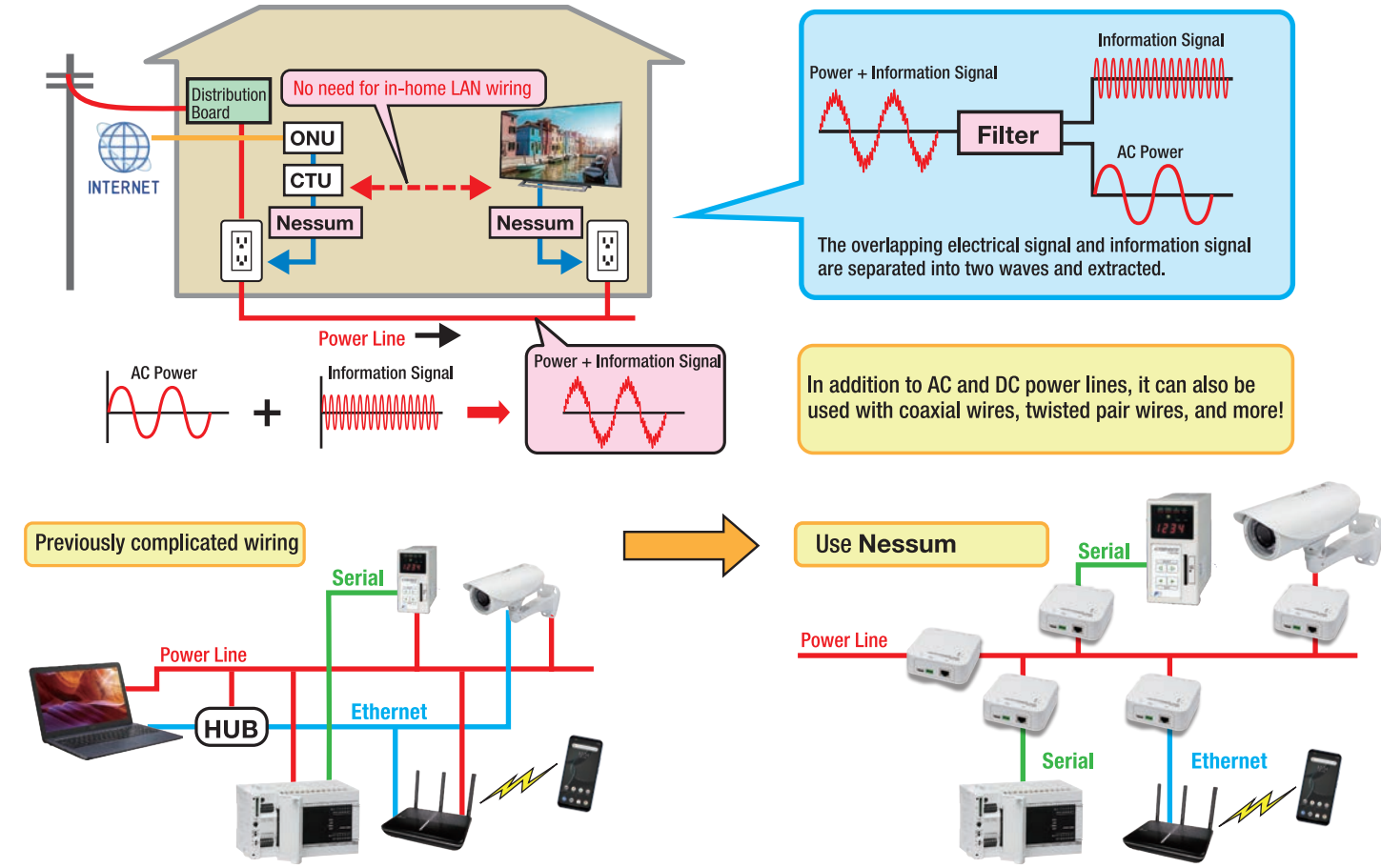


What's "Nessum"?

