



PCN: PLP-PCN-002005

Product Change Notice

Issue Date: 08/13/20

Change Type:

Firmware update

Parts Affected:

This update is for the following Automotive Ethernet Switches:

BCM89530B1BPBG(T)
BCM89531B1BPBG(T)
BCM89535B1BPBG(T)
BCM89231B1BPBG(T)
BCM89230B1BCFBG(T)
BCM89530B2BPBG(T)
BCM89531B2BPBG(T)
BCM89535B2BPBG(T)
BCM89231B2BPBG(T)
BCM89230B2BCFBG(T)
BCM89541B1BFBG(T)
BCM89241B1BFBG(T)
BCM89550B1BFBG(T)
BCM89551B1BFBG(T)
BCM89251B1BFBG(T)
BCM89540B2BFBG(T)
BCM89541B2BFBG(T)
BCM89241B2BFBG(T)
BCM89550B2BFBG(T)
BCM89551B2BFBG(T)
BCM89251B2BFBG(T)
BCM89549C0BFBG(T)
BCM89249C0BFBG(T)
BCM89242C0BFBG(T)
BCM89559C0BFBG(T)
BCM89557C0BFBG(T)
BCM89553C0BFBG(T)
BCM89259C0BFBG(T)
BCM89252C0BFBG(T)
BCM89549YD0BFBG(T)
BCM89249YD0BFBG(T)
BCM89559YD0BFBG(T)
BCM89557YD0BFBG(T)
BCM89553YD0BFBG(T)
BCM89259YD0BFBG(T)
BCM89252YD0BFBG(T)

Description and Extent of Change:

Two files for low level initialization of the internal PHYs are modified for this change :



- BCM8953X_SDK_REL_3.1.3\Sources\BCM8953X_REL_3.1.3.tar\BCM8953X_REL_3.1.3\prebuilt\bcm89530\bootloader_lib\bcm89530c1_br100_evk\libbcm89530_f1.a
- BCM8953X_SDK_REL_3.1.3\Sources\BCM8953X_REL_3.1.3.tar\BCM8953X_REL_3.1.3\prebuilt\bcm89530\bootloader_lib\bcm89530c1_100tx_evk\libbcm89530_f1.a

This patch checks if the PHY PLL is unlocked during the boot process. If the PHY PLL is not locked then the following sequence is done.

write 0x001F to 0x0A82_0020 to disable BR PHY

write 0x0000 to 0x0A82_0020 to enable BR PHY

write 0x8002 to 0x0A82_0022 to reset BRPHYs

write 0x0000 to 0x0A82_0022 to get out of reset

Reasons for Change:

In some rare cases, when the 1V power rail is not fully discharged (i.e. doesn't go down to 0V) at the time of Power-cycling before ramping up again or during power-up with rampup differences across supply domain, some parts of the circuit/logic are powered OFF while others are still powered ON. This unusual state results in an incorrect power sequence and forces the 100BASE-T1 PHY PLL circuit into an unknown state, therefore, the 100BASE-T1 PHY PLL doesn't lock. At this stage the affected 100BASE-T1 PHY block can recover by power cycling and completely discharging 1V rail only; a hardware reset doesn't fix the problem. The firmware change resolves this potential issue.

Effect of Change on Fit, Form, Function, Quality, or Reliability:

This will prevent 0km and field failures due to this issue.

Effective Date of Change:

This firmware patch is available immediately and will also be included as part of SDK4.4 to be released on 8/15/20.

Please contact your Broadcom Limited field sales engineer or Contact Center for any questions or support requirements. Please return any response as soon as possible, but not to exceed 30 days.