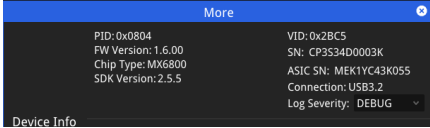
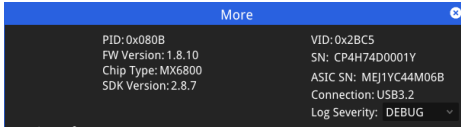
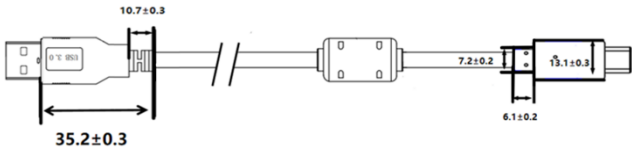
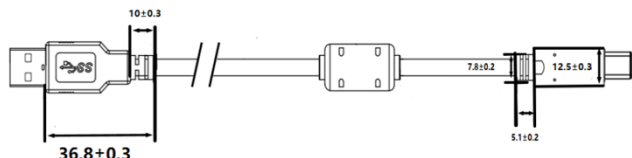
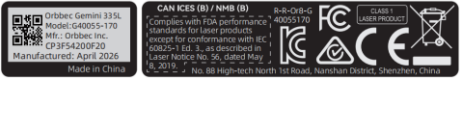
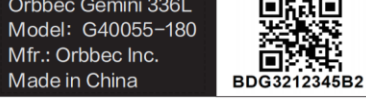
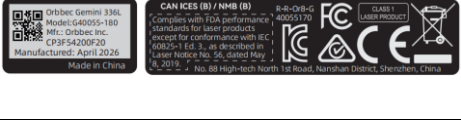
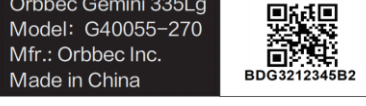
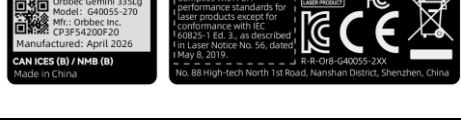
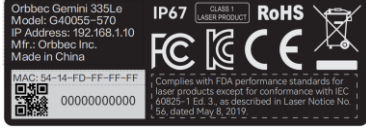


Product Change Notification

Manufactory	Orbbec Inc.	PCN No.	PCN_20260629001
Release date of PCN	2026.06.29	Subject of PCN	Firmware version, cable and label change
PCN Contents	- Gemini 335/336/330/335L/336L/330L/335Lg/335Le will update the factory firmware version from V1.6.00 to V1.8.10 - For detailed changelog, please refer to the link: Firmware changelog - This Product Change Notification (PCN) has been officially published on Orbbec's website under the Product Change Notifications section for public reference. - A second-source USB cable will be introduced for the Gemini 330 series box packaging. - The product label will be updated to include more detailed information.		
Reasons for PCN	New Features: - Expand hardware depth-to-color alignment to all RGB resolutions. - Add a new frame rate of 20 FPS to depth & IR & color streams. - Add configurable color presets: Default and Warm Biased AWB. - Add configurable exposure alignment support to all synchronization modes. - Extended depth data formats, additional: Y12 & Y14. - Add CCP (Control Channel Privilege) support, enabling control channel access management. - Add DHCP lease auto-renewal mechanism - Add 640 × 360 (16:9) color resolution for the USB 2.0 connection. - Add new color stream options of 640x480 @ 10/20FPS and 424x240 @ 10/20FPS for the USB 2 connection. - Add support for setting the camera gateway address to 0.0.0.0. - Add an anti-flicker mode on/off switch for the color image anti-flicker function. - Add new depth presets High Accuracy & High Density. - Add configurable DHCP timeout with flexible range of 5~180s (default: 45s). - Add support for configuring the disparity search range, disparity offset and AE ROI (depth/IR/color) before starting streams. - Add a new feature to boost the supported maximum trigger frequency for frame rates of 30fps and lower, available only over USB 3.0 and GMSL2 connections. - Add support for hosts with multiple NICs and multi-IP configurations for NICs.		

