

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 2/13
DATE: 2002/12/26

CONTENTS

1. Table of date revision
2. Description
3. Physical Description and Specification
4. RF Flex Pointer Specification
5. Electronical Block Diagram
 - FSK (433.92MHz) Transmitter
 - FSK (433.92MHz) Receiver
- 6. Electrical Characteristics**
7. Mechanical Specification
8. Endurance
9. Environmental Tests
10. Assembly Drawing
11. Packing Drawing

1. Table of date-revision

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer (433.92MHz)
△										
△									RCAS0004-402	
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.					

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 3/13

DATE: 2002/12/26

2. Description:

The RF Flex Pointer is a FSK (Frequency Shift Key) Transmitter for the frequency band 433-435 MHz. The Flex Pointer offers a full-integrated PLL synthesizer and a high efficiency power amplifier to drive a loop antenna, A special circuit design and an unique power amplifier design are used to save current consumption and to save battery life.

This RF Flex Pointer is a best companion of Microsoft Power Point designed, lets you Slide Forward, Slide Back , Blank functions , F5 and Esc as desired, when browsing the Internet or scrolling through any Windows documents gives reliable control and accuracy. Flex Pointer RF's radio frequency wireless technology solves all of your presentation input needs.

For the RF Receiver use with USB 1.1 compliant can be easily actuated without affecting the position of the Flex Pointer.



The Radio Frequency designed in this Version of RF Flex Pointer is FSK 433.92MHz and can be use in a range of up to 10 Meter from the Receiver at any directions. The Flex Pointer can operate for 6 months with CR2032 DC 3V Lithium batteries.

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 4/13

DATE: 2002/12/26

3. Physical Description and Specification:



3.1 Dimensions

The approximate dimensions of the remote's transmitter is as follows:

Length	120mm
Width	30mm
Height	15.2mm

3.2 Weight

The approximate weight of the remote's transmitter is as follows:

Weight of the RF Flex Pointer not to exceed 35 grams (with batteries).

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 5/13

DATE: 2002/12/26

4.RF Flex Pointer Specification

The RF Flex Pointer consists of three major parts; a baseband controller, a radio that suitable for 433-435 MHz frees ISM band applications, and a low power uC-controlled, includes RF antenna supporting circuitry, together with basic RF software level.

4- 1 Range in meters: 10 Meter from the Receiver

4- 2 Frequency Range: 433.92MHz+/-100KHz (64 channels ID for Flex-Pointer)

4- 3 Data transmitting by transistor module

4- 4 Operational voltage: 2.4~3.3 V

4-5 Low power consumption: On normal operation less than 6 mA

On sleep mode. Less than 10 uA.

4-6 Support Power down Mode and high efficiency power amplifier.

4-7 Receiver Fully Compliant Low Speed (1.5Mbps) USB 1.1 Interface

4-8 Suspend/resume operation and device remote wakeup

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 6/13

DATE: 2002/12/26

4.RF Flex Pointer Specification

4-9 Application



Symbo		Key definition
	Black	Display a black screen or return to the slide show from a black screen
	Slide Forward	Perform the next animation or advance to the next slide
	Slide Back	Perform the previous animation or return to the previous
	F5/ESC	F5: Running your slide show in full screen mode ESC:End a Slide show
		Laser pointer on/off

NOTE: 1.ID Change : Press Both “ ” and “ ” buttons simultaneously more than 3 seconds will change the currend ID .

2. Remote **Power On/Off** : In the remote **ON** mode , press and hold the “ ” key and press

“ ” buttons more than 3 seconds the remote will be Power Off .

In the remote **Off** mode , press and hold the “ ” key and press

“ ” buttons more than 3 seconds the remote will be Power On ..

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR
RF Flex Pointer-FSK (433.92MHz)

PAGE: 7/13

DATE: 2002/12/26

4.RF Flex Pointer Specification

4-10

Frequency Range	433.92 MHz
Modulation	FSK
Channel No.	1
Channel I.D	6 bits → 64
Operation Voltage	2.4-3.3V
Battery	CR2032 DC 3V Lithium batteries.
Batter Life	6 months
TX Power	< 0dBm (1mW)
Transmission rate	6.6 K bps
TX FM frequency deviation	60 KHz- 160 KHz
Frequency tolerance	+/- 20ppm
Button	5
Transmission Distance	10 Meter