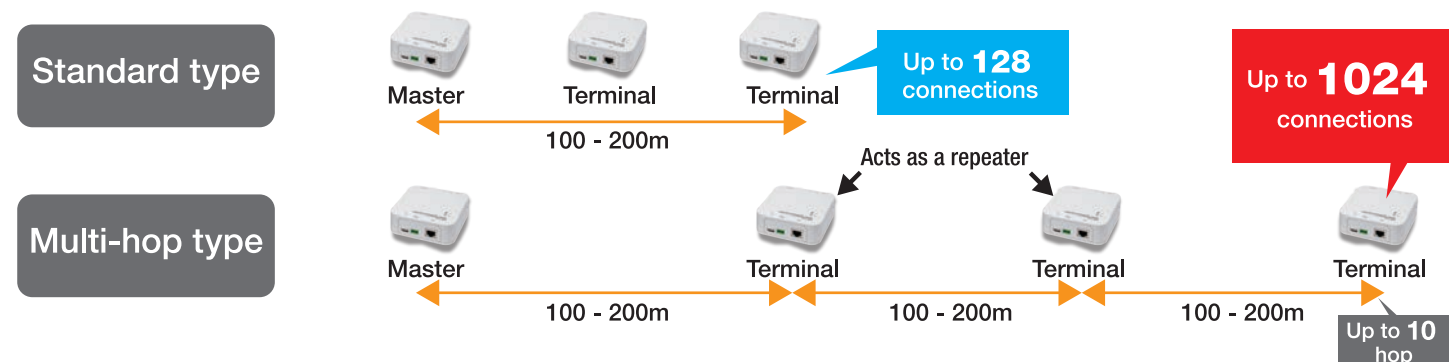
Overview of high-speed power line communications

Nessum is a method developed by Panasonic that transmits signals by superimposing high-frequency signals on various wires, including power lines.



Multi hop Technology

Since communication can be performed using power lines while relaying multiple terminals (Handset), it's possible to build a network even in factories or buildings where the wiring is long.

