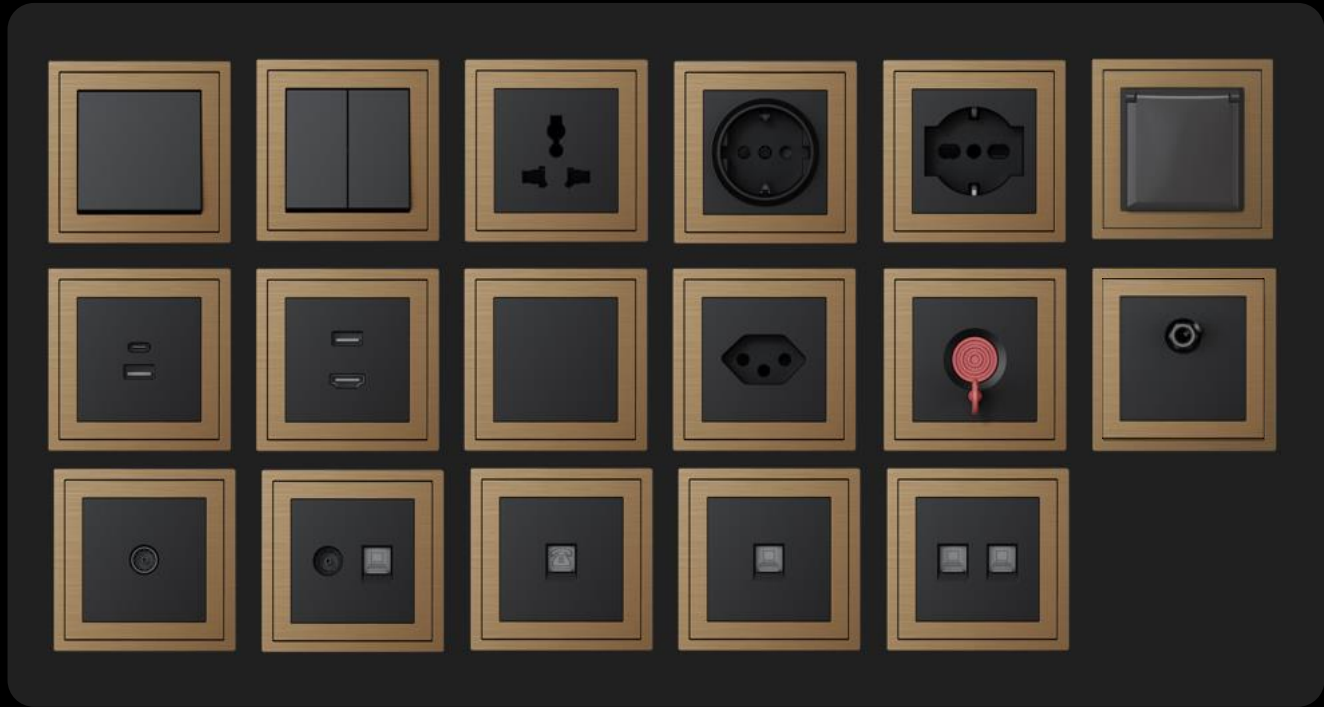


The background of the entire image is a photograph of a modern bedroom. The room features dark wood-paneled walls and a large window with a view of a landscape. A bed with dark bedding is visible in the foreground. The lighting is dim, creating a serene atmosphere. A vertical purple bar is on the left side of the image.

Xelent Panel • HomeKit Gateway • DALI-2 Controller HDL New Smart Control Solutions

Intelligent Connectivity, Elevated Experience

What panels are available for Xelent?



Smart Panel:

EU&US Standard

4/6/8 Button, Thermostat

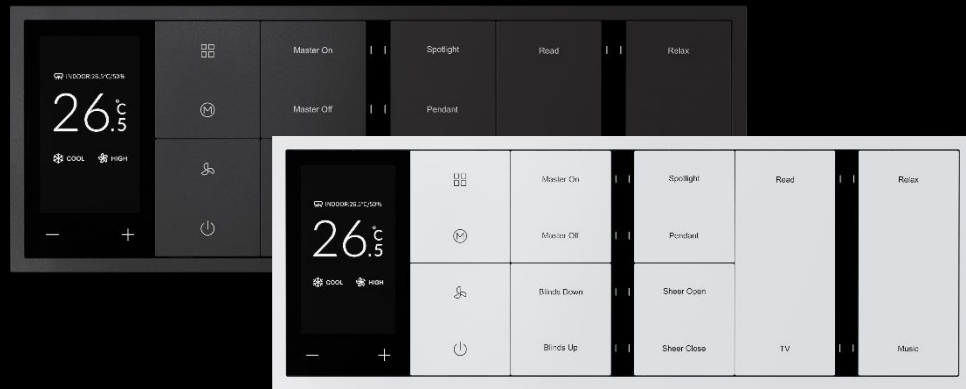
Protocol: KNX & BUSPRO

Non-smart Panel:

