

FCC requirements § 2.1033 (b)(4)

**CIRCUIT DESCRIPTION.
SCHEMATIC DIAGRAM WITH PART-LIST.
PCB DRAWINGS.**

This page is followed by the HBL transmitter description, schematic diagram with part list and PCB drawings on 8 pages.



N O G A N E G E V I N N O V A T I O N L I D .

Noga-Negev Innovations

Helmet brake light system

The helmet brake light system is a new add-on product for two-wheel vehicles. It is an extra red rear brake light, mounted on the rider's helmet. It is connected, via a wireless control, to the original rear brake light mounted on the vehicle. When the rider presses the vehicle's brake pedal, both brake lights operate simultaneously. The helmet brake light is located higher than the vehicle's regular brake light, and will immediately attract the attention of other drivers. The helmet brake light system can be easily attached to the back of any helmet or put on the baggage compartment of a motorcycle.

Field tests shows that existing motorcycle brake lights do not give other drivers sufficient warning about a cyclist's intentions. Recognizing this fact, an additional car braking light has become a compulsory standard in the US, Europe and Israel.

DESCRIPTION OF TRANSMITTER CIRCUIT

The transmitter circuit is very simple and designed for low current consumption,
The main frequency of the transmitter is 433.92MHZ.

S1-S12- on \off PCB switches.

IC1-HT12-E: encoder which provides coded signals according to the condition
of switches S1 to S12.

SAW-provides front selectivity in 433.92 MHz.

Q1- NPN transistor used as colpitts oscillator topology. Q1 designated for low power.

PCB ANTENNA- The printed loop antenna used to resonate with the parallel combination
of the output capacitance of Q1 ,and the series equivalent of the
collector-emitter and emitter to ground capacitors.

D2-prevents negative voltage entering the circuit.

S13 -virtual switch that activates the circuit when the rider presses the brake.