Optwin® is the latest generation radio protocol developed by Hager Security for its new range of wireless doorphone systems and designed to replace DynaPass®. This new radio technology is also the chosen platform for the new line of gate automation systems (Sweet project).

It is a single-band dual-frequency protocol. Communication between the different parts of the system is based on radio transmission using one of two 868 MHz bands.

Optwin® also uses four specific broadband frequencies in the 863 MHz band for voice exchanges using the doorphone system hence ensuring digital communication quality.

What are the Optwin® high points?

§ Better **audio quality** (greater constancy depending on the range) thanks to the broadband frequencies used by Optwin® for digital voice exchanges.

§ **Total interoperability of access management applications**: doorphone and gate automation system. When the installation is fitted with these two features, implementation could not be simpler. When the installation is fitted with a gate automation system, implementation is upgradable. All that is required is the addition of an outdoor caller unit and a doorphone handset unit. No main controller is needed for the interphone.

§ Remote control device **information feedback** indications are provided thanks to the protocol's two-way communication.

Optwin® radio technology
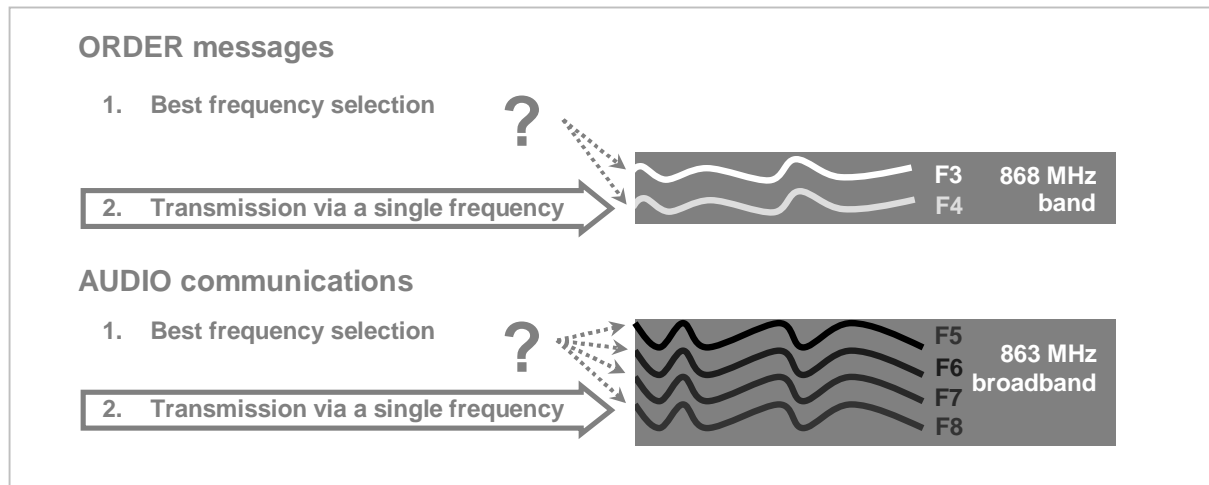
Broadband radio transmission

Optwin® has four broadband frequencies in the 863 MHz band for digital audio transmissions in doorphone applications using a doorphone controller or a motorisation control panel.

Two-way radio transmission with best-channel selection

Because radio transmission is two-way, the different devices making up the system can transmit and receive thus ensuring excellent message transmission and receipt. The products receiving orders (motorisation control panel, doorphone controller, remote control receiver, etc.) confirm receipt, hence allowing the order-transmission devices (doorphone handset unit, remote control device, etc.) to display their status.

As with DynaPass®, the protocol is based on the Listen Before Talk[1] principle allowing the transmitting device to select the best channel and use only one frequency to transmit orders. The transmitter listens to all the frequencies in order to assess their availability. If one of the frequencies is momentarily unavailable, transmission is channelled via another frequency that is available.

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[1] The Listen Before Talk function is based on the principle defined in standard EN 300220, although it does not cover all the standard requirements.

ORDER messages

1. **Best frequency selection**

2. **Transmission via a single frequency**

F3
F4 **868 MHz band**

AUDIO communications

1. **Best frequency selection**

2. **Transmission via a single frequency**

F5
F6
F7
F8 **863 MHz broadband**

Secure radio transmission

Optwin® scrambles the radio messages in order to prevent an order from being carried out if it has been copied and sent back by somebody with ill intentions. Scrambling is based on the use of a rotating code and a key exchanged between the transmitter and the receiver(s) when the radio link is established. Nonconforming messages are automatically rejected and thus have no effect on the system.

Optwin® interoperability

Optwin® is a radio protocol for both the Doorphone and Motorisation ranges. All the devices making up these systems can exchange radio messages and hence interact with each other.

Optwin® protocol compatibility

Optwin® is incompatible with:

§   TwinPass® and TwinBand® protocols used in the alarm and gate automation ranges currently listed in the catalogue.

§   Older generations of wireless doorphone systems using the DynaPass® protocol and already installed.