Allen & Heath
PL-5 Infrared protocol

The PL-5 is an infrared remote controller. The transmitted format is similar to the NEC format (38kHz carrier with pulse position modulation).

The 950nm infrared is modulated on a 38kHz carrier with a 1:2 duty cycle. 8.77µs on in a period of 26.3µs.
A Zero bit lasts 1.12ms starting with a 0.56ms burst of carrier, then silence.
A One bit lasts 2.24ms starting with a 0.56ms burst of carrier, then silence. Bytes are transmitted most significant byte first. Bits are transmitted least significant bit first; 0x4E69 comes out in the order; `0111 0010 1001 0110` → time running left to right (nibble divisions are shown for clarity).
Note that all codes transmitted have an equal number of One bits as Zero bits, maintaining constant message length of 68ms.

There is a delay of approximately 36ms delay after the button press to transmission start. The transmision comprises:

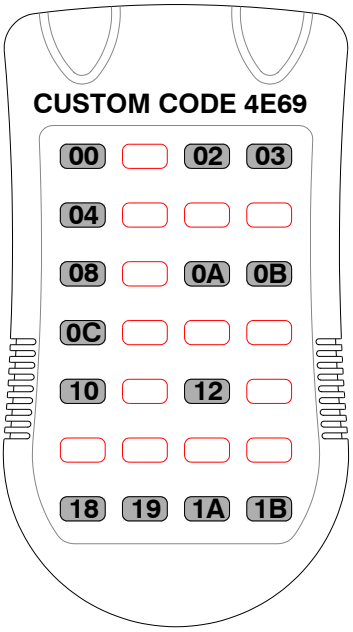
Header	9ms burst of carrier
Start	4.5ms silence
High byte address	0x4E
Low byte address	0x69
Data byte (key code)	0xhh, example 0x1A
Inverse data byte	0xHH, example 0xE5
Stop	0.56ms burst of carrier
Idle	40ms silence (+ 68ms code transmission = 108ms)

If the key is held for greater than 108ms then a repeat code is transmitted every 108ms for as long as the key is held. The repeat code comprises:

Header	9ms burst of carrier
Start	2.5ms silence
Stop	0.56ms burst of carrier
Idle	96ms silence (+ 12ms repeat code transmission = 108ms)

Note that the address bytes do not follow the NEC pattern (where high byte is the inverse of the low byte). In the case of PL-5 the address has equal numbers of One and Zero bits.

PL-5 Key codes (hexadecimal)



PL-5 key caps