EU&US Standard

17 models in total

EU Standard



Material: Plastic

Color: Ivory White , Charcoal Gray



Material: Brushed Aluminum

Color: Black, Bronze, Brass

US Standard



Material: Plastic

Color: Ivory White 、 Charcoal Gray

Material: Brushed Aluminum

Color: Black、 Bronze、 Brass

Universal fit, instant install



Multi-Gang Installation:

1. Supports installation in European standard multi-gang boxes with **71 mm** center-to-center spacing; supports up to **4-gang** horizontal or vertical installation

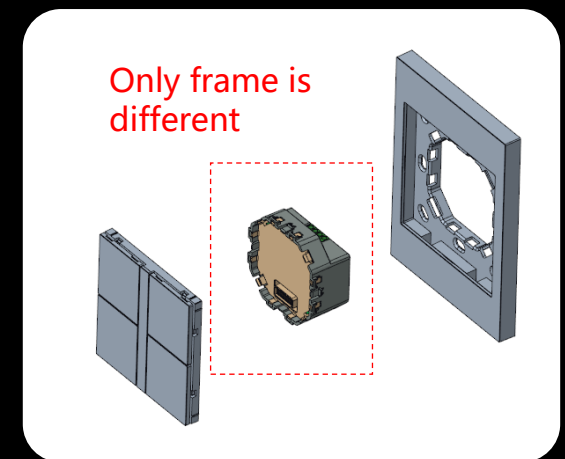
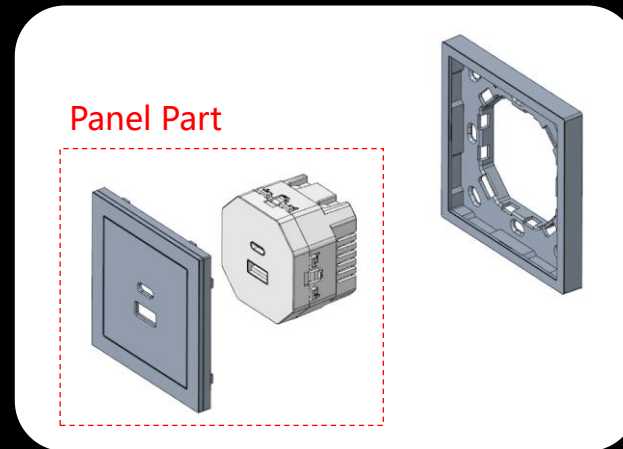
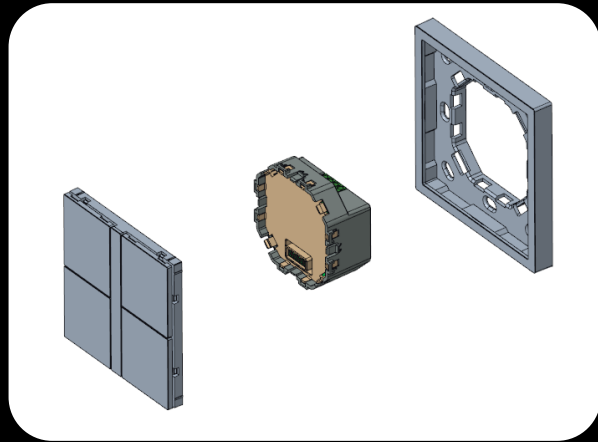


Single-gang installation:

1. Installation in 80-type European standard boxes
2. Installation in Swiss standard boxes
3. Installation in US standard boxes



Product Components



Smart Panel:

Assembled from 3 parts, packaged as 3 units
Panel + Base + Frame (with bracket)

Non-Smart Panel:

Assembled from 2 parts, packaged as 2 units
Panel + Frame (with bracket)

The difference between the EU and US Standard Version:

The panels and bases are the
same versions; only the frames
differ

【SoftStart】 More comfortable & Eye-friendly

People's eyes are sensitive to light

Sudden bright lights in a dark environment can cause discomfort

【SoftStart】 Mode:

- Lights gradually turn on when motion is detected.
- Lights smoothly fade off when no motion is detected.(Factory default)

Standard Mode:

- Lights instantly turn on when motion is detected.
- Lights immediately turn off when no motion is detected.



