

## 1 . 2TXP (Transmitter)

### 1 .1 General description

The transmitter, 2TXP, is the pistol grip type, the basic function of which is designed specially for automotive application. Its operation is highly reliable and its simple structure makes maintenance service much easier.

### 1 .2 Electrical specification

#### a. Transmitting frequency

75 MHz Band

CH.61 : 75.410 MHz、CH.62 : 75.430 MHz、CH.63 : 75.450 MHz、CH.64 : 75.470 MHz、  
CH.65 : 75.490 MHz、CH.66 : 75.510 MHz、CH.67 : 75.530 MHz、CH.68 : 75.550 MHz、  
CH.69 : 75.570 MHz、CH.70 : 75.590 MHz、CH.71 : 75.610 MHz、CH.72 : 75.630 MHz、  
CH.73 : 75.650 MHz、CH.74 : 75.670 MHz、CH.75 : 75.690 MHz、CH.76 : 75.710 MHz、  
CH.77 : 75.730 MHz、CH.78 : 75.750 MHz、CH.79 : 75.770 MHz、CH.80 : 75.790 MHz、  
CH.81 : 75.810 MHz、CH.82 : 75.830 MHz、CH.83 : 75.850 MHz、CH.84 : 75.870 MHz、  
CH.85 : 75.890 MHz、CH.86 : 75.910 MHz、CH.87 : 75.930 MHz、CH.88 : 75.950 MHz、  
CH.89 : 75.970 MHz、CH.90 : 75.990 MHz

b. Modulation system      amplitude modulation (AM)

c. Transmission output    within the limited range by the law

d. Operating voltage        7.0 to 14.5 (V)

e. Rated supply voltage    12.0 (V)

f. Current dissipation      200 (mA)

g. Operating temperature   -10 to +45 (°C)

h. Storage temperature     -20 to +60 (°C)

### 1 .3 General specification

a. Channels                    2 channels (steering and throttle)

b. Frequency used            75 MHz Band

c. Battery                      8 AA Size Dry Batteries

d. Operating part             2 channels for the wheel/trigger system (steering/throttle)

e. Trimming                    Channel 1 for trimming of steering

Channel 2 for trimming of throttle

f. Reversing                    Channel 1 for reversing of steering

Channel 2 for reversing of throttle

g. Battery level indicator    A red LED indicates the remaining power of the battery.

Voltage for blinking the red LED=8.3(V)

h. Crystal                      Externally changed

i. Dimensions                 165×230×90 (mm), excluding antenna

j. Weight                        approx. 350g (approx. 440 with batteries)

k. Operating angle of the servo    40° ±5° (trimming fixed)

