



INTEL® PROSET /WIRELESS BLUETOOTH TECHNOLOGY 21.90.1.1 HOT FIX PV RELEASE SOFTWARE FOR UART - G LAYOUT

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TABLE OF CONTENTS

- Release Overview
- General Information
- POA Driver Matrix
- Bluetooth Feature/Enhancements
- Known Issues & Limitations
- Known Third Party Issues
- Corrected Issues
- Issues No Longer observed
- Release Information From Windows USB driver release -21.90 PV
- Glossary

RELEASE OVERVIEW

Intel is pleased to announce the Bluetooth 21.90.1.1 Hot Fix PV release for UART based BT controllers.

- This version is intended to support **Lakefield** platform.
- This release includes drivers for ThP2(AC9260), CcP2(AX200).
- The package PHBTW7337_21.90.1.1_Win10G.zip includes drivers which support both UART and USB adapters.
- **UART Drivers:**
 - Drivers are validated for Windows 10 September Update (19H2).
 - Drivers are certified for Windows 10 May 2019 Update (19H1). Note that WHCP requirements of Windows 10 19H1 persists in Windows 10 19H2, hence *there are no separate certified drivers for Windows 10 19H2*.
- **USB Drivers:**
 - Drivers are validated for Windows 10 April 2020 Update (20H1).
 - Drivers are certified for Windows 10 April 2020 Update (20H1), Windows 10 October 2018 Update (RS5), Windows 10 April 2018 Update (RS4) and Windows 10 May 2019 Update (19H1). Note that WHCP requirements of Windows 10 19H1 persists in Windows 10 19H2, hence *there are no separate certified drivers for Windows 10 19H2*.

GENERAL INFORMATION

BLUETOOTH SOFTWARE BUILD

Windows 19H1/H2:

| | |
|------|--------------------------------|
| TIC | PHBTW7337_21.90.1.1_Win10G |
| FILE | PHBTW7337_21.90.1.1_Win10G.Zip |

SUPPORTED PLATFORM AND HARDWARE

Tested Platform

Lakefield with ThP2

Lakefield with CcP2

Supported Hardware

Cyclone Peak2 (CcP)/AX200

Thunder Peak2 (ThP2)/AC9260

POA DRIVER MATRIX: NON-DCH AND DCH

| 21.90.1.1 (PHBTW7337) | Win10 |
|--------------------------|------------|
| CcP2 | 21.90.1.1* |
| ThP | 21.90.1.1* |

Colours, group the same driver version.

*** indicates change** in driver version, when compared to the last PV Version

NEW UART RELEASE SPECIFIC BLUETOOTH FEATURES IN 21.90.1.1 PV

| ID | FEATURE SUMMARY |
|----|------------------------|
| | No New features Added. |

KEY CORRECTED UART SPECIFIC ISSUES – 21.90.1.1 HF PV

| ID | TITLE | NIC OS OBSERVED | ROOT CAUSE/COMMENTS | FUNCTIONAL AREA |
|-------------|--|---------------------|--|--------------------|
| BT-11151[C] | 10D bugcheck while resuming from S4 state in LKF | CcP2 on Win 10 19H2 | <p><i>Root Cause:</i> When there is D0 Entry failure due to resource not being cleaned up, a second D0 Entry is attempted, however due to incorrect state of variables, a second D0 entry results in a 10 D Bug Check assertion.</p> <p><i>Fix:</i> Whenever D0 Entry fails due to time out, clean up of resources is being ensured.</p> | SYSTEM TRANSITIONS |

For list of corrected issues inherited from the 21.90.1.1 PV Windows USB release please refer to [Slide 11](#)

[c] indicates that the issue was found by customer.

KNOWN ISSUES & LIMITATIONS – UART SPECIFIC - 21.90.1.1 HF PV

| ID | SUMMARY | IMPACT ON THE USER | NIC /OS OBSERVED | WORKAROUND RECOVERY PROCEDURE | COMMENTS | IMPACTED FUNCTIONAL AREA |
|-------------|--|--------------------|-----------------------------|-------------------------------|---------------------------|--------------------------|
| BT-11356[N] | BSOD Observed during S5w cycles. | UX | CcP2 on UART Win 10 19H1 | None | Low Frequency occurrence. | SYSTEM STABILITY |
| BT-11510[C] | The first key is missed from BT keyboard | UX | CcP2 on UART Win 10 19H2 | None | NA | HID |

For known issues inherited from the 21.90.1.1 HF PV Windows USB release and applicable for this release please refer to [SLIDE 12](#)

[N] indicates issues which have not been reported/observed in earlier releases.
[c] indicates that the issue was found by customer.