Soft light
fades in at night

No more sleep disturbance



Harsh light
sudden night glow

High-Precision, Adjustable Range

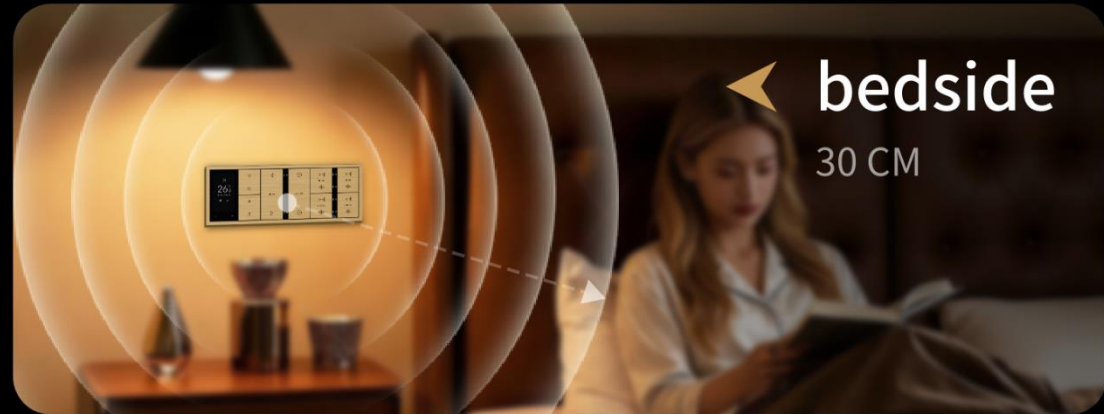
【ToF】 Human Presence Sensor



Accurately detects distance between 10–100 cm in 10 cm steps, enhancing adaptability and user experience

30cm bedside wake, 80cm hallway light

—
Intelligent interaction



*Note:ToF (Time of Flight) is a technology used for precise distance measurement in robotics and sensing..

±1°C precision for smart comfort

High-precision + multi-source temp control



With a built-in sensor and using HDL **[ATS]**, the panel's temperature has a $\pm 1^\circ\text{C}$ deviation

Beyond the built-in sensor, the Thermostat can average temperatures from up to **8 external** sources for HVAC control, ensuring comprehensive coverage and accurate indoor temperature measurement.

*Notes:

ATS: Accurate Temperature System

Tested within an ambient temperature range of 16°C to 30°C; performance may vary outside this range

Deviation values are from HDL laboratories; actual on-site conditions may differ.

Automatic saving, effortless green

Auto AC off when open, auto unlock when closed



【LogicLock】 function

For example:

When Xelent is used with the RCU in a hotel room, opening the window automatically turns off the air conditioner, locks the control panel, and prevents the guest from restarting the air conditioner via the panel.

When the window is closed, the panel unlocks, restoring manual control of the air conditioner.

Thermostat Featuring High-Definition LCD for Enhanced Experience and Scalability

Compared to traditional digital tube thermostat, it has the following advantages:

- Full HD display for sharper visuals and refined texture
- Immersive, easy-to-read control interaction
- Scalable LCD supporting future customization



