

Mode 0 is a dedicated Philips Consumer Electronics mode. It allows control of up to 256 independent devices, with a total of 256 commands per device.

LS	SB	mb2 ... mb0	TR	a7 ... a0	c7 ... c0	
Header				Control	Information	Signal free

The command is a concatenation of different information. I will cover these different components from left to right.

#### **Header field**

The Header field consists of 3 different components.

- First the leader symbol LS is transmitted. Its purpose is to adjust the gain of the IR receiving unit.
- This leader symbol is followed by a start bit SB which always has the value "1". Its purpose is to calibrate the receiver's timing.
- The mode bits mb2 ... mb0 determine the mode, which is 0 in this case, thus all three bits will be "0".
- Finally the header is terminated by the trailer bit TR. Please note that the bit time of this symbol is twice as long as normal bits! This bit also serves as the traditional toggle bit, which will be inverted whenever a key is released. This allows the receiver to distinguish between a new key or a repeated key.

#### **Control Field**

This field holds 8 bits which are used as address byte. This means that a total of 256 different devices can be controlled using mode 0 of RC-6. The msb is transmitted first.

#### **Information Field**

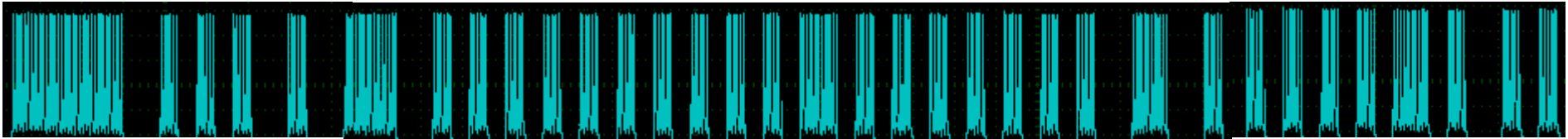
The information field holds 8 bits which are used as command byte. This means that each device can have up to 256 different commands. The msb is transmitted first.

#### **Signal Free Time**

The Signal Free time is a period in which no data may be transmitted (by any device). It is important for the receiver to detect the signal free time at the end of a message to avoid incorrect reception.

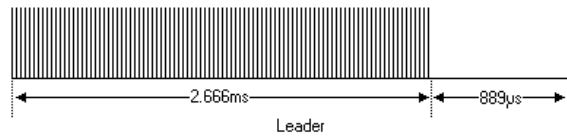
The signal free time is set to  $6t$ , which is 2.666ms.

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Header				Control	Information	Signal free

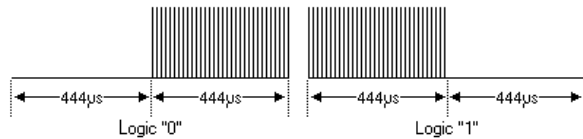


With RC-6 a total of 5 different symbols are defined:

- The leader pulse, which has a mark time of  $6t$  (2.666ms) and a space time of  $2t$  (0.889ms). This leader pulse is normally used to set the gain of the IR receiver unit.



- Normal bits, which have a mark time of  $1t$  (0.444ms) and space time of  $1t$  (0.444ms). A "0" and "1" are encoded by the position of the mark and space in the bit time.



- Trailer bits, which have a mark time of  $2t$  (0.889ms) and a space time of  $2t$  (0.889ms). Again a "0" and "1" are encoded by the position of the mark and space in the bit time.