		Improvements: ● Improve the reliability of the start stream operations ● Improvement: color frames from rolling shutter sensors are not synced to trigger signals in triggering modes and stream continuously in the configured frame rate. ● Improve the reliability of the start stream operations in triggering modes for USB 2 connections. ● LRM sampling rate increased to 10Hz (up from 2.5Hz) with faster data readout. ● Optimize RGB Gain settings: Increase upper limit from 128 to 248; align RGB Gain mapping with Depth Gain. Fixed Issues: ● Fix a data stream transmission issue when the host Ethernet cable was hot-plugged. ● Fix a low-probability issue that the device falls into boot/recovery mode when unstable power supply. ● Fix image flickering issue on color cameras when ROI is set to $\leq 50 \times 50$ pixels. ● Fix the issue where color images could flicker in inter-camera synchronization modes at 5 FPS ● Fix network timeout ($>100s$) after power-on that prevented device discovery. ● Fix triggered-mode timestamp deviations at exposure end to improve multi-camera and external device synchronization. ● Fix occasional failure of manually set color exposure parameters to take effect.		
Product Identification Methods		Version Check: Use the Orbbec Viewer tool, detailed information is in the link " OrbbecViewer user manual "		
Implementation Time of PCN		2026/07/29	PCN Implement Strategy	Running Change ^[1]
Content of the change	Product Model	Production Specifications before Change	Production Specifications after Change	
Firmware version change	Gemini 335/336/330 335L/336L/330L 335Lg/ 335Le			

Add second-source USB cable	Gemini 335/336/330 335L/336L/330L	First source USB cable:  Second source USB cable:  The second-source USB cable is identical to the first-source cable in electrical performance.
Product label change	Gemini 335	 
	Gemini 336	 
	Gemini 335L	 
	Gemini 336L	 
	Gemini 335Lg	 
	Gemini 335Le	 
Author of PCN	Qingchen Meng	Date: 2026-06-29

Affected Product List				
Part No.	100100476	Product Description	[Gemini 335] 3D camera box packing V1.0	
Part No.	100100473	Product Description	[Gemini 335] 3D camera bulk packing V1.0	
Part No.	100100500	Product Description	[Gemini 336] 3D camera box packing V1.0	
Part No.	100100506	Product Description	[Gemini 336] 3D camera bulk packing V1.0	
Part No.	100100478	Product Description	[Gemini 335L] 3D camera box packing V1.0	
Part No.	100100477	Product Description	[Gemini 335L] 3D camera bulk packing V1.0	
Part No.	100100501	Product Description	[Gemini 336L] 3D camera box packing V1.0	
Part No.	100100505	Product Description	[Gemini 336L] 3D camera bulk packing V1.0	
Part No.	100100487	Product Description	[Gemini 335Lg] 3D camera box packing V1.0	
Part No.	100100504	Product Description	[Gemini 335Lg] 3D camera bulk packing V1.0	
Part No.	100100522	Product Description	[Gemini 335Le] 3D camera box packing V1.0	
Part No.	100100553	Product Description	[Gemini 335Le] 3D camera bulk packing V1.0	
Part No.	100100489	Product Description	[Gemini 330] 3D camera bulk packing V1.0	
Part No.	100100498	Product Description	[Gemini 330L] 3D camera bulk packing V1.0	
Reviewing/Approval Departments	PD	Approve: Wei Li	PM	Approve: Aiwon Li
	R&D	Approve: Qinghong Liu	Quality	Approve: Qingchen Meng
Remark: [1] Running change refers to the process during product change implementation where the old version's inventory is gradually consumed and production gradually switches to the new version. Customers will naturally begin receiving the new version at a certain point in time, rather than all products being replaced on a specified date.				

Appendix A: Product Changelog Detailed Information

1. New features

No.	Content	Camera Involved
1	Expand hardware D2C (Depth-to-Color) alignment support, now covering all RGB camera resolution modes. Users can directly obtain hardware-level depth-to-color alignment results in high-resolution color image modes without relying on host-side software alignment processing, significantly reducing host CPU utilization. Since the on-chip D2C alignment only supports resolutions up to 640x480, for all color image resolutions above 640x480, the in-camera aligned depth images will be further upsampled on the host side to match the desired color image resolution.	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
2	Add a new frame rate of 20 FPS to depth & IR & color streams. (Note: 20 FPS is not supported for the following configurations - Gemini 335/336/330 RGB at 320×180 and 320 ×240, Gemini 335/336/330/335L/336L/330L/335Lg IR & depth at 848×100.)	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
3	Add configurable color presets: Default and Warm Biased AWB. The Default preset gives standard color reproduction, while the Warm Biased AWB preset is optimized for mixed-lighting scenes, automatically suppressing blue tint in white-light regions and improving overall perceptual consistency. The default preset is Default.	Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
4	Add configurable exposure alignment support for short-baseline cameras across all synchronization modes, enabling flexible intra- and inter-camera synchronization.	Gemini 335/336/330
5	Add extended depth data formats, besides the original format Y16, depth can stream in additional formats: Y12 & Y14. The new formats can be used to suppress the bandwidth required for streaming depth data and thus reduces unexpected frame drops on busy networks.	Gemini 335Le
6	Add CCP (Control Channel Privilege) support, enabling control channel access management to enhance device control security and consistency in multi-host environments.	Gemini 335Le
7	Add DHCP lease auto-renewal mechanism. The device proactively initiates lease renewal before IP expiration, preventing network disconnection caused by lease timeout and improving network stability.	Gemini 335Le
8	Add 640 × 360 (16:9) color resolution for the USB 2.0 connection.	Gemini 335/336/330
9	Add new color stream options of 640x480 @ 10/20FPS and 424x240 @ 10/20FPS for the USB 2 connection.	Gemini 335/336/330
10	Add support for setting the camera gateway address to 0.0.0.0, which is suitable for scenarios that only require local network communication without external network access (such as closed networks or direct device connections). This can avoid network issues caused by improper gateway configuration and improve usage stability.	Gemini 335Le
11	For the color image anti-flicker function, when the power line frequency is set to Auto, an anti-flicker mode on/off switch is added. When the anti-flicker mode is enabled, the exposure time is not allowed to fall below the anti-flicker threshold, to avoid brightness fluctuations in the image. When the anti-flicker mode is	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le

