



MU 2860

DATA SHEET

(Learning &
CODE TABLE with Message)

Macro Technology Ltd.

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⇒ Description

MU2860 is an universal remote control transmitter with CMOS Technology which is designed for general purpose of infrared application. The device consists an 8-bit MCU with MACRO-SURC core & LCD driver. It can support up to maximum 72 function keys and 140 different type of system waveforms. It provides a cost effective **URC solution for 9 systems in a single chip.**

⇒ Features

- CMOS Technology With Low Power Consumption
- [LCD Display](#)
- Build in MACRO-SURC core
- Support up to maximum 72 function keys
- Support up to 140 different system waveforms
- [TWO stand-alone Device Key for controlling 6/10 Devices](#)
- Store up to 10 devices
- Cover more than 7000 different Codes for TV, TELETEXT, VCR, CABLE TV, Satellite TV, Receiver Amplifier, DVD Player, etc.
- Quick Power Search for the IR system code list.
- [Auto Search function](#)
- Manual code select
- [Learning Function](#)
- [Calendar & Time function](#)

⇒ Application

Universal Remote Controller is for TV, TeleText, VCR, Cable TV, Satellite TV, Receiver Amplifier, DVD Player in Global Market.



Operation Manual

1 . CALENDAR AND TIME SETTING

1. Press [**DEVICE**] (DEV1 OR DEV 2) Key to select the Calendar Mode. LCD will show “TIME”. Or press [**TIME**] Key to select directly.
2. Press [**SET**] Key, “SETUP” will show on the LCD and flashing for 1 second.
3. “2005” will show on the LCD and flashing. You can press [UP] to increase the number of year, or [DOWN] to decrease.
4. Press [SET] key to save the data and then setup the next data, Month. The character of Month will be flashing. Press [UP] or [DOWN] to adjust the data.
5. Setup Day, Hour, Minute are same as step 4. After pressing the [SET] key to store the data of Minute, it will exit this Setting Mode.

2 . CODE TABLE SEARCH SETTING

Procedure A: (Quick Search)

1. Power on or put the tape in the Device which you want to set up. (e.g. TV)
2. Press the **DEVICE (DEV1 or DEV2)** key to select the devices you want to control. If you have individual Device Key, such as TV1,TV2,VCR1, etc, you can select it directly.
3. Press the [**SET**] Key, LCD will show “SETUP” once and “BRAND ?” will show on the LCD and flashing for 1 second. Then it will show “ALL” on the LCD or the last brand name which you set at the last time.
4. LCD will show “◀”, “▶”, “▲” and “▼”. You should press “>” or “<” key to select brand name first. Then you can press the “^” or “v” to select the related code.
5. Press “^” or “v” key for code searching, the code number will show on the LCD and it will send “Data” automatically.
6. If your equipment can turn “On/Off” or “Play”, you can press any function key (except [SET], “<”, “>”, “^” and “v”) to test other function, such as CH+, CH-, VOL+, VOL-, etc.
7. If the code can't control the most function, you can repeat step 5.
8. After searching the corrected **CODE**, press [**SET**] Key to save and exit the setting Mode.
9. If you can't select your brand name or corrected code, you can follow Procedure B.



Procedure B: (AUTO Search)

1. Setup is as same as Procedure A, step 1 to 3.
2. Select “ALL” in the brand name using “<” or “>”.
3. Using the “^”or “v” to test the corrected code number from URC library. When you press “^”or “v” once, it will send one code Data. (Power or Play)
4. If you press “^”or “v” over 2 second and release, it will send code data one by one pre 2 second automatically.
5. When you find it can control the power or play function of your equipment, you can press and key to stop searching and test other function, such as CH+, CH-, VOL+, VOL-, etc.
6. After searching the corrected **CODE**, press [SET] Key to save and exit the setting Mode.

Procedure C: (Manual Setup)

If you know the code number or Code List of your equipment, you can direct input the code number for quick setup.

