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**Product Description Document**

# SCOPE

This document identifies the detailed requirements for the entity development process of Project Outlaw. It has been created by the project owner as the formal detailed request to the HyperX function teams as to the product requirements: specs, features, software, firmware, financial, forecast, and launch countries requirements.

# DOCUMENT APPROVALS

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# REVISION HISTORY

|  |  |  |  |
| --- | --- | --- | --- |
| DATE | AUTHOR/CONTRIBUTOR | REVISION | CHANGE COMMENTS |
| 8/15/22 | Wesley Lew | 1.0 |  |
| 10/3/22 | Wesley Lew | 1.1 | Added initial DAC & Software details |
| 2/27/23 | Wesley Lew | 1.2 | Additional feature details  Software and Feature examples |
| 7/6/23 | Wesley Lew | 1.3 | Updated DAC specs/direction  Added reprogrammable buttons to SW  Clarified RGB and macros to hardware |
| 7/20/23 | Wesley Lew | 1.4 | Updates UI/UX/Software further. Aligns with MRR |
|  |  |  |  |

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1. PRODUCT SUMMARY

HyperX Cloud Alpha 2

* 1. **Project Overview**

|  |  |
| --- | --- |
| **NPI Readiness Date** | Q1 CY 2025 |
| **Product Launch Date** | Q1 CY 2025 |
| **Target BOM Cost** | $70 USD |

HyperX “Outlaw” will be the wireless flagship product in the PC Audio family and will be the reimagining of the popular Cloud Alpha headset. ID refresh will be key to differentiate it from the Cloud family and establish itself with a flagship identity and feature set. Magnetically attached deco plates will improve serviceability and provide customization for the user. Comfort and sound will be improved upon by increasing distance to the driver and widening the sound stage with breathable earpads. Simultaneous 2.4 GHz and Bluetooth will mix game and mobile audio for uninterrupted gameplay. Finally, a DAC/AMP base station will be paired with the headset to enhance the audio and microphone quality to give the users the highest quality immersion and clarity.

* 1. **Stack Comparison & Competitive Analysis**

**HyperX Stack Comparison (where it fits in HX’s line up)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Line** | **Cloud Stinger** | **Cloud** | **Cloud Alpha** |
| **Image** | **A picture containing earphone, electronics  Description automatically generated** |  | **PLACEHOLDER** |
| **Market** | Entry Level | Mainstream | Flagship |
| **Driver Size** | 50mm | 53mm | 53mm |
| **Headband Frame** | Plastic | Metal | Metal |
| **Battery Life** | 20 Hours | 150 Hours | 300 Hours |
| **Connection** | 2.4 GHz | 2.4 GHz | 2.4 GHz + BT |
| **Microphone** | Swivel to Mute | Detachable | Detachable |
| **Surround Sound** | DTS | DTS | Customizable Surround |
| **Audio Controls** | On Earcup | On Earcup | On Earcup + DAC |
| **Earpad** | Leatherette | Leatherette | Ultrasuede |
| **Earcup Rotation** | Yes | No | Yes |
| **Wired Mode** | No | No | Yes |

**Market Data**

**Competitive Matrix**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Brand** | **HyperX** | **SteelSeries** | **Logitech** | **Corsair** |
| **Model** | **"Fade"** | **Arctis Nova Pro Wireless** | **G Pro X2 Wireless** | **VIRTUOSO RGB SE Hi-Fi** |
| **Image** | 一張含有 黑色, 黑暗, 光 的圖片  自動產生的描述  **PLACEHOLDER** |  |  |  |
| **Listing Price** | 249.99 – 349.99 | 349.99 | 229.99 | 229.99 |
| **Driver Size** | 53mm | 40mm | 50mm | 50mm |
| **Headband Frame** | Metal | Metal | Metal | Metal |
| **Battery Life** | 300 Hours | 22 Hours | 50 Hours | 20 Hours |
| **Connection** | 2.4 GHz + BT | 2.4 GHz + BT | 2.4 GHz | 2.4 GHz |
| **Microphone** | Detachable | Retractable | Detachable | Detachable |
| **Surround sound** | DTS | 360° Spatial Audio | DTS Headphone:X 2.0 | 7.1 Surround Sound |
| **Audio Controls** | On Earcup + DAC | On Earcup + Wireless Base Station | On Earcup | On Earcup |
| **Ear pads** | Leatherette | Leatherette | Leatherette | Leatherette |
| **Earcup Rotation** | Yes | Yes | Yes | Yes |