	disabled, the exposure time may fall below the anti-flicker threshold to prevent overexposure caused by excessively long exposure under bright light.																																													
12	Add new depth presets High Accuracy & High Density which are pre-integrated into the camera firmware. The depth preset High Accuracy is designed for robotics and the depth preset High Density is designed for 3D reconstructions.	Gemini 335Le																																												
13	Add configurable DHCP timeout with flexible range of 5~180s (default: 45s), enabling customized deployment across diverse network environments.	Gemini 335Le																																												
14	Add support for configuring the disparity search range, disparity offset and AE ROI (depth/IR/color) before starting streams. There is an additional min/max check for the configured values to ensure that the actually used configurations are within the valid min/max ranges. This feature must be used with Orbbec SDK v2_V2.9.0 or a later version.	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le																																												
15	Add a new feature to boost the supported maximum trigger frequency for frame rates of 30fps and lower. This feature is supported only for the USB 3.0 and GMSL2 connections. With the fps boost feature enabled, the supported maximum trigger frequency is increased from half of the configured frame rate to the full frame rate, which enables image acquisitions at higher frequencies in both hardware and software triggering modes. When the fps boost feature is enabled and the supported maximum trigger frequency is boosted, the supported maximum exposure time is reduced by ~50% in comparison to the unboosted configuration, as a side effect. The fps boost feature is optional and is disabled by default. Thus, users can boost the maximum trigger frequency in triggering modes on demand, and there is no need to modify their established implementations and applications. Below is a table for a direct comparison between the fps boost feature disabled and enabled: <table><tr><th rowspan="2">Set The Camera's Fixed Frame Rate(fps)</th><th colspan="2">fps Boost Disabled</th><th colspan="2">fps Boost Enabled</th></tr><tr><th>Supportable Passive Trigger Interval (ms)</th><th>Supportable Passive Trigger Frequency (Hz)</th><th>Supportable Passive Trigger Interval (ms)</th><th>Supportable Passive Trigger Frequency (Hz)</th></tr><tr><td>90</td><td>> 22.3</td><td>0 - 45</td><td>> 22.3</td><td>0 - 45</td></tr><tr><td>60</td><td>> 33.4</td><td>0 - 30</td><td>> 33.4</td><td>0 - 30</td></tr><tr><td>30</td><td>> 66.7</td><td>0 - 15</td><td>> 33.4</td><td>0 - 30</td></tr><tr><td>15</td><td>> 133.4</td><td>0 - 7.5</td><td>> 66.7</td><td>0 - 15</td></tr><tr><td>10</td><td>> 200</td><td>0 - 5</td><td>> 100</td><td>0 - 10</td></tr><tr><td>6</td><td>> 333.4</td><td>0 - 3</td><td>> 166.7</td><td>0 - 6</td></tr><tr><td>5</td><td>> 400</td><td>0 - 2.5</td><td>> 200</td><td>0 - 5</td></tr></table>	Set The Camera's Fixed Frame Rate(fps)	fps Boost Disabled		fps Boost Enabled		Supportable Passive Trigger Interval (ms)	Supportable Passive Trigger Frequency (Hz)	Supportable Passive Trigger Interval (ms)	Supportable Passive Trigger Frequency (Hz)	90	> 22.3	0 - 45	> 22.3	0 - 45	60	> 33.4	0 - 30	> 33.4	0 - 30	30	> 66.7	0 - 15	> 33.4	0 - 30	15	> 133.4	0 - 7.5	> 66.7	0 - 15	10	> 200	0 - 5	> 100	0 - 10	6	> 333.4	0 - 3	> 166.7	0 - 6	5	> 400	0 - 2.5	> 200	0 - 5	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg
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2. Improvements