1. Setup is as same as Procedure A, step 1 to 3.
2. Select “ALL” in the brand name using “<” or “>”.
3. Press the code number directly. The code number will show and flash on LCD.
4. After entering 4 digits code number, press [SET] key to save it. If the code is valid, LCD will show “OK” and exit. If the code is wrong, out of range, LCD will show “ERROR” and exit.

Note :

1. If you want to exit the Power Search Mode press **DEVICE** key any time.
2. If no key on your remote is pressed over 30 seconds, the programming process will stop automatically, and you will have to start over.
3. In the Auto Search Mode, the Brand Name can be shown cyclic; the Code cannot.
4. Search BRAND: Press “>” or “<” key over 1 second, the Brand Name will be shown automatically by forward or backward pre 1 second. If you press over 5 second, it will step by 0.2 second.



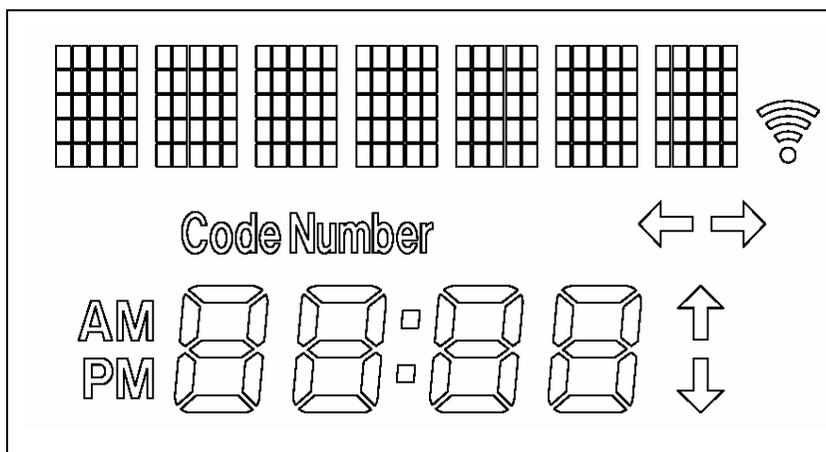
3. LEARNING SETTING

1. Press the **DEVICE (DEV1 or DEV2)** key to select the devices you want to learn. If you have individual Device Key, such as TV1, TV2, VCR1, etc, you can select it directly.
2. Press an hold the **[SET]** Key over 3 seconds, LCD will show “SETUP” once and “LEARN” will show on the LCD and flashing for 1 second.
3. Point the target device’s remote control at our learning eye. (3-5cm)
4. Press the learning function key on our remote.
5. Press the corresponding key of the target device’s remote control. If the LCD display OK, it indicates that the code was successfully learned. Or ERROR, it stands for the code was not learned.
6. Repeat step 3-5.
7. Press the **[SET]** key for exit the setting mode.
8. After learning setting, please check the learned key. If the learned key does not work properly, please re-try the learning setting

Note:

- If no key on your remote is pressed for 30 seconds, the programming process will stop.
- All key except [SET] and Device key can be learned.
- If the learned key is repeated to learn, the previous code will be replaced.
- If the learned key’s device which is re-entry the new code, the learn key will be replaced by new code.
- Before learning function, please use NEW battery for both remotes.

⇒ LCD Display





⇒ Special Function

1. Backlight LED: Press “LIGHT” Key, the back light LED will be turned on. If you press “LIGHT” key within 5 seconds, it will turn off LED. Otherwise, it will turn off automatically.

⇒ General Features

1. Power On default: 1 JAN. 2005, 12:00:00 AM
2. Screen Saver: It will display “TIME” if no key is pressed over 15 seconds.
3. Stand-alone Device Key:
 - ⇒ DEV1: “TIME” > TV1 > TV2 > VCR1 > VCR2 > SAT > CATV > DVD1 > DVD2 > RCVR > AUX (“TIME” + 10 Device keys)
 - ⇒ DEV2: “TIME” > TV(1) > VCR(1) > