NGC I/O PCB Troubleshooting Checklist Technician Cell# Serial Number Date Model **PCB Serial Number** Options Added to the machine and I/O PCB 1. Workholding 2. Umbrella tool changer 3. Bar feeder 4. Auto part loader 5.8M 6. Chip Quad/Muiltple Aguer 7. Auto Door/Auto Window 8. Robot Why is the PCB being replaced? 1a. What alarms are generated? 1b. Does the alarm reset? Yes No 1c. When does the Alarm occur? 2a. What is the Machine's software version? 2b. I/O Firmware version at the time of the alarm? 2c. Have you updated the I/O and TC PCB Firmware to the Yes No latest version? Yes No 2d. Have you updated the machine to the latest SW version? Yes 2e. Are any breakers on the PSUP PCB tripped? No 3. Other - Describe the issue: Mandatory Troubleshooting 4. Measure and note the voltage levels at the following PCBs and Connectors I/O P55 red-black I/O P55 black-white I/O P55 white-red PSUP P11 red-blk PSUP P11 wht-blk PSUP P11 wht-red V Observe and note the status of the following LEDs in the I/O PCB (ON/OFF/Blinking) LE1 24V LER2 Traffic LE3 5V Any other LED on? LE5 12V LE7 1Khz Loop 5. Is the machine equipped with a CAN Lube Panel PCB? If so, is setting 9005.001 enabled? Yes No 6. Is the machine equipped with smart CAN Autodoor? If so, is setting 9013.001 enabled? Yes No 7. Is the machine equipped with a CAN E-Vise system? If so, is setting 9011.001 enabled? Yes No 8. Is the machine equipped with CAN spindle head PCB? If so, is setting 9007.001 enabled? Yes No 9. What system driven by the I/O PCB presents the problem? 10. What inputs and outputs are associated with the system you are troubleshooting? 11. What voltage is used by the system you are troubleshooting? 12. What cables are associated with the system you are troubleshooting? Yes No 13. Have the cables associated with the system you are troubleshooting been inspected and reseated? 14. For an I/O Communication alarm, has the ethernet cable at J4 been inspected, tested, and re-seated? Yes No No 15. For SMTC Issues on non-SS machines, what is the firmware version on the SMTC Module? Yes Yes No 16. Have the cables from the SMTC module been tested and reseated? 17. For SMTC Sensors, have you tested the proximity switches and observed the feedback on the diagnostics page? Yes No 18. For Analog input issues, have you unplugged one input at a time and observed the gauges page? Yes No 19. For Ground Fault detected alarms, what is the machine doing when the alarm occurs? Yes No 20. For E-stop issues, have the e-stop jumpers at JP2 and P12 been inspected? 21. For machines with a ROBOT, have all of the cables associated with the option been inspected and reseated? Yes No 22. For CRC error alarms, does the Main CRC code and Factory CRC code, as listed in the I/O config page, match? Yes No Notes/Observations: