PRODUCT SPECIFICATION AND MANUAL

2014.07

BUYER / PROJECT	SYMC / X100 / MT FLIP 01
BUYER MODEL	PCB PACKAGE ASSAY – FOLDINGKEY
PART No.	
COMPANY	Mototech Co,.
MAKER/NATION	Mototech Co,./Republic of Korea
DRAFT PART	Research Center
DRAFTER	J. H. SHIN

Title	Certification Request Document		
Project Name	**X100**	**Drawn**	**2014-05-13**
Model Name		**Released**	**2014-07-14**
		Made by	**J. H. SHIN**

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1. Contents

TYPE	Wireless controller about wireless electronic equipment of specific low output radio station
MODEL NAME	
USE	Vehicle of door keyless controller what use 433.92 MHz frequency
SUMMARY	1. This equipment use semiconductor and integrated circuit, so it designs to get high reliability. 2. This equipment use oscillation circuit of crystal, so it designs to satisfy about legally frequency an allowable error and bandwidth of exclusive frequency. 3. The transmitter has each other specific identification code. 4. The power use Li-ion coin Battery (DC 3.0V)
COMPOSITION	1. RF Transmitter part 2. Pattern Antenna

2. ELECTRONIC SPEC

List UNIT	FOLDINGKEY
Rated voltage	DC 3.0V
Voltage range	UNIT 2.1 ~ 3.6V (except Battery influence)
Operating Temperature range	−10 ~ +60℃
Storage temperature range	−20 ~ +70℃
Dark current	Lower than 1uA

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3. Specification

TYPE	PCB PACKAGE ASSAY – FOLDINGKEY
NAME	Wireless controller about wireless electronic equipment of specific low output radio station
Equipment List	RF Transmission
Frequency	433.920MHz
Antenna composition	Pattern ANTENNA
Oscillation method	Crystal oscillation
Modulation method	FSK
Communication method	One–Way Communication
Frequency multiplier	32 multiplier

4. Repair of Unit & Circuit Explanation

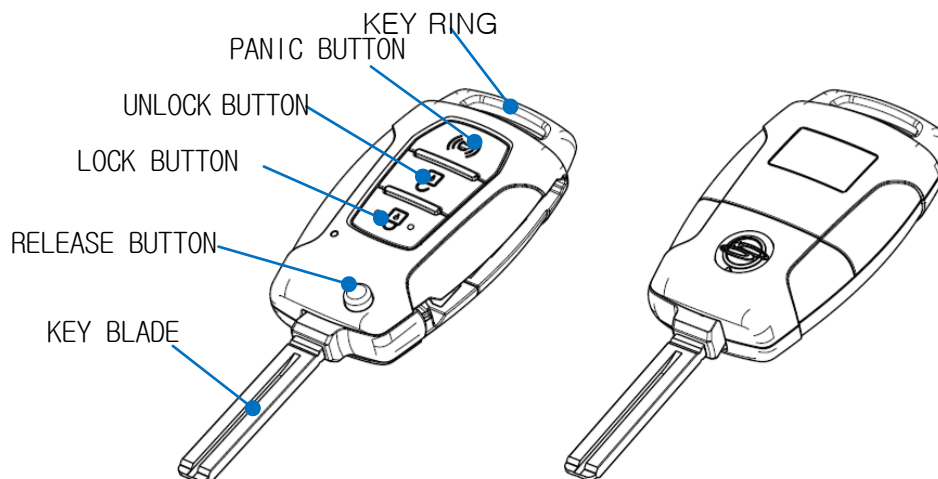4.1 Repair of Unit
   Exchange an old unit.

4.2 Circuit Explanation
   If User presses specific Switch of transmitter, MCU makes inherent serial value
   and Encryption value, so it print what CPU make data, at the same time RF IC get to
   be ENABLE.

   Printing data are falsified into TxIC and it synthesize through CRYSTAL. Compound
   frequency are amplified by TxIC and it transmit through antenna from matching circuit
   diagram of output.

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5. The Method of Unit Operating

KEY RING
PANIC BUTTON
UNLOCK BUTTON
LOCK BUTTON
RELEASE BUTTON
KEY BLADE

|	FUNCTION		SWITCH FUNCTION
PICTURE OF UNIT	LOCK BUTTON	DOOR LOCK	SHORT PRESSING LOCK BUTTON UNDER 0.5s – LED flicker only once as long time
		ESCORT (DOM ONLY)	LONG PRESSING LOCK BUTTON OVER 0.5s – LED flicker twice as short time
	UNLOCK BUTTON	DOOR UNLOCK	SHORT PRESSING UNLOCK BUTTON UNDER 0.5s – LED flicker only once as long time
	PANIC BUTTON	PANIC	LONG PRESSING PANIC BUTTON OVER 2s – LED flicker twice as short time

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6. The System of Each Unit Code Discrimination