Homepage



Temperature



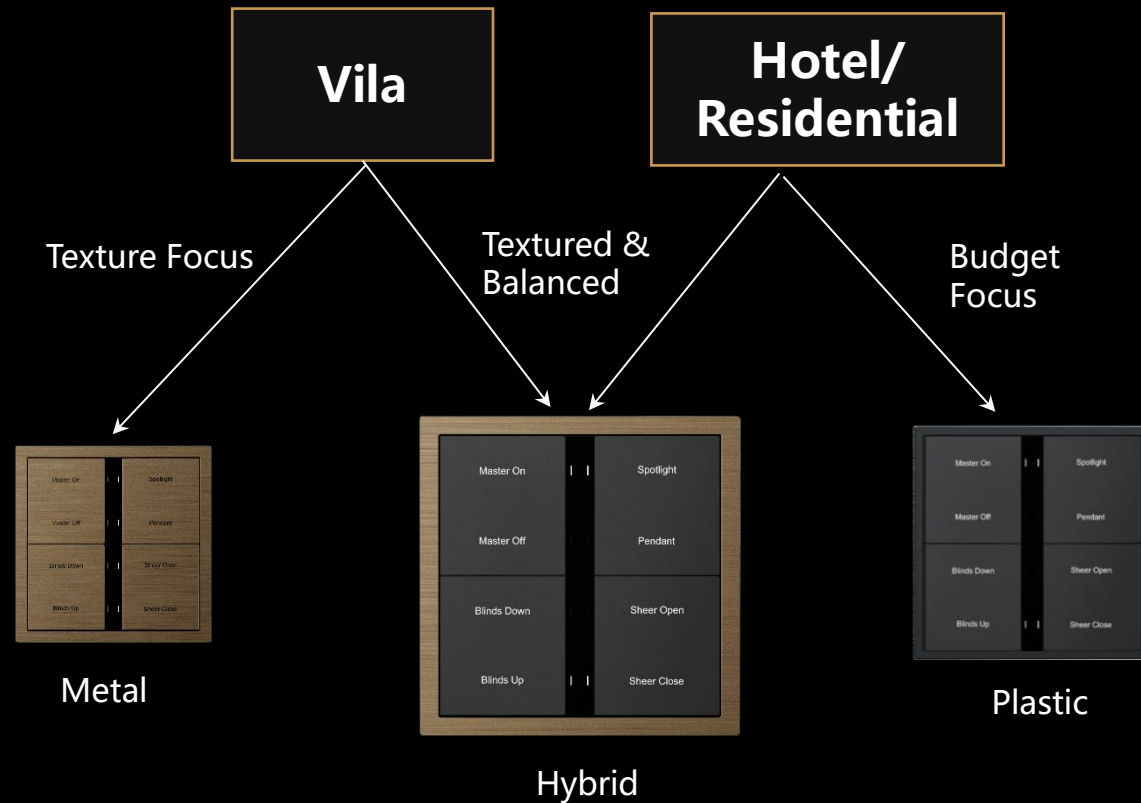
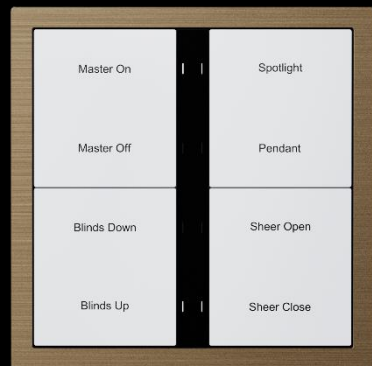
Mode

*Notes:

The resolution of this display is 272×480 , with 130,000 pixels

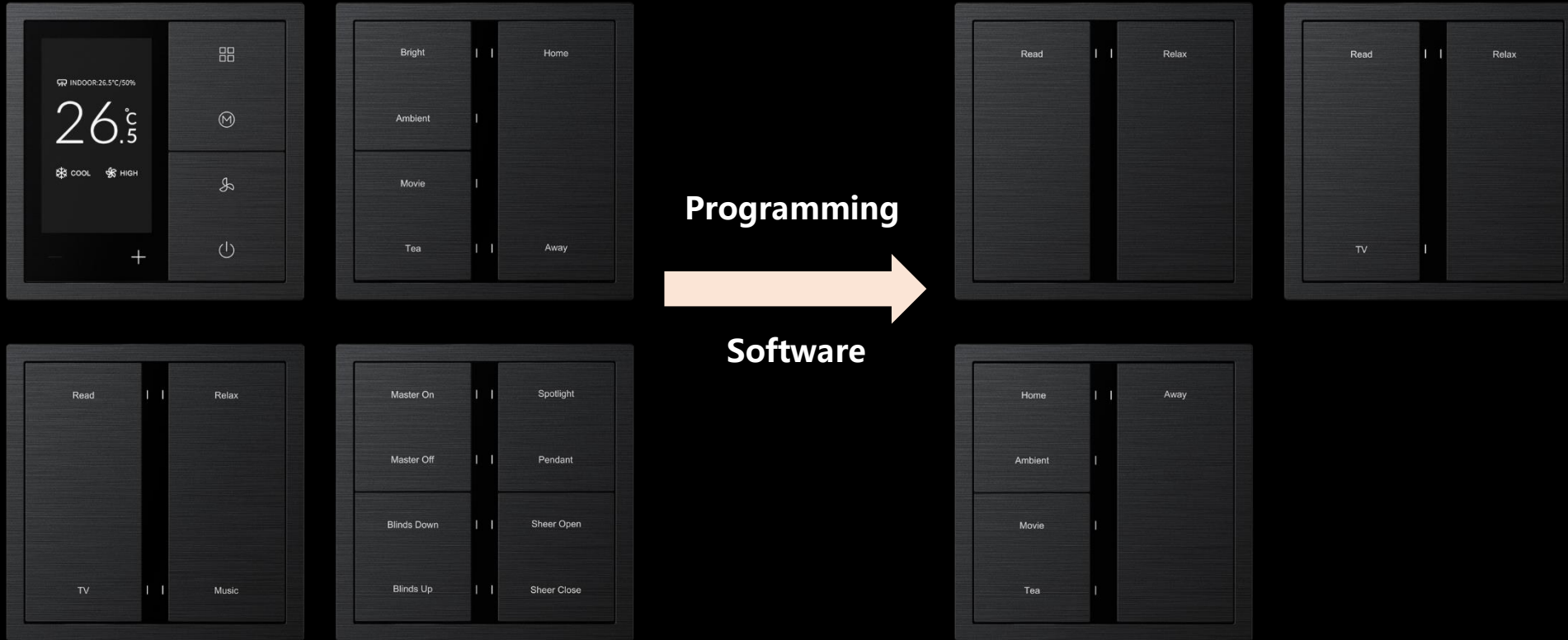
Supports mixed use of metal frames + plastic buttons to meet diverse business needs

