

KB95X 84 KEY PROGRAMMING KEYBOARD  
PC/AT VS. KB95X  
PROGRAMMING COMMAND SET

DATA PROGRAMMING COMMAND STRING

STX : F1H ( START CODE )      ACK :FAH (ACKNOWLEDGE )  
ETX : F4H ( END CODE )      NACK :FEH ( RESEND )  
OTHER ASCII : NO MEANING

PACKET FORMAT :

STX CODE1 CODE2 CODE3 ETX  
TOTAL 5 BYTES.

0. PC VS . KB95X TRANSMISSION PROCEDURE

PC FIRST SEND DATA, BYTE BY BYTE SEND. WHEN FIRST RECEIVE STX, MEANS HAVE COMMAND STRING DATA WANT TO SEND, OTHERWISE KB95X SEND NACK MESSAGE TO PC, MEANS NO GETTING PROTOCOL. IF ENSURE RECEIVE CHARACTER NO ERROR TO BE FOUND. FROM KB95X SEND ACK COMMAND. KB95X TO REQUEST SENDING NEXT CHARACTER UNTIL RECEIVE ETX COMMAND. KB95X RESEND ACK COMMAND FOR MAXIMAL THREE TIMES. CHANGE OTHER WORDS, IF PC CONTINUE RECEIVED THREE TIMES NACK COMMAND, THEN GIVE UP TO SEND DATA PROGRAMMING COMMAND STRING, IT IS ON-LINE FAILURE

PC SIDE ----- KB95X SIDE

```

STEP 1          STX ----->    RECEIVE STX
STEP 2  RECEIVE ACK < -----    ACK (TO STEP 3)
      Or  RECEIVE NACK < -----  NACK (TO STEP 1)
STEP 3          CODE1 ----->   RECEIVE CODE1
STEP 4  RECEIVE ACK < -----    ACK (TO STEP 5)
      Or  RECEIVE NACK < -----  NACK (TO STEP 3)
STEP 5          CODE2 ----->   RECEIVE CODE2
STEP 6  RECEIVE ACK < -----    ACK (TO STEP 7)
      Or  RECEIVE NACK < -----  NACK (TO STEP 5)
STEP 7          CODE3 ----->   RECEIVE CODE3
STEP 8  RECEIVE ACK < -----    ACK (TO STEP 9)
      Or  RECEIVE NACK < -----  NACK (TO STEP 7)
STEP 9          ETX ----->    RECEIVE ETX
STEP 10 RECEIVE ACK < -----    ACK
      Or  RECEIVE NACK < -----  NACK (TO STEP 9)

```

PROTOCOL FINISH

# PROGRAM KEYCODE

CODE1 : KEYCODE ( 00 - EC HEX )  
CODE2 : SEQ\_NO ( 00 - 3F HEX , TOTAL 64 DECIMAL )  
CODE3 : PAGE\_NO ( 08 - 7F HEX , TOTAL 120 DECIMAL )

2/4

FORMAT:

STX KEYCODE SEQ\_NO PAGE\_NO ETX  
TOTAL 5 BYTES.

- 1-1. MAXIMUM PROGRAMMING KEY : 120 KEYS , NOW KB95X-02 USE 84 KEYS
- 1-2. EVERY KEY CAN DEFINE MAXIMUM 64 KEYCODE ( INCLUDE MAKE CODE & BREAK CODE , ABOUT UP TO 21 CHARACTERS ). UNDER 64 KEYCODE, AT THE LAST KEYCODE ADD "F7" TO END OF STRING DEFINE.
- 1-3. KEYCODE IS 00 - ECH , SEQ\_NO DETERMINE KEYCODE OFFSET ADDRESS 00 - 3F , PAGE\_NO IS SEGMENT ADDRESS KEY-DEFINITION TABLE FROM 08 TO 7F.

EXAMPLE:

1. SET 'S' TO KEY POSITION 1, STORE 1B , F0 , 1B. 3 KEYCODES THIS IS SINGLE KEY.

|        |                      |   |                       |
|--------|----------------------|---|-----------------------|
| STEP-1 | STX, 1B, 00, 08, ETX | : | SEND 'S' MAKE CODE    |
| STEP-2 | STX, F0, 01, 08, ETX | : | SEND 'S' BREAK CODE   |
| STEP-3 | STX, 1B, 02, 08, ETX | : | SEND 'S' BREAK CODE   |
| STEP-4 | STX, F7, 03, 08, ETX | : | SEND F7 END OF STRING |