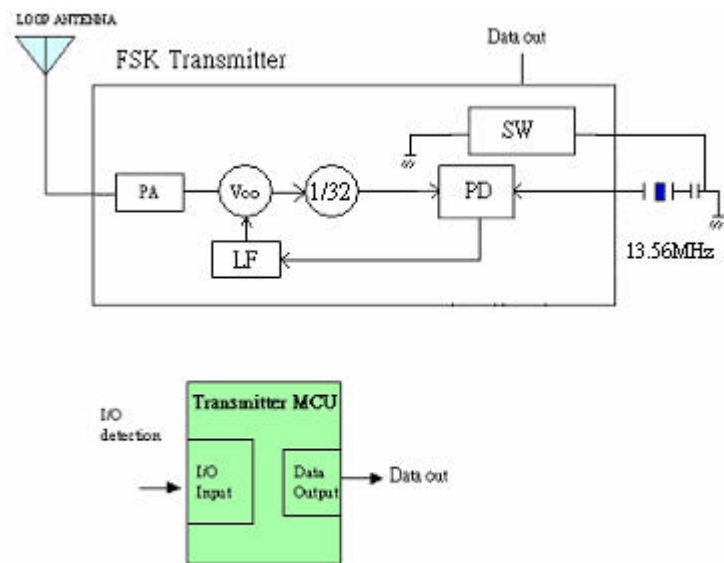
△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR
RF Flex Pointer-FSK (433.92MHz)

PAGE:8/13
DATE: 2002/12/26

5. Electrical Block Diagram

FSK (433.92MHz) Transmitter

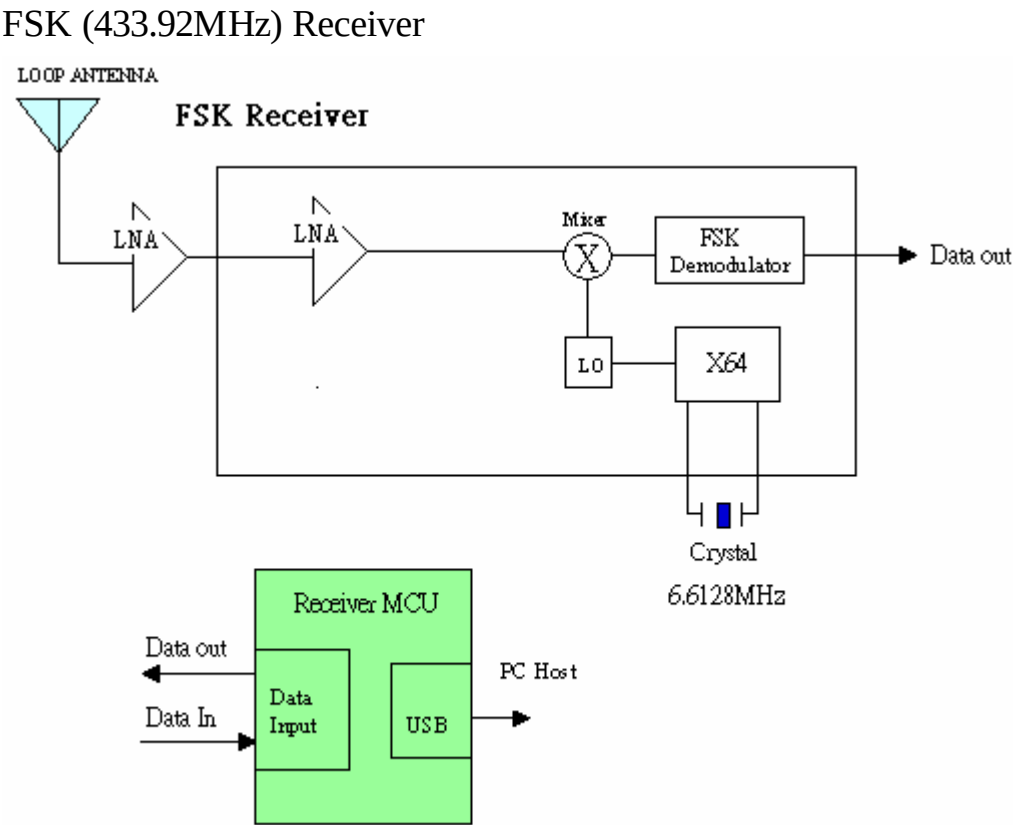


△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer RCAS0004-402 FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.					