【Metal frame + plastic buttons】 improve texture over all-PC, with a slight cost increase.



Configurable as Different Keypad Types for Diverse Applications

Expandable Button Configuration via Programming Software



4 Buttons, 6 Buttons, 8 Buttons, Thermostat

2 Buttons, 3 Buttons, 5 Buttons

One panel multiple uses

Expandable Button Configuration via Debugging Software



For example
the 6-button panel
can be configured as:



6-Button



5-Button



4-Button



3-Button

One panel multiple uses

Expandable Button Configuration via Debugging Software

4-button panels adapt to multiple use cases in real projects



Use Case 1



Use Case 2



Use Case 3

Xelent Sales Toolkit



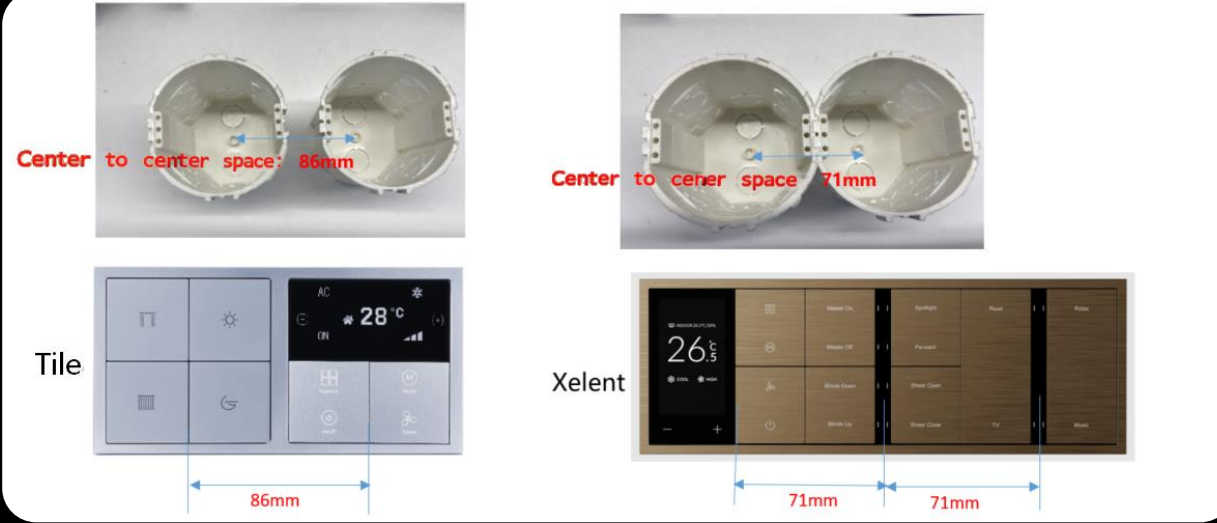
Democase



4-Button Panel, 6-Button Panel, 8-Button Panel, Thermostat, Non-Smart Panel



Comparison with Tile 2.1



Tile fits EU boxes but not multi-gang; only Xelent supports EU multi-gang


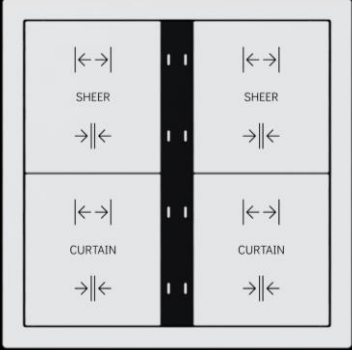
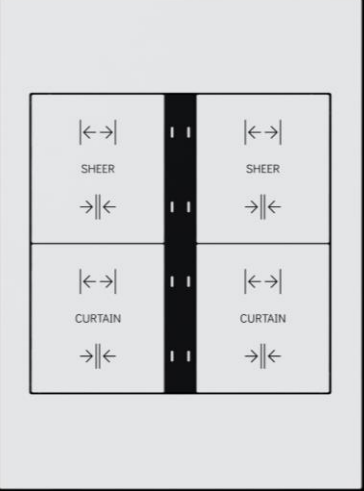


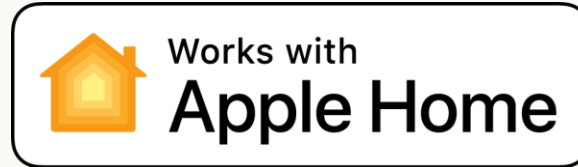
Opaque laser-engraved area; side-mounted indicator lights

Comparison with Tile 2.1

Category	Xelent	Tile 2.1
Product Version	Supports US version	No US version available
Installation	Supports multi-gang European standard boxes	Not support multi-gang European standard boxes
Human Sensing	Uses ToF technology for precise human sensing	Standard sensing solution
Display	LCD display with clearer and more intuitive visuals	Digital tube display
Indicator Light	On the side light strip	Laser-engraved area
Other Features	Same as Tile 2.1	Same as Xelent

Comparison with Tile 2.1

Category	Tile 2.1	Xelent EU	Xelent US
Dimension	86*86*10.5mm	81*81*9mm	86*116.5*9mm
			



HomeKit Functions of Buspro & KNX Gateway

Complete functional overview and deployment manual for the HDL Buspro
HomeKit integration gateway (MGWIP.430 & M/GWASC.1).

1 2 Contents Overview



01 HomeKit Introduction



02 Core Functions



03 Instructions & Setup

PART ONE

