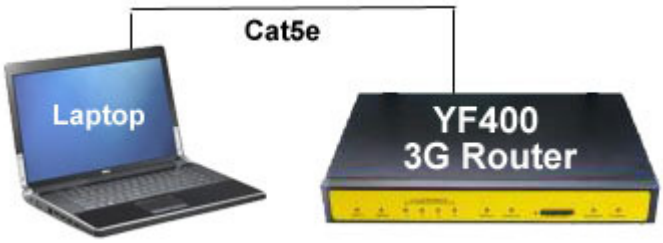
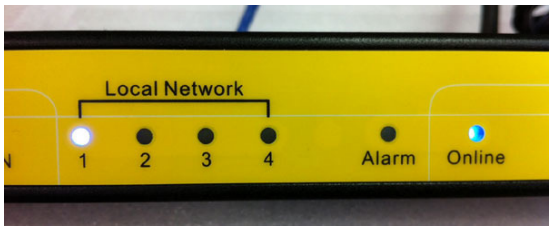
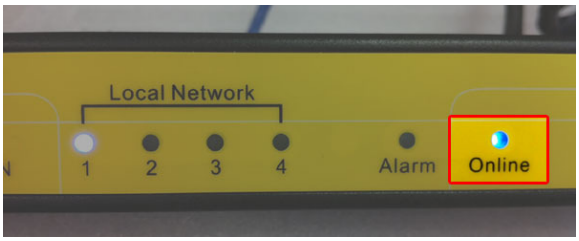
SOLARVU SYSTEM COMMUNICATIONS TROUBLESHOOTING

Version 1.2

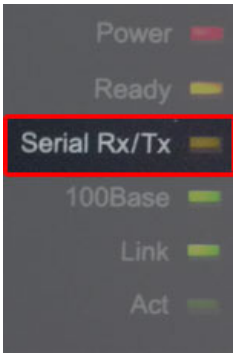
ITEMS TO CHECK	IF THERE IS A PROBLEM
1. Make sure that there is AC (grid) power and DC power (the PV system is generating)	Most inverters require both AC and DC on to report data. If either side is disconnected, the K135 may not able to read any data from them. Things to check: 1 – Check if the inverters are generating power and normal operation is confirmed on their LCD screens.
Troubleshooting the K135 Gateway-Internet Connection 	
2. Is the **POWER** light on? (Solid red): 	If "Power" is off, that means that there is no power to the K135. Verify that the K135's power supply is plugged into an AC power source. There are 3 causes for the "Power" light being off: 2.1 – No AC power (determine cause and correct) 2.2 – Bad K135 Power Supply (replace power supply) 2.3 – Bad K135 gateway (Replace K135 entirely)

3. Are the **100Base** and **LINK** lights solid green? 	Both lights should be solid green all the time. If either of them is off, that means that the gateway is not physically connect to any Ethernet network. Things to check: 3.1 – Check the Cat5e cables, make sure they are in good condition and connected, replace if needed. 3.2 – Make sure the router/modem are powered on. 3.3 – Disconnect the K135 from the Ethernet cable, and connect your Laptop to the same Ethernet cable and see whether or not you can browse the Internet. If not, consult the router troubleshooting section below. 
4. Is the **READY** Light on? (Solid orange, indicates that you have a good IP address) 	Most K135s are set up as DHCP, which mean they will automatically request an IP address from the router. If that fails, the light will be off. Things to check if the light is off: 4.1 – Are the 100Base and Link light off? (if yes, go back to step 3) 4.2 – Is the router turned on, and functioning? Try connecting a laptop and see whether you can browse the internet, If not, consult the router troubleshooting section below. 4.3 – Is the Cat5e cable connected to one of the LAN ports? If K135 is connected to a 4 port router (i.e. Cachelan's 3G Router), there will be 5 RJ45 connector on the router, 1 WAN port and 4 LAN ports. Make sure you connect to one of the LAN ports, not the WAN port. You can also try changing to another LAN port in case one of them is bad. The back of the router should look like follow: 

5. Is the system communicating with SolarVu?	If 2), 3), and 4) above all seem be ok, the K135 should be connected to the internet. Check for communication with SolarVu by going to your SolarVu Web Portal; click ANALYSER -> INVERTER STATUS. NOTE: *The K135 will update to SolarVu every 10 minutes, so you may not see anything happen up to 10 minutes in the first start. (keep refreshing the web page)* Things to check if not communicating: 5.1 – First thing to check is connect your laptop and see whether you can browse the internet. (see 3.3) 5.2 – Is the router functional? (*see Troubleshooting the 3G Router below*) 5.3 – If it's a 3G system, is the modem online? Is the SIM card active? It is possible that you need a better antenna. You can also call your ISP to verify your 3G-account status (*see Troubleshooting the 3G Router below*). 5.4 – If the K135 is connected within a corporate/school network, check with the IT person there to determine whether if you need to get a static IP address or permission to go out.
Troubleshooting the 3G Router	
6. Does the router have Internet access?	Connect your Laptop into one of the LAN ports and see if you can browse the internet:  Try rebooting the router if needed.
7. Is the 3G router power on?	The 'Power' light should be turn on (solid blue). If not, did you plug in the router supply? Is it connected to 120 AC power? 

8. Is the 3G router booted up and functional?	8.1 -The 'System' light should be flashing blue. If it off or not flash at all, power down the router and power it on again:  8.2 – One of the 4 LAN port lights should be on (solid blue). If not, check if K135 (or your laptop) did connect to the router or not:  8.3 – 'Alarm' light should be 'off' all the time
9. Is the 3G router connected to the cellular network?	9.1 – The 'Online' light should be 'on' (solid blue) all the time:  If not, you are not connected to any cellular network, check below: 9.2 – Did you insert the SIM card? Check if the sim card is inserted correctly. 9.3 – Is the SIM card active? Call service provider to verifier that. 9.4 – Does the area have adequate reception coverage? Check if your cell phone has a signal: and try to make a phone call and see you able to call out or not. (*See document "YF400 Signal Strength.pdf" for how to check signal strength with YF400*) 9.5 – If you think this is the reception issue, try to move the 3G antenna outside the enclosure, replace it with longer cable, higher gain antenna, and mount it as high as possible.

Troubleshooting the Inverter to K135 gateway (serial data) Connection

10. Always check if the K135 has Internet connection before you check your serial data connection.	Go to your SolarVu Portal and see if the K135 is successfully communicating. If not, go back to 2) to 5) .
11. Is the **Serial Rx/Tx** light flashing alternately red and green (roughly once per 2 second)?  - Red means that data request signal is being sent to the inverter - Green means that the inverter is responding the request.	If only the red light is flashing, it means that the inverter isn't responding. Things to check: 11.1 - Is the inverter power on and system is generating? 11.2 – Are the serial wires connected correctly? Review your installation manual and double check that the wiring matches the drawing there. (D+ to D+, D- to D-,…etc) 11.3 - On new installations: Check if the inverter needs a comm card or not and if it does, is one installed? 11.4 – Try swapping out the comm card. If there is a solid green light, which means that noise is present on the wire. Things to check: 11.6 – Are you using the correct cable that is suggested in the manual?(i.e. Shielded, twisted pair) 11.7 – Try to move the serial cable away from sources of interference (i.e. away from the AC line)

Extra Help

12. Video Demo – K135 Indicators	http://www.solarvu.net/green/video/k135indicators.php
13. Contact Cachelan	Tech Support: 905.470.8400 x 224 Email: contactus@cachelan.com Address: 3575 14th Avenue, Unit 7, Markham Ontario, L3R 0H6