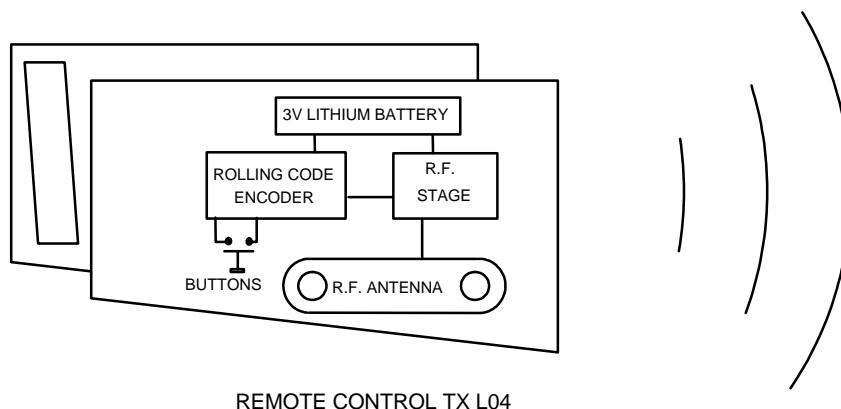


1. GENERAL OVERVIEW

- The R.F. Remote Control Transmitter **TX L04**, operating at 433.92 MHz nominal frequency, is used in combination with Med's Vehicle Alarm Systems to provide authorized access to the vehicle.
- **TX L04** is designed to be used on **Lamborghini L147** and **L148** Car Models.
- **TX L04** is fully compliant to *ETSI EN 300220-1/-3*, *ETSI EN 301489-1/-3* and *FCC 47 Part 15 sect.15.231* requirements, for EU, and US markets respectively.
- **TX L04** is powered with an internal 3V lithium coin battery. The power needed for each activation (button pressed) is kept extremely low to extend the battery life over several years. Anyway, the device is openable so that the battery can be replaced.
- **TX L04** generates a personalized ROLLING CODE, through the "KeeLoq®" algorithm¹. The number of effective secret code combinations is: 2^{24} .
- The R.F. transmitting antenna, integrated into to the device, is made as a copper trace printed circuit board.
- The R.F. oscillator is SAW stabilized.

1.1. Detailed description.



ROLLING CODE ENCODER:	Dynamic code generator
R.F. STAGE:	SAW stabilized oscillator
R.F. ANTENNA:	Printed circuit board antenna

¹ KeeLoq is a registered trademark of Microchip Technology Inc.

For each activation, when the operator releases one of the button he previously kept pressed, **TX L04** stops transmitting automatically. A 25 secs typical time-out is selectable, by programming the encoder, to prevent accidental stucks of the buttons for a long time which could drain charge from the battery.

At next activation the code generated is different, according to the Keeloq® code hopping technology. A code that has been transmitted will not occur again for more than 64K transmissions. This will provide more than 18 years of typical use before a code is repeated, based upon an average of 10 operations per day.

1.2. Operating parameters

Temperature range:	-20°C to +85°C
Degree of protection:	IP54
Voltage supply:	3V : Lithium battery 3V CR2032
Operating voltage range:	2.0* - 3.2 V
Standby current consumption:	≤ 0.1uA
Operating current consumption:	average: ≤ 3 mA
R.F. output power (ERP):	-29 dBm (78 dBuV)
Carrier frequency :	433.92 MHz (± 75khz)
Non essential radiation	< -46 dBm
Code modulation:	pulse modulation
Number of codes transmitted for each button activation:	2 ÷ 4
Code length:	66 bits [108 ms (min 70.2 mSec ,max 178.2 mSec)
Dimensions	L=79mm, H=36mm, T=18mm
Weight	50 g
Operating life	about 7 years. 3 years guaranteed without battery replacement.
Minimum guaranteed operating activations	50,000

* HCS minimum supply voltage and battery cutoff voltage