HomeKit Overview

A closer look at Apple's modern smart home framework, edge server topology, and integration parameters.

? Understanding Apple HomeKit

✓ HomeKit

HomeKit is a smart home platform released by Apple in 2014.

Apple defines HomeKit as a set of software development tools.

Apps created with HomeKit allow users to control connected home accessories from Apple devices.

✓ HomeKit Includes

HomeKit framework on iOS and other systems

HomeKit Access Protocol (HAP protocol)

HomeKit Accessory Development Kit

? Understanding Apple HomeKit

- ✓ Multiple HomeKit related sections listed on the Apple developer website



Developing with HomeKit

Whether you're an app developer, smart home enthusiast, or manufacturer, you can learn how to use HomeKit to create apps and accessories for the home.

Apps

Learn how iOS, iPadOS, tvOS, and watchOS apps seamlessly integrate with HomeKit accessories.

- [HomeKit Framework](#)
- [Human Interface Guidelines](#)
- [HomeKit Videos](#)
- [HomeKit Forums](#)

Accessories

Learn and explore how to create accessories for your home using the HomeKit Accessory Protocol.

- [HomeKit Open Source ADK](#)
To prototype noncommercial accessories
- [HomeKit Accessory Protocol Specification](#)
Noncommercial version*
- [HomeKit Accessory FAQs](#)

With the above definition, it is not difficult to understand the true meaning of the official certification of "Works with Apple HomeKit", indicating that this device is compatible with HomeKit and can interact with other HomeKit compatible software and hardware.



HomeKit Home Hub Architecture

⚡ Millisecond Local Latency

HomeKit uses a “Home Hub” for automation and remote access.

The Home Hub operates within the same **LAN**, providing millisecond-level response latency.

Compared with traditional gateways, Home Hub offers stronger processing performance.

Supports parallel processing and complex automation logic.

Enables highly flexible automation solutions such as

“**Shortcuts**” .