## 1.4 Operation

### 1.4.1 Block diagram of 2TXP

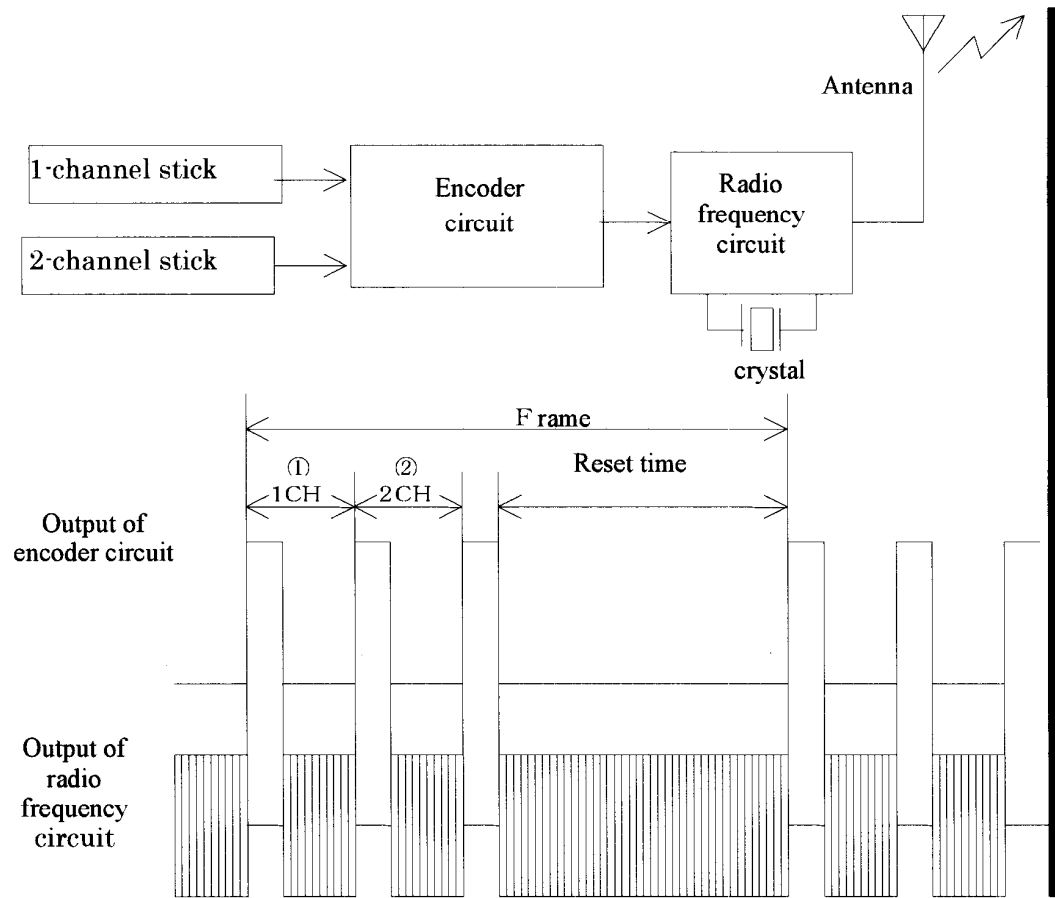


Fig. 1-1

### 1.4.2 Explanation of each block

- 1-channel wheel (steering) and 2-channel trigger (throttle)
- The operation of the wheel and trigger generates the voltage in proportion to the stick position, which is input to the encoder circuit as the respective information to the 1-channel and 2-channel.
- Encoder circuit**  
Signals of the encoder circuit are output in the form of waves as shown in Fig. 1.1, which are modulated to the proportional pulse width to each channel.
- Radio frequency circuit**  
This circuit is to create radio frequency signal and to output the signal by the antenna with modulating the incoming signal from the encoder circuit. The frequency of which is determined by the crystal.
- Dual rate circuit**  
This circuit is enable to decrease steering servo throw .If user feels oversteering, this function makes easier control than normal servo throw.

The output waveform is shown in Fig. 1.1.

## 1. 5 Handling of 2TXP and precaution for operation

- 1) Antenna  
Extend the antenna to the maximum length, otherwise, the available distance will be shorter.
- 2) Power switch  
Before operation, make sure that the battery level indicator (LED) lights in red with the power switch in the ON state.
- 3) Battery level indicator  
When the battery level indicator (LED) blinks in red, replace the batteries with new ones immediately.
- 4) Steering wheel (1-channel)  
To be used for steering operation.
- 5) Steering trim  
To be used for trimming the steering operation.
- 6) Throttle trigger (2-channel)  
To be used for throttle operation.
- 7) Throttle trim  
To be used for trimming the throttle operation
- 8) Reverse switch  
To be used for reversing the operating direction of the steering servo and throttle servo.
- 9) Neutral position (inside the transmitter)  
The neutral position of the throttle trigger can be adjusted in two steps.  
When the swing arm is mounted to the boss at the center, the operation angle is at 5:5  
On the other hand, when the swing arm is mounted to the boss on the side, the operation angle is at 7:3 (the front side becomes wider).  
  
The shipping set-up is distinguished as follows.  
  
For Electric Car : 5:5  
For Gas Car : 7:3
- 10) Battery cover  
To replace batteries, open the slide battery cover on the bottom.
- 11) Non-sensitive band  
To secure the maximum operating angle of the servo, the pulse width of each channel is set a little wider.  
Particularly with the throttle, non-sensitive band may be generated at the foremost side or the rear side depending on the trimming position. When assembling the model, adjust the linkage to make the trim close to the neutral position.
- 12) Charge jack  
Charge jack is installed.  
  
If Ni-Cd battery is used, the battery can be re-chargeable by the Charging jack.