* 1. **Preliminary Product Information and Features**

|  |  |
| --- | --- |
| **Description** | **Product Requirement** |
| **Main Requirements** | Updated ID design  Superior Sound Stage & Precise Imaging  Premium Diaphragm Material  Magnetically Attached Microphone  Earcup Audio Controls  Detachable Cable  Improved Comfort  Customizable components  NGENUITY Customization  DAC/AMP |
| **Retail Box Contents** | * Headset * Detachable Mic * Detachable Cable * DAC/AMP * Carrying case/bag for headset * QSG |
| **System Compatibility** | PC/Windows 11 OS  Xbox Series S & Series X  Xbox One  PS4 & PS4 Pro  PS5  Nintendo Switch  Steam Deck  Mac OS (basic keyboard functionality, stored lighting setting  Other: Ngenuity 2.0 Software using Win10 support |
| **Warranty** | 2 Year Warranty |

* 1. **Product Feature Requirements**

Priority levels are defined as follows:

* **P1**: Must have – Essential to meet product goals
* **P2**: Desired feature – Nice-to-have

Headset Feature List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item #** | **Priority** | **Features** | **Details** | **Reference/Image** |
| **1** | P1 | Premium ID | * Reimagining of Alpha * Metal Headband, fork, deco plates, sliders * Rotatable earcups |  |
| **2** | P1 | Improved Sound Stage & Imaging | * Unrivaled audio in gaming * LCP Diaphragm or multi-material diaphragm * 53mm angled drivers * Ultrasuede Earpads |  |
| **3** | P1 | Superior acoustic tuning package | * HyperX speaker/baffle plate design * Rear chamber tuning design * Acoustic Diffusing design |  |
| **4** | P1 | Improved Boom Microphone | * Cloud 3 -> Fade -> Solo Cast * Uni/Bi Directional * Broadcast quality, fullband * Metal Mesh filter |  |
| **5** | P1 | Improved Comfort | * Further driver depth * Ultrasuede Earpads |  |
| **6** | P1 | Simultaneous Dual Wireless | * Bluetooth + 2.4 GHz |  |
| **7** | P1 | Long battery life | * 300+ Hours battery life |  |
| **8** | P1 | Internal Microphones | * Able to use headset without boom mic * Have same functions as boom mic * Minimize speech quality difference to boom mic |  |
| **9** | P2 | Enhance Boom Mic Performance | * Use integrated microphones together with boom mic to enhance speech performance * Utilize internal microphones to enhance environmental noise cancellation |  |
| **10** | P1 | Multimedia Controls | * Able to control BT functions on headset * Pairing, Pause/Play, Skip, Volume, etc. |  |
| **11** | P1 | Wired Mode | * Able to use headset with detachable cable |  |
| **12** | P1 | Personalized Surround Sound/Spatial | * Low latency, Customizable, High-end spatial |  |
| **13** | P1 | Customizable Components | * End user personalized experience * Magnetic deco plates |  |
| **14** | P1 | Detachable Microphone | * Firmly secured, easy to intentionally remove * LED mute indicator * Discrete connector port |  |
| **15** | P1 | Onboard audio controls | * Volume Wheel Mic Mute |  |
| **16** | P1 | Detachable cables | * 3.5mm to 3.5mm * USB-C to USB-C * USB-C to 3.5mm |  |
| **17** | P2 | NGENUITY Customization | * Provide user customization based on preference * Details in software table below |  |
| **18** | P2 | HyperFlex Cable | * Better user experience and cable management * Improved less stiff cable |  |
| **19** | P2 | Lightweight | * Sub 330g * Best in class comfort |  |
| **20** | P2 | Fast Charging | * Able to quick charge battery |  |
| **21** | P2 | Personalized HRTF | * App to capture head/ears to create custom sound profile |  |