Homekit Home Hub Architecture

Privacy-First Encryption



HomePod mini

Supported Home Hub Devices: HomePod mini, HomePod, Apple TV (4th generation or later), iPad (no longer supported on iOS 16)

The Home Hub is also the "Internet gateway" for all HomeKit devices.

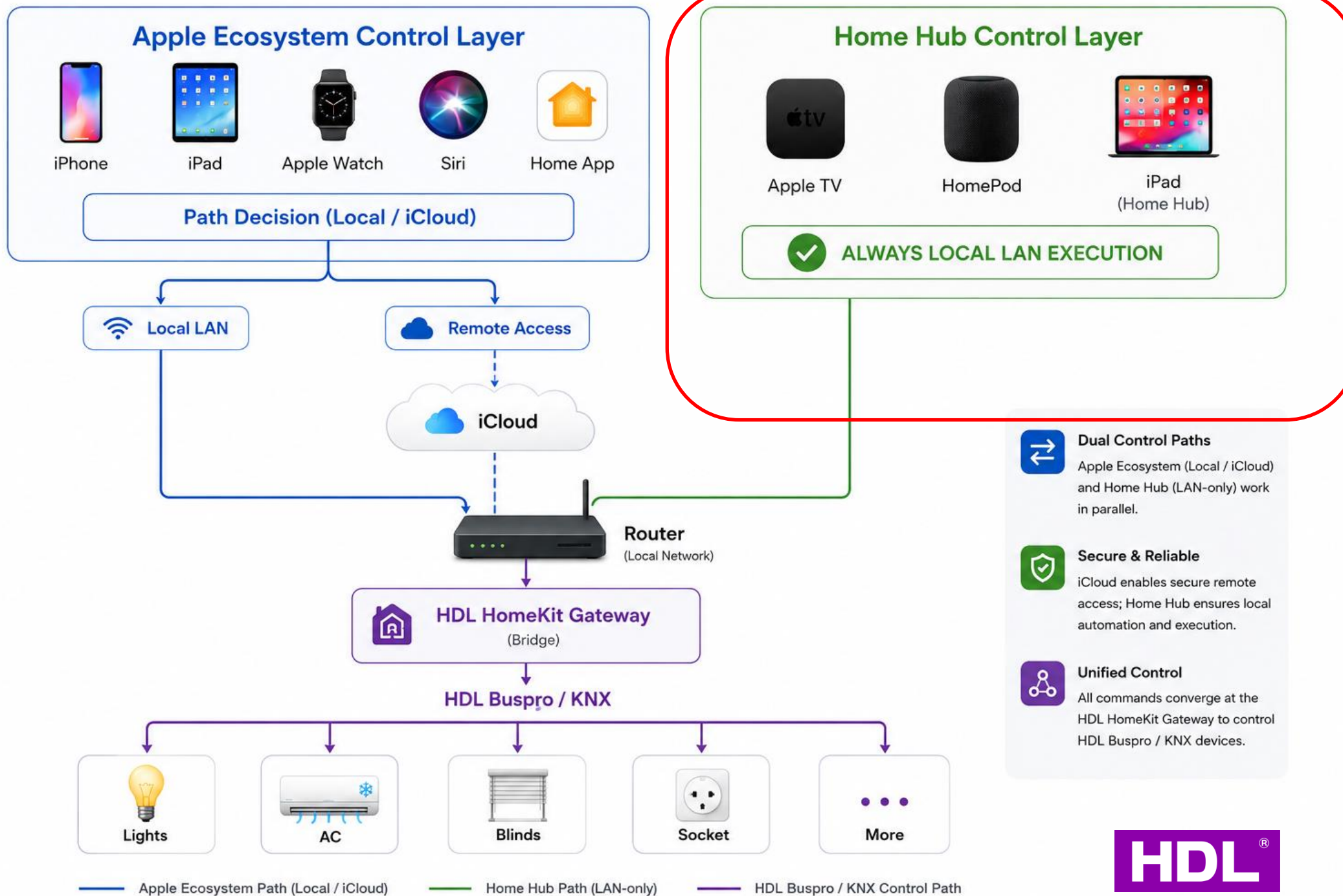
When users are outside the local network, devices are accessed remotely through iCloud and the Home Hub. Point-to-point encrypted sessions are established:




- * Between Home Hub and HomeKit devices
- * Between Home Hub and personal terminals

iCloud cannot access the actual transmitted data, maximizing security and privacy.



