

EXHIBIT E

DESCRIPTION OF ELECTRICAL CIRCUITRY:

CONTROLLER UNIT:

A) TRANSMISSION UNIT OPERATION.

- 1) The scanning process in the matrix keyboard and the joysticks is performed to build the transmission data package to be sent to the base unit. This data package includes 64 bits: 3 bits for the ID code gotten from the dipswitches, 18 bits for each button of the controller, 32 bits for the 4 analog joysticks, 8 bits for parity and 3 free bits.
- 2) The data package is sent from the pin 2 of IC201 (CPU) to the pin 19 of IC301 (RF chip).
- 3) The data package is modulated using FSK modulation technique by the internal PLL and VCO of IC301 and then it is sent to the power amplifier included in the IC301.
- 4) Finally the RF transmission signal coming from the power amplifier output of IC301 (pin 5) is matched to the antenna (pcb antenna) through C308, L304, L311 and L312.

B) RECEIVER UNIT OPERATION.

- 1) A data signal from the base unit is received by the antenna, then it is matched to the LNA of IC301 (pin 2) through L311, L312 and C302.
- 2) Then the RX signal already amplified by the LNA is mixed with other frequency coming from the PLL of IC 301 to get a 10.7MHz I.F. signal in the mixer output terminal (pin 44).
- 3) Then the 10.7MHz signal goes through CF302 to pin 42 of IC301 where it is amplified in the pin 41, then it goes through CF301 to the demodulator input (pin 39) where the signal is completely demodulated.
- 4) Finally the RX data signal is gotten in the output of the data slicer (pin 28) of IC 301 and it is going to the RX data terminal of IC 201 (pin 31).
- 5) The RX data signal is decoded by IC201 to control both DC motors, the macro function, the operation mode and to confirm the ID code used and channel used.