DAC/AMP Feature List

|  |  |  |  |
| --- | --- | --- | --- |
| **Item #** | **Priority** | **Features** | **Details** |
| **1** | P1 | Hi-Fi | * Premium, high performing audio/mic DAC/AMP * Low SNR * ULL: 24 bit/96kHz Playback * ULL: 16bit/32kHz Recording |
| **2** | P1 | Volume Wheel | * Master control of volume, mic, EQ, Chat, Sidetone, etc. * Top Facing * Tactile * Tap to mute as touch sensor icon * Customizable LED Ring to indicate current volume * Revert back to default selected lighting after short duration (selected in software) |
| **3** | P1 | I/O | * Rear Line-Out 3.5mm * Rear Line-In 3.5mm * Rear USB-C to USB-C – BUS Powered |
| **4** | P1 | ChatMix (Hardware) | * Adjustable Levels with volume wheel * Change to customized color when adjusting chatmix * Select with button |
| **5** | P1 | Sidetone/Mic Monitor (Hardware) | * Adjustable Levels with volume wheel * Change to customized color when adjusting sidetone * Select with button |
| **6** | P1 | Quality Build | * Solid Weight * Should not easily move when making adjustments * Metal Housing |
| **7** | P1 | Spatial Surround Sound | * Button for Toggle Surround * Single LED indicator to show on/off * SW Spatial only |
| **8** | P1 | EQ Preset Swap | * Select & Change between EQs with button * Has RGB single LED Indicator to show if EQ is active * RGB button to swap between EQs |
| **9** | P1 | Output selection | * Switch to swap output between ULL and rear 3.5mm (Headset & Speakers) |
| **10** | P1 | Re-programmable buttons | * RGB backlit, physical buttons * Buttons that can assign different functions through software * Changes will save to hardware |
| **11** | P1 | Built-in Dongle | * DAC will have embedded RF IC that will connect to the headset |
| **12** | P1 | VU Meter | * Volume wheel LED used to detect microphone |
| **13** | P2 | Hardware EQ | * Saves to DAC |
| **14** | P2 | Smart/auto mic gain | * Automatically adjusting mic levels |
| **15** | P2 | Factory Reset | * Allow user to reset to default |
| **16** | P2 | High gain | * Able to power high impedance headphones * Add volume to microphone * Match or exceed SteelSeries GameDAC Gen 2\* |
| **17** | P2 | Replaceable buttons | * Buttons/keys can be removed and replaced * Set of buttons/keys that have Out of Box icons * Set of buttons/keys that are general-use/blank |