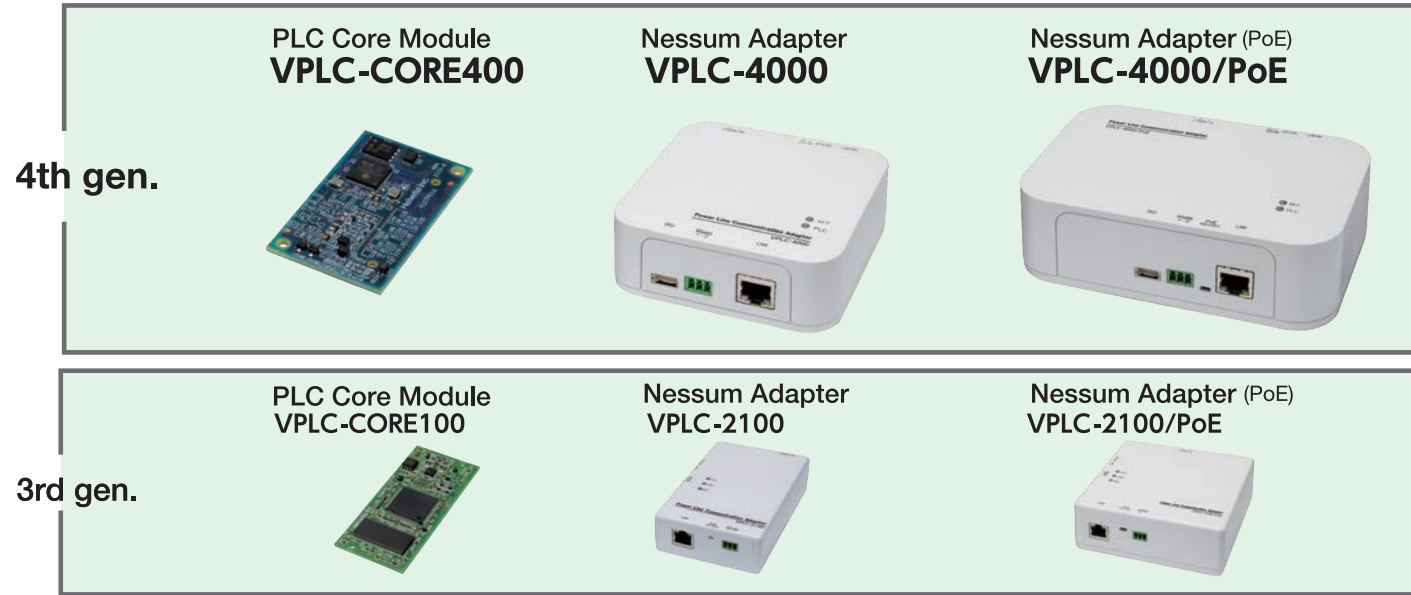


4th Generation PLC

Compared to 3rd generation technology, the bandwidth is reduced in two stages ($\times 1/2$, $\times 1/4$), enabling communication over distances up to approximately twice as long, and further expanding the bandwidth supports higher speeds.

x-1			
x-2	x-3		
x-4	x-5	x-6	x-7
x-8			
x-1	x-9		
x-2	x-3	x-10	x-11
x-12			
x-8		x-13	
x-1	x-9	x-14	x-15
31.25MHz 62.5MHz 93.75MHz 125MHz			
frequency			

Product Lineup

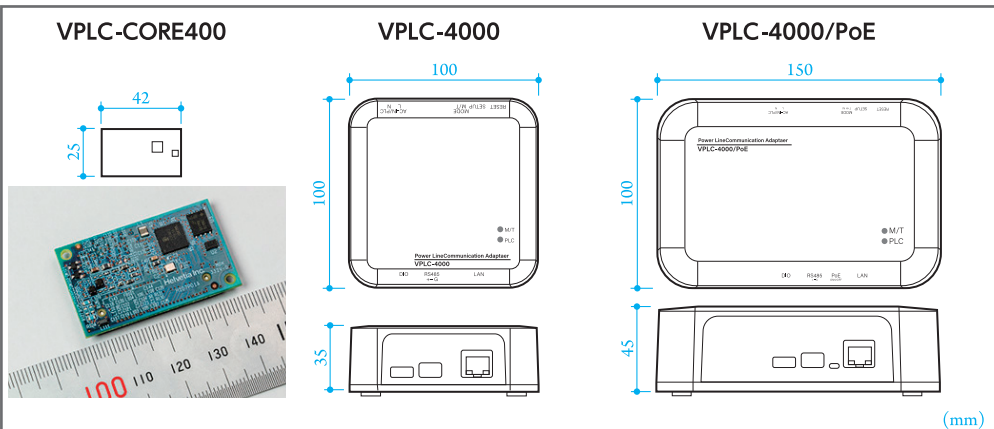


Specification

ITEM	4th Generation	3rd Generation
Standard	IEEE1901-2020	IEEE1901-2020
IP communication standard	IPv4/IPv6 (IPv6 is optional)	IPv4/IPv6
Frequency band	2 - 28MHz	2 - 28MHz
Transmission speed	240Mbps (MAX PHY rate)	240Mbps (MAX PHY rate)
Max. communication distance	2000m*	2000m*
Security	AES-128bit	AES-128bit
Hopping function	Yes (10 hop max.)	Yes (10 hop max.)
Max. connected nodes	1024 nodes	1024 nodes
Power supply by PoE	48V/15.4W(Optional)	48V/15.4W(Optional)
I/F	Ethernet (10M/100M)×1 RS485/UART ×1 DI ×2 (Option) DO ×2 (Option)	Ethernet (10M/100M) ×1 RS485/UART ×1 Coaxial (Option)
Operating temperature range	-20 to 60°C	0 to 50°C
Power supply	DC24V, AC100 - 240V (single/three phase)	DC24V, AC100 - 240V (single/three phase)

*varies depending on communication environment

Dimension



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High Speed Power Line Communications "Nessum" Compatible Adapter

for Next IoT Application



- 4th generation product lineup
- Easily realize IP conversion of various equipment control devices
- Realize high-speed communication (effective communication rate 70Mbps)
- Digital I/O signals can be directly controlled
- High noise resistance
- Long-term supply (5 years or more) possible
- Can also be provided as a communication module

