Technical Description

Model:TRMS-ANT-10000

This machine is a wireless transceiver that connects to the PC 232 port. The main function is as follows:

1. Receive the data from PC via the RS232 port and send them
2. Receive the data from TRMS-400-11011,and send them to PC via the RS232 port

Receiver of 433.92MHz

The signal which be band-pass filtering by L2 and C38 and amplified by LNA which is consist of Q1,Q2,R15 and L3, will be send to IC1. IC1 include local oscillator, mixing, detection circuit, crystal X2 and internal oscillation circuit, provided the surge sampled signal with 12.24311MHz. The signal from IC1 will send to IC3(MCU) to processed ,and then, send to RS232 interface after processed by level shift circuit which be made up by IC2. U3 is a 5V regulated power --- IC, provides high frequency circuit, MCU control circuit and RS232 circuit with 5V power.

The transmitter of 433.92MHz

RS232 loads the data to IC2, IC2 processes the data by data transfer module and outputs the data with 11 or 12 pin, and then the data will send to MCU(30 , 31 pin of IC3), IC3 changes the data to high frequency signal by controlling the 29,31,3,33,35,50 pin of IC1 and outputs it. After filtering by L2, the data will send to the PA circuit which is consist of Q5 and Q6, and the PA will output the data to the impedance matching network which is consist of C39, L7, L8, C51, L13, D1 and L6, then the data will radiate from the antenna of the impedance matching network. The 12V power changed to regulator's 8V by U1(7808), and step-down by D4(a diode) then send to the emitter of the Q6. The 23 pin of IC3 controls the PA's working power by Q3 and Q4.

This system, TRMS-ANT-10000 Communication is modulated by FSK, in the information processing in two ways:
 A: Manual transmission : Each transmission time is about 99MS, consists of three identical packets together as a set of standard request time signal)
1: TRMS-ANT-10000 will automatically send a request signal when connect to the computer via RS232 serial interface
2.To receive the information the door on/off status, fuel tank Variation ,reefer operating mode changes and so on from TRMS-400-11011,then sent to PC via RS232.
3: To receive the request from PC interface,and send the request to TRMS-400-11011
B: periodic transmission: Transmit a request to TRMS-400-11011 every 6 minutes, The transmission time is around 99ms.

The part of RS232:

RS232 drives the new level shift circuit which consist of IC2 and the surrounding components to connect to the 30 pin(RX) and 31 pin(TX) of   IC3(MCU), reads and processes the data by MCU.

The circuit of MCU:

This machine includes a main MCU(IC3), the MCU is powered by U1(7550), and provided 4MHz external working clocked signal.

LED indicating circuit:

The 25 pin of IC3 drives Q7. The D5(LED) light indicates the working status.

The power control circuit:

U1, D3, C3 and C5 make up the 8v voltage stabilizing circuit. Power supply for Launch power amplifier by Launch power control circuit which is consist of Q4,Q3,R9 and R8. Power supply for RS232 to drive IC2, MCU(IC3) and high-frequency module by 5V voltage regulator circuit which is consist of U3,C57 and C56.