Software Features & Design Concept (Headset + DAC)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item #** | **Priority** | **Features** | **Details** | **Reference/Images** |
| 1 | P1 | EQ Presets | * Customizable EQ Presets * Save onto DAC/AMP * Sync with LED |  |
| 2 | P1 | Product Render | * List of options for macros and assignments * Precise assignments for single press, double press, and press + hold * Able to revert to default OOB state * Able to customize each button’s RGB color |  |
| 3 | P1 | Equalizer | * Parametric EQ * Show approximate regions for key sounds in popular games * Show approximate regions for bass/mid/treble |  |
| 4 | P1 | Battery Indicator | * See battery life %/Hours left |  |
| 5 | P1 | ChatMix | * Customizable Volume LED Ring Color when making adjustment * Sliders to adjust levels of chat vs game audio * Sync with DAC/AMP |  |
| 6 | P1 | Mic Mute | * Toggle and sync with device LED |  |
| 7 | P1 | Spatial/Surround Sound | * Customizable (options depend on solution available) * Room size – Slider * Reverb - Slider * Dynamic Range Control/Ambience – Slider * SW adjustment only |  |
| 8 | P1 | Audio/Mic Volume Adjustment Slider | * Sync with Volume LED Ring (DAC) |  |
| 9 | P1 | Sidetone | * Customizable Volume LED Ring Color when making adjustment * Slider to adjust level of sidetone (0-100) * Toggle on/off * Sync with DAC/AMP |  |
| 10 | P1 | Programmable Buttons | * List of options for macros and assignments * Precise assignments for single press, double press, and press + hold * Able to revert to default OOB state * Able to customize each button’s RGB color |  |
| 11 | P1 | Default State | * Able to control default state * VU meter * RGB customization & on/off |  |
| 12 | P2 | LED Adjustment | * Customize RBG zones on Volume Wheel * Precise control of volume wheel RGB (0-100 brightness, customized color for every interaction) * Customize button RGBs |  |
| 13 | P2 | Audio Quality | * Bit Rate & Sample Size Selection |  |
| 14 | P2 | Hotkey Controls | * Able to bind and control features with hotkeys * Sidetone, spatial, mic mute, etc. |  |
| 15 | P2 | Live Monitor/VU Meter | * Real-time voice meter for microphone monitoring using Volume LED Wheel * Toggle on/off |  |
| 16 | P2 | High/Low Gain Adjustment | * Able to save setting into hardware |  |
| 17 | P2 | Sound profiles | * Audio levels, EQ, ChatMix, Sidetone, etc. all saved to profiles |  |
| 18 | P2 | Noise Suppression | * AI Noise Reduction - Toggle * Noise Gate – Slider |  |
| 19 | P2 | Firmware/Driver Update | * Notification updates for firmware or drivers |  |
| 20 | P2 | Factory Reset | * Button to Factory Reset |  |
| 21 | P2 | Community Shared Profiles | * Allow import/export of EQs, profiles, overall setting preferences to share |  |
| 22 | P2 | Smart/Auto Mic Gain | * Toggle & Sync with DAC/AMP |  |
| 23 | P2 | Output selection | * Swap between the connected front and back devices connected |  |
| 24 | P2 | Wireless (2.4 GHz)  [re-pair] | * Option/guide user to re-pair headset ULL * Indicate to user pairing is occurring and successful |  |
| 25 | P2 | Personalized HRTF | * HRTF (picture upload) – May need to sync with mobile for ease of use |  |

1. Project Launch information
   1. **Project Scope**

|  |  |
| --- | --- |
| **Description** | **Requirement** |
| **Regions** | Global |
| **Market Position** | Flagship |
| **NPI Quantity** | TBD |

* 1. **Volume Forecast (6 months)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Month 1** | **Month 2** | **Month 3** | **Month 4** | **Month 5** | **Month 6** |
| TBD | TBD | TBD | TBD | TBD | TBD |

**Regional breakdown**

**Non -Keyboard:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| US | EMEA | CHINA | APAC | LATAM |
| TBD | TBD | TBD | TBD | TBD |

1. FINANCIAL REQUIREMENTS
   1. **Cost Structure**

|  |  |
| --- | --- |
| **Description** | **Cost Requirement** |
| **Target Product Cost** | TBD |
| **Target Accessories Cost (if applicable)** | TBD |
| **Target Packaging Cost** | TBD |
| **Total Cost** | $75 |

1. PRODUCT ID
   1. **Product Visualization**
2. USER EXPERIENCE
   1. **Use Cases**

|  |  |
| --- | --- |
| **Category** | **Specification** |
| **Software** | * TBD |
| **Firmware** | * TBD |
| **Hardware** | * TBD |
| **Cable** | * TBD |
| **Mechanical** | * TBD |
| **Electrical** | * TBD |

1. ACCESSORIES
   1. Accessories

*Accessories subject to change depending on cost structure*

|  |  |
| --- | --- |
| **Accessory** | **Specification** |
| Detachable Cable | 3.5mm – 3.5mm HyperFlex Cable |
| Headset Bag |  |
|  |  |