Expanding high-speed power line networks

for surveillance cameras

for IoT in factories

for wireless LAN and security cameras on steel ships

for building temporary infrastructure

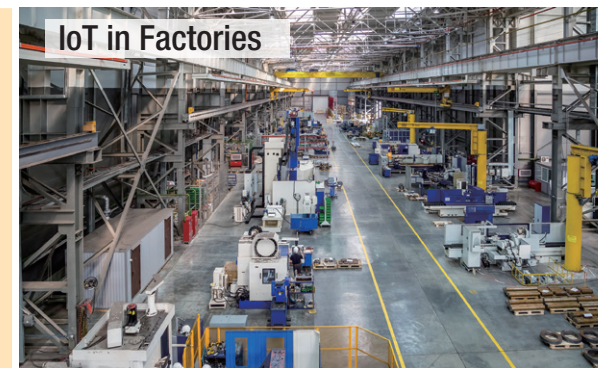
for wireless LAN access points



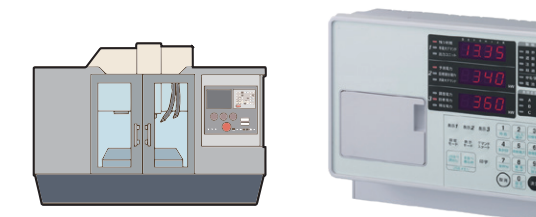
Applications of high-speed power line communications



By utilizing existing power lines, such as those used for security lights or street lights, surveillance cameras can be easily installed without the hassle of LAN wiring.



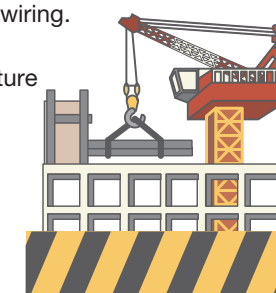
It is now possible to establish operations management and trouble monitoring for production equipment without installing new network wiring for equipment management, thereby improving production efficiency without the need for major construction work.



Without having to build new wireless or wired LAN, it is now possible to install wireless LAN access points and surveillance cameras, communicate with computers, and manage the operation status and trouble monitoring of various equipment in electrical rooms and machinery rooms.



When installing security cameras or setting up a wireless LAN environment in a temporary location such as a construction site, there is no need for cumbersome vertical trunk LAN wiring. By using power lines, it is possible to supply power and build a network infrastructure at the same time.



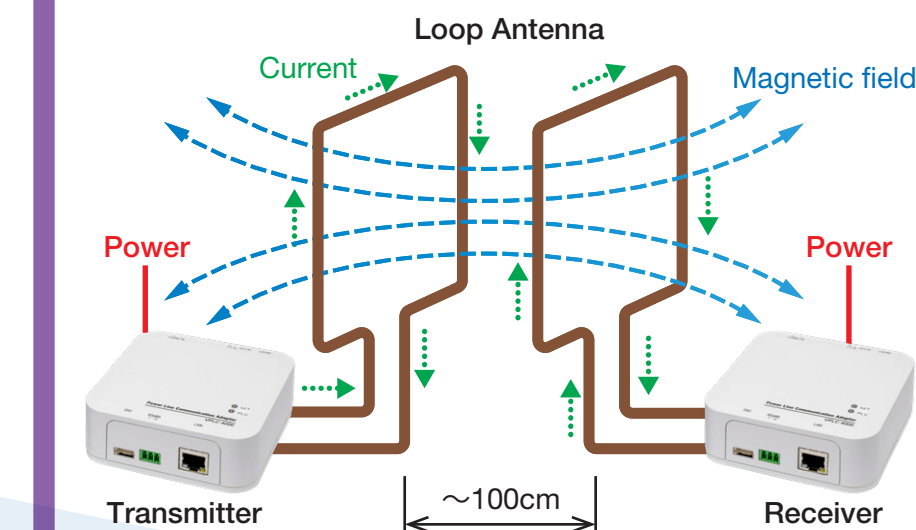
Even in places where wireless LAN signals are difficult to reach because they are surrounded by concrete walls, such as underground facilities, access points can be easily added by using existing power lines.



nessum AIR

Improved communication speed while controlling communication range.

“nessum AIR” enables high-speed communication while precisely limiting the communication range by adjusting the transmitting power and antenna size and shape. It also reduces radio interference with adjacent devices and provides a high level of security.



	nessum AIR	General short-range wireless communication
Character information	✓	✓
Still image	✓	✗
Video	✓	✗