SPECIFICATION FOR
RF Flex Pointer-FSK (433.92MHz)

PAGE: 9/13
DATE: 2002/12/26

5. Electrical Block Diagram



USB 1.1 compliant The module is a USB high-speed class device (12 Mbps) and has the full functionality of a USB slave

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer RCAS0004-402 FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.					

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 10/13

DATE: 2002/12/26

6. Electrical Characteristics:**6.1 GENERAL SPECIFICATION**

6.1.1 Operation temperature range : -10 ~ + 55 °C

6.1.2 Storage temperature range : - 25 ~ + 65 °C

6.1.3 Operation Relative humidity range : 10 %~ 85 % RH

6.1.4 Storage humidity range : 10 %~ 95 % RH

6.2 Operational Range

Parameter	Min	Max	Unit
Supply Voltage	2.4	3.3	V
Frequency	433.92MHz +/- 100KHz		MHZ

6.3 Electrostatic Discharge (ESD) Sensitivity**Direct discharge:**

Test Voltage: Not less than 8 KV for Air discharge

Not less than 4 KV for Contact discharge

Indirect discharge:

Test Voltage: Not less than 4 KV for HCP

Not less than 4 KV for VCP

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 11/13

DATE: 2002/12/26

6.4 AC/DC Characteristics

Supply Voltage: VS= 3.0 V

Parameter		Min	Typ	Max	Unit
Current Consumption	Sleep mode		10		uA
	Transmit Mode		5	7	mA
Data rate			6.6 K		bps
Sensitivity			-100		dbm
Transmitter settling time			2.2		ms
Output power (Transmit mode)		-9	-5	-2	dbm

7. Mechanical Specification

ITEM	SPECIFICATION
7.1 Push Button Operating force	Max. 150gf in any direction.
7.2 Push Button Action distance	(1) Apply vertical to the center of the push button pin Dia 4mm
7.3 Push Button strength	A static Force of 3 Kg being applied vertically to the center of the push button for 1 minute.

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.				RCAS0004-402	

SPECIFICATION FOR
RF Flex Pointer-FSK (433.92MHz)

PAGE: 12/13

DATE: 2002/12/26

8.Endurance

ITEM	SPECIFICATION
8.1 button life test	(1) Switching frequency 1~2cycles/sec (2) Switch Actuation force: 50-100 gram force (3) Minimum Actuation per Switch 500,000 actuation
8.3 Drop test	(1)Height 700 $\pm$ 20mm (2) Test surface concrete (3) Direction free (4) Test times 3 times
8.4 ESD test	(1) Air Discharge: over 8KV (2) Contact Discharge: over 4KV

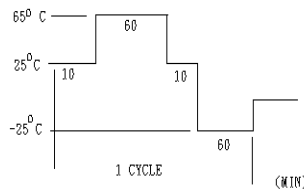
△						APPD.	CHKD.	DSGD.	PART NO. RCAS0004-402	RF Flex Pointer FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.					

SPECIFICATION FOR RF Flex Pointer-FSK (433.92MHz)

PAGE: 13/13

DATE: 2002/12/26

9. Environmental Tests

ITEM	SPECIFICATION
9.1 Heat load test	Measure initial value at standard testing conditions. Leave samples in $65 \pm 2^{\circ}\text{C}$ for 72 hours, and in standard testing conditions for 2 hours, then take measurements within 1 hour.
9.2 Humidity load test	Leave samples in $50 \pm 5^{\circ}\text{C}$ for 24 ± 2 hours, and in standard testing conditions for 2 hours, then take measurements. Leave samples in $50 \pm 5^{\circ}\text{C}$, 90~95%RH, for 72 hours, and in standard testing conditions for 2 hours, then take measurements within 1 hour.
9.3 Cold test	Measure initial value at standard testing conditions. Leave samples in $-25 \pm 2^{\circ}\text{C}$ for 72 hours, and in Standard testing conditions for 2 hours, then take Measurements within 1 hour.
9.4 Vibration test	Vibration test fixture is used to vibrate the tuner with a total amplitude 1mm and frequency ranging from 10 to 55Hz, once per minute onsecutively, for 40 minutes in each of three directions. X. Y and Z
9.5 HEAT CYCLE TEST	Measure initial value at standard testing conditions. 1. Conditions 

NOTE: When using RF products, keep away from hi-frog electric products.

△						APPD.	CHKD.	DSGD.	PART NO.	RF Flex Pointer RCAS0004-402 FSK (433.92MHz)
△										
△										
SYMB.	PAGE	DATE	APPD.	SHKD.	OSGD.					