ISSUES NO LONGER OBSERVED/CLOSED FOR OTHER REASONS/NON-INTEL BT - 21.90.1.1 HF PV

| ID | TITLE | NIC OS OBSERVED | NOTES |
|-------------|--|---------------------|--|
| BT-10785[C] | Yellowbang Code 10 occurs after hybrid shutdown and rebooting the system | CcP2 UART on Win10 | Issue is no longer reproducible. |
| BT-10446[C] | Speaker/headset is not connected automatically after reboot | CcP2 UART on Win 10 | Issue is observed only with only SRS-BTV25 speaker and JabraElite65t earset. This is a remote device issue. However we have requested Microsoft to check for a possibility of an improvement. MSFT Bug ID: 26069513 |



RELEASE INFORMATION FROM WINDOWS USB DRIVER RELEASE -21.90 PV

KEY CORRECTED ISSUES - 21.90 PV

[c] indicates that the issue was found by customer.

| ID | Title | NIC OS Observed | Root Cause/Comments | Functional Area |
|-------------------------------|--|--------------------------------|--|-------------------------|
| BT-9083 | HID Mouse lag is observed while playing music | CcP2 on Win 10 RS3 | <i>Root Cause:</i> Due to approximation in calculating the length of the LE scan job, the job length got incorrectly extended preventing the scheduling of the Sniff jobs. <i>Fix:</i> The length calculation has been rectified. | HID |
| BT-10518 | Noise RSSI measurement after Rx at LE is incorrect | CcP2 on Win 10 19H2 | <i>Root Cause:</i> Sideband RSSI result variable in BC structure is not initialized with Invalid value before every Transaction, causing carry forwarding of RSSI results in LE NO SYNC case. <i>Fix:</i> Result container is initialized with default value prior to transaction. | BLUETOOTH LE |
| BT-10989 | Missing LE_Enhanced_Connection_Complete, when Connection Request times out | CcP2 on Win 10 20H1 | <i>Root Cause:</i> When an LE link fails to get established with the remote device, host attempts a recovery by a sending a cancellation request. The controller, though has performed the cancellation, returns an incorrect response to the host. This can lead to host being stuck and timing out for the response from the controller. <i>Fix:</i> This issue is now fixed, with controller sending LE Enhanced connection complete, for the connection cancellation request. | BLUETOOTH LE |
| BT-10517 & BT-8791 | AFH (Adaptive Frequency Hopping) related Bug Fixes | CcP2 on Win 10 | With these bug fixes, couple of potential AFH related issues are resolved 1) XRSSI measurements were incorrectly not being performed on Bad Channels, when the next successive channel is a good channel. This issue is now fixed and the blocked channels are also measured. 2) Fixes incorrect blocking of successive Wi-Fi bands, when one of the band has a bad or couple of unknown channels. | AFH |
| BT-10377 | During Stress testing, BT devices may suddenly stop working due to System Memory Exception | CcP2/HrP2 on Win 10 19H2, 20H1 | <i>Root Cause:</i> A null pointer reference was being created while entering ULPM(Ultra Low Power Mode), due to a race condition between Tx buffer creation and the next interrupt accessing the buffer . <i>Fix:</i> The sequence of Tx buffer creation, is now performed after disabling the interrupts, while entering ULPM. | SYSTEM STABILITY |