No.	Content	Camera Involved																																																
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2	Color frames from rolling shutter sensors are not synced to trigger signals in triggering modes and stream continuously at the configured frame rate.	Gemini 335/336/330																																																
3	Improve the reliability of the start stream operations in triggering modes for the USB 2 connection.	Gemini 335/336/330 Gemini 335L/336L/330L																																																
4	The LRM measurement sampling rate is updated from 2.5Hz to 10Hz with improved reading out speed.	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le																																																
5	Optimized color gain settings: 1. Extended max color Gain from 128 to 248, enhancing low-light image brightness and detail capture; 2. Aligned color gain mapping with depth gain mapping to simplify multi-sensor calibration and reduce customers' integration effort. Adjusted differences as per table below: <table border="1"> <thead> <tr> <th>Gain setting value</th><th>Old gain multiplier</th><th>New gain multiplier</th></tr> </thead> <tbody> <tr><td>0</td><td>1.00x</td><td>1.00x</td></tr> <tr><td>8</td><td>1.50x</td><td>1.00x</td></tr> <tr><td>16</td><td>2.00x</td><td>1.00x</td></tr> <tr><td>24</td><td>2.50x</td><td>1.50x</td></tr> <tr><td>32</td><td>3.00x</td><td>2.00x</td></tr> <tr><td>48</td><td>4.00x</td><td>3.00x</td></tr> <tr><td>64</td><td>5.00x</td><td>4.00x</td></tr> <tr><td>80</td><td>6.00x</td><td>5.00x</td></tr> <tr><td>96</td><td>7.00x</td><td>6.00x</td></tr> <tr><td>112</td><td>8.00x</td><td>7.00x</td></tr> <tr><td>128</td><td>9.00x</td><td>8.00x</td></tr> <tr><td>160</td><td>N/A</td><td>10.00x</td></tr> <tr><td>192</td><td>N/A</td><td>12.00x</td></tr> <tr><td>224</td><td>N/A</td><td>15.00x</td></tr> <tr><td>248</td><td>N/A</td><td>15.50x</td></tr> </tbody> </table>	Gain setting value	Old gain multiplier	New gain multiplier	0	1.00x	1.00x	8	1.50x	1.00x	16	2.00x	1.00x	24	2.50x	1.50x	32	3.00x	2.00x	48	4.00x	3.00x	64	5.00x	4.00x	80	6.00x	5.00x	96	7.00x	6.00x	112	8.00x	7.00x	128	9.00x	8.00x	160	N/A	10.00x	192	N/A	12.00x	224	N/A	15.00x	248	N/A	15.50x	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
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3. Fixed Issues

No.	Content	Camera Involved
1	Fix a data stream transmission issue that could occur when multiple cameras were connected to the same switch and the host Ethernet cable was hot-plugged, improving the robustness of the cameras under network topology changes.	Gemini 335Le
2	Fix a low-probability issue where unstable power supply during the camera power-on self-check process could cause an abnormal firmware health status, which in turn brings the device into boot/recovery mode.	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
3	Fix the issue where the color image flickers when the ROI of the color image is set to 50×50 pixels or lower.	Gemini 335/336/330 Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
4	Fix an issue where color images could flicker in inter-camera synchronization modes at 5 FPS, improving the stability of synchronized multi-camera imaging.	Gemini 335L/336L/330L Gemini 335Lg Gemini 335Le
5	Fix the issue where the device could not be discovered due to network connection timeout (>100s) after power-on.	Gemini 335Le
6	Fix an issue where timestamp alignment at the end of exposure could have significant deviations in triggered mode for cameras, improving temporal accuracy for multi-camera synchronization and coordination with external devices.	Gemini 335Le
7	Fix the issue where manually setting color exposure parameters occasionally fails to take effect.	Gemini 335/336/330 Gemini 335L/336L/330L

[Receipt of PCN]

【The response from customer is as follows】：

☐ 【Acceptance】 ☐ 【Not Acceptable】 ☐ 【Conditional Acceptance】

☐ 【Need detailed information, as follows】：

☐ 【Require new samples, quantity: [Specify the desired quantity here] 】

☐ 【Test report and quality report: [Please provide or request these reports accordingly]]

☐ 【Others: List any additional requirements or information needed here】

【Information of the Respondent from customer】

Name		Phone		E-mail		Date	
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