6.1 STRUCTURE OF DATA ("1", "0")

송신 "1" | 400us | 400us |

"0" | 400us | 400us |
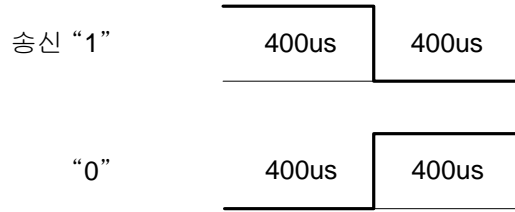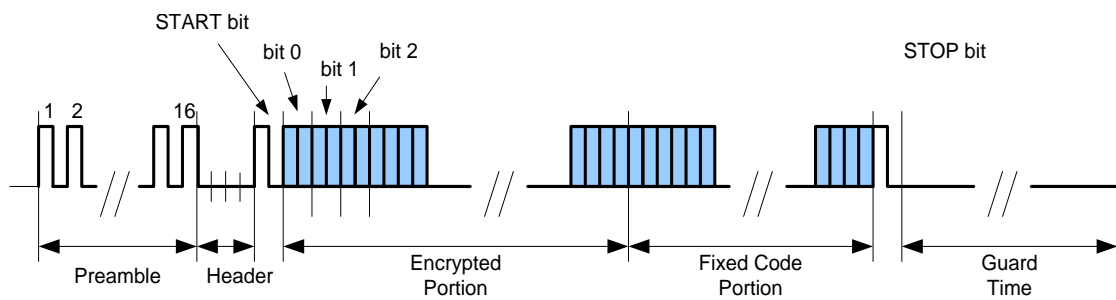
6.2 FOLDINGKEY PROTOCOL FORMAT
(1) ONE TIME TRANSMITTING DATA CONSIST OF 10 FRAMES
(2) EACH FRAME DATA THANSMISSION INTERVAL IS 6.8 ± 1ms
(3) ALL OF BIT (0 AND 1) DIFFERENTIATE THE PULSE FORM
(4) CODE WORD TRANSMISSION SEQUENCE (73.6msec)

1 CODE WORD

| Preamble | Hea-der | Encrypt | Fixed | Guard | Preamble | Hea-der | · · · · · |

| 16bit | 4TE | 32bit | 32bit | 16TE |

66.8ms   9.3ms
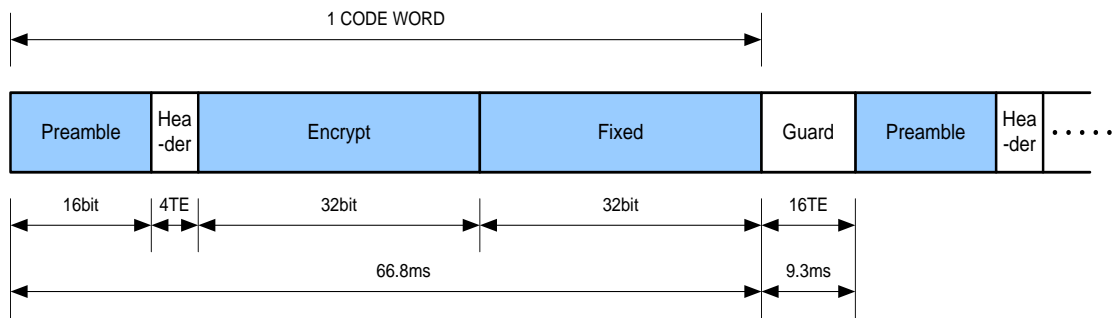
(5) TRANSMISSION FORMAT (MANCHESTER)

START bit

bit 0   bit 2
   bit 1

1 2   16   STOP bit

Preamble   Header   Encrypted Portion   Fixed Code Portion   Guard Time

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(6) CODE WORD TRANSMISSION DATA FORMAT

Encrypted Portion (32bits)				Fixed Code Portion (32 bits)		
BUT. 4bits	Not used 4bits	0x5A DISC 4bits	Synchronization Counter 16 bits 15 0	BUT. 4bits	Not used 4bits	SERIAL NUMBER 24bits

S2	S1	S0	S3

S2	S1	S0	S3
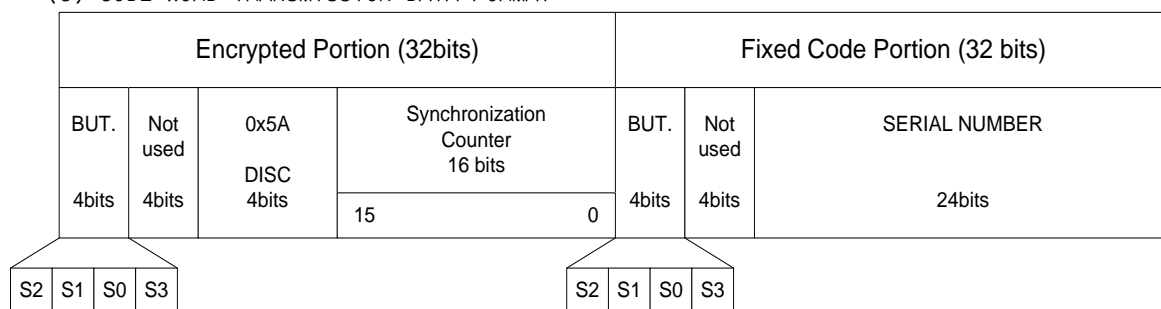
FCC (Federal Communications Commission)

WARNING: This equipment may generate or use radio frequency energy.

Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual.

The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

This device complies with Part 15 of the FCC`s Rules. Operation is subject to the following two Conditions:

1. This device may not cause harmful interference, and

2. This device must accept ant interference received, including interference that may cause undesirable operation.

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