KEY CORRECTED ISSUES – 21.90 HF1 PV

| ID | Title | NIC OS Observed | Root Cause/Comments | Functional Area |
|---------------------------|--|------------------------|---|-----------------|
| BT-10997/ BT-11213[C] | LEExtendedAdvertising (Development and Integration) fails with "ERROR: CheckRadioAdvertising Features ERROR" . | SfP/WsP on Win 10 20H1 | <p><i>Root Cause:</i> Due to incorrect implementation in the INF file, BT 4.2 compliant SfP and WsP drivers were announcing support to BT 5.0 leading to the execution of this test case related to LE Extended Advertising , hence this error.</p> <p><i>Fix:</i> The INF file has been rectified.</p> | WHQL |
| BT-11188/ BT-11039 [C] | WHQL Test: Bluetooth - LEExtendedAdvertising (Development and Integration) TEST Fail | JfP2 on Win 10 20H1 | <p><i>Root Cause:</i> LE Scans have a window of 37ms. Whenever the Scan Scheduler, gets an early sync within the window – it schedules a second LE Scan. For any reason if the remaining time is too less, the job scheduling can be corrupted, causing all subsequent jobs to be incorrectly programmed. This leads to a watchdog exception.</p> <p><i>Fix:</i> The fix involves detecting the scheduling corruption and recovering the next job scheduling.</p> | WHQL |

[c] indicates that the issue was found by customer.

KNOWN ISSUES & LIMITATIONS - 21.90 HF1 PV

| ID | Summary | Impact on the user | NIC /OS Observed | Workaround Recovery procedure | Comments | Impacted Functional Area |
|--------------------|---|--------------------|-------------------------------------|-------------------------------|---|-------------------------------------|
| BT-9274 | BSOD triggered during reboot after headset stopped responding to Bluetooth | UX | CcP2 on Win 10 19H1 | None | Occurrence rate is very insignificant. | SYSTEM TRANSITIONS/STABILITY |
| BT-8457 | Sometimes Audio Glitches observed while Playing Music A2DP mode | UX | ThP2/ Win 10 RS5 | None | Issue is not frequently observed. | |
| BT-10523[N] | Rarely , when certain headsets are connected to both PC and phone, it was observed that A2DP was not available, but HFP works fine. | UX | CcP2 on Windows 10 20 H1 | None | Issue is not frequently observed Issue has been referred to Microsoft. Microsoft ID: 297471 | A2DP |
| BT-10473 | BT LE mouse stopped working due to LE connection fail with error code 0x02 unknown identifier | UX | CcP2/HrP2/JfP 2 on Win 10 19H2/20H1 | None | Only Two known occurrences so far. | BLUETOOTH LE/HID |

[N] indicates issues which have not been reported/observed in earlier releases.

[c] indicates that the issue was found by customer.

BT RELEASE HISTORY

This Release →

| Milestone Release Name | Date | BT TIC | BT KIT |
|------------------------|---------------|-----------|------------------------|
| 21.90.1.1 PV | Released Ww16 | PHBTW7337 | 135774(P) 135883(G) |



INTEL BLUETOOTH SW RELEASE VIP KIT CONTENTS

| File Name | Description |
|---------------------------|--|
| PHBTW7337_21.90.1.1G.zip | BT SW installation files for UART/USB (G Layout) |
| Bluetooth_Debug_Tools.Zip | Contains the following: <ol style="list-style-type: none">1. ibt_tools.zip - IBT trace tool2. ibterverify– tool for verification of BT Error recovery– Applicable only for USB drivers(Refer TA Document No: 616292)3. Intel Bluetooth OEM Tools. msi - Required for DRTU installation, Please refer to DRTU User Guide for installation instructions of DRTU. |
| Others | <ol style="list-style-type: none">1. Release note2. Installation guide3. License agreement |

Glossary

COEX = Coexistence. This refers to when Bluetooth and Wifi are both operating simultaneously in the 2.4Ghz band. Collisions between the radios can occur and degrade performance.

PC = Production Candidate – Part of the initial software series on a new adapter (e.g. alpha, beta, PC, PV)

PV = Production Version – Software that is approved for shipping

SP = Service Pack – an intermediate release between major release. It usually only has defect corrections.

MR = Major Release – Includes new features and defect corrections.

WA = Workaround

RN = Release Note

HF = Hot Fix – a software release with minimal change. Created to resolve a urgent customer need.

YB – Yellow exclamation mark in device manager. Indicates that a driver is not functioning properly

lbtstva – Software service that runs after certain sleep cycles and restarts the BT device upon YB detection

POA – Platform, OS, Adapter e.g. (Kaby lake, RS1, WsP) – usually refers to OS/Adapter combo.

ATS – Adaptive Time Share

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