2. SET CTRL+A TO KEY POSITION 84, STORE 14, 1C, F0, 1C, F0, 14, 6 KEYCODES. THIS IS COMBINATION KEY.

|        |                      |   |                       |
|--------|----------------------|---|-----------------------|
| STEP-1 | STX, 14, 00, 5B, ETX | : | SEND CTRL MAKE CODE   |
| STEP-2 | STX, 1C, 01, 5B, ETX | : | SEND 'A' MAKE CODE    |
| STEP-3 | STX, F0, 02, 5B, ETX | : | SEND 'A' BREAK CODE   |
| STEP-4 | STX, 1C, 03, 5B, ETX | : | SEND 'A' BREAK CODE   |
| STEP-5 | STX, F0, 04, 5B, ETX | : | SEND CTRL BREAK CODE  |
| STEP-6 | STX, 14, 05, 5B, ETX | : | SEND CTRL BREAK CODE  |
| STEP-7 | STX, F7, 06, 5B, ETX | : | SEND F7 END OF STRING |

NOTE: KB95X-02 VERSION, KEY POSITION RANGE 1 TO 84  
KEY POSITION 1 : PAGE\_NO = 08 HEX  
KEY POSITION 84: PAGE\_NO = 5B HEX.

PROGRAM KB95X PARAMETER

2-1 FORMAT:

STX CODE FUNCTION 00 ETX

2/4

2-1-1. SET KEYBOARD TYPE ( COUNTRY CODE )

FUNCTION : 01 KEYBOARD TYPE

CODE : 00 US U.S.A  
CODE : 01 UK ENGLAND  
CODE : 02 IT ITALY  
CODE : 03 SP SPANISH  
CODE : 10 GR GERMAN  
CODE : 11 FR FRENCH

DEFAULT : CODE = 00H FOR USA

NOTE : THIS CODE MUST BE MAPPED THE COUNTRY TABLE  
IF YOU SET CODE TO 10 (GR), AND YOU MUST LOAD  
GERMAN COUNTRY TABLE. IT'S RIGHT.

2-1-2. SET BUZZER ENABLE / DISABLE

FUNCTION : 02

CODE : 00 BUZZER ENABLE  
CODE : 01 BUZZER DISABLE  
DEFAULT : CODE = 00H

2-1-3. SET DELAY TIME BETWEEN CHARACTER AND CHARACTER

FUNCTION : 03

CODE : 00H - 3FH  
MIN. : 00 HEX  
MAX. : 3F HEX  
DEFAULT 02H

2-1-4. SET MAGNETIC STRIPE READER (MSR) SEND SS/ES CHARACTER

FUNCTION : 04

CODE : 00 MSR SENDING SS/ES.  
CODE : 01 MSR NO SENDING SS/ES.  
DEFAULT : CODE = 00H SENDING SS/ES.

NOTE : SS/ES FOLLOWED ISO-8211 FORMAT

2-1-5. SET MAGNETIC STRIPE READER (MSR) SEND CARRIGE RETURN (CR)  
ASCII:13H.

FUNCTION : 05

CODE : 00 MSR SENDING CR.  
CODE : 01 MSR NO SENDING CR.  
DEFAULT : CODE = 00H SENDING CR.

PROGRAM COUNTRY TABLE :

KB95X USE MSR INPUT OR RS-232 INPUT. IT MUST BE REFERED THE COUNTRY TABLE, THEN GETTING RIGHT KEYCODE TO SEND TO PC.

ASCII 00-7FH TOTAL 128 PAIR. FIRST BYTE : ARTRIBUTION CODE  
SECOND BYTE : SCAN CODE SO  $128 * 2 = 256$  BYTE , TOTAL 4 PAGE

4/14

3-1. FORMAT:

STX CODE SEQ\_NO PAGE\_NO ETX

3-1-1. SEQ\_NO : 00 - 3F HEX.

3-1-2. PAGE\_NO : 04 - 07 HEX.

3-1-3. SEQ\_NO IS EVEN

3-1-3-1. CODE : ARTRIBUTION CODE

01 : GERNAL .

02 : UPCASE CHARACTER A-Z.

03 : ADD ALT KEY.

04 : LOWCASE CHARACTER a-z.

12 : ADD SHIFT KEY.

3-1-3-2. CODE : SCAN CODE

EXAMPLE:

1. CODE GERERATE METHOD:

ASCII 41H "A" SCAN CODE IS 1CH, AND A IS UPCASE WHICH ARTRI-  
BUTION CODE IS 02H. SO CODE IS 02, 1CH

2. COUNTRY TABLE ADDRESS GENERATE METHOD:

ASCII 00 ARTRIBUTION CODE : SEQ\_NO = 00 , PAGE\_NO = 04

SCAN CODE : SEQ\_NO = 01 , PAGE\_NO = 04

OTHER CODE FOLLOWED IT.

4. SEND DATA TO RS-232 PORT OF KB95X

4-1. FORMAT:

STX CODE 00 80H ETX

CODE : 00 - 7F FULL ASCII CODE

4-2. EXAMPLE:

STX 41 00 80 ETX

SEND DATA TO RS-232 PORT OF KB95X2 , DATA IS 41H.