Homekit Architecture



-  **Dual Control Paths**
Apple Ecosystem (Local / iCloud) and Home Hub (LAN-only) work in parallel.
-  **Secure & Reliable**
iCloud enables secure remote access; Home Hub ensures local automation and execution.
-  **Unified Control**
All commands converge at the HDL HomeKit Gateway to control HDL Buspro / KNX devices.



PART TWO

Functions & Hardware

Exploring the HDL Buspro&KNX Gateway capabilities, certified dimming modules, and integration network topology.

Project Background



To connect the HDL Buspro wired system to the Apple ecosystem, allowing device control via the iPhone Home app and Siri.

Below HomeKit control functions are currently supported by HDL.

Gateway & Infrastructure Layer

Core protocol integration enables bidirectional communication and status synchronization with the Apple ecosystem.

Buspro Gateway

KNX Gateway

Smart Control Layer

Dimming / On/Off (Switch / Brightness / RGB) **Supported**

Color Temperature Light Function (Brightness / Color Temperature) **Supported**

Curtains/ Blinds (Percentage/Angle) **Supported**

Fan Coil AC (Temperature / Mode / Fan Speed) **Supported**

Underfloor Heating Function (On/Off / Set Temperature) **Supported**

Socket Control (On/Off Toggle) **Supported**

All-Scenario Sensor Matrix

Supports real-time, sub-second reporting of standard HomeKit status data, enabling high-precision, whole-home automation triggers.

Brightness Detection

Temp. & Humidity Detection

CO₂ Detection

Dry contact Detection

Leak Detection

Motion Detection

Hardware Specifications

Product Name	Model No.	Protocol	Device ID
Buspro Gateway (Homekit version)	MGWIP.430	System Bridge	309010306
KNX Gateway (Homekit version)	M/GWASC.1	System Bridge	309010256



Channel Capacity

Driver supports up to **150 functions** simultaneously.

Major Upgrade: DALI Controller Achieves DALI-2 Official Certification



Both core DALI controllers have officially passed independent testing by the DALI Alliance and achieved DALI-2 certification. A newly upgraded silk-screen design has also been applied to the product housing.

? What is Official DALI-2 Certification?



MDL64-KT.53

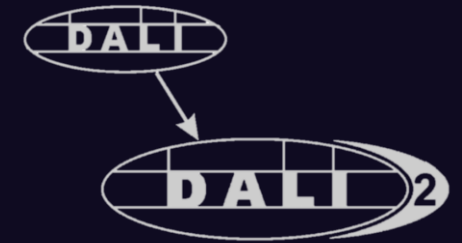


MDL64-BP.53

Based on the latest international standard IEC 62386, it is a mandatory product compliance requirement. It is a "seal of quality" led by the DALI Alliance, ensuring that all control devices undergo rigorous independent laboratory testing to guarantee excellent compatibility and stability.

DALI-2 CONTROLLER UPGRADE

“DALI-2 certification is the entry pass for products into the mainstream professional market. Standardization defines its core value.”



01. Seamless Interoperability

Certified devices from different brands can be “plug and play,” completely eliminating compatibility issues and significantly reducing system commissioning and maintenance costs.



02. Standardized Functions with Stability and Reliability

All device functions are standardized and rigorously tested to ensure consistent performance, precise dimming, and stable operation.



03. Premium Intelligence and High-End Lighting

It serves as a key “hard currency” entry requirement for global professional and high-end lighting projects, significantly enhancing brand trust and confidence among key enterprise customers.



Feature Comparison Table of Two Core DALI-2 Controllers

Comparison Criteria	Buspro-DALI (MDL64-BP.53)	KNX-DALI (MDL64-KT.53)
Communication Protocol	Based on the proprietary HDL Buspro communication protocol	Based on the KNX International Standard Protocol
Load Capacity	Supports 64 DALI drivers with distinct functions on a single loop.	
Dimming and Color	Supports switching, dimming, CCT, and color control (RGB/RGBW/XY/RGBCW/RGBAF).	Supports switching, dimming, CCT, and color control (RGB/RGBW/XY).
Control Dimensions / Objectives	16 Zones, 16 Scenes, Supports Sequences	
Fault Diagnosis and Maintenance	Comprehensive Status and Fault Feedback: Supports feedback on on/off status, brightness, and color temperature, as well as detection of luminaire faults, ballast failures, and DALI bus short circuits—enabling real-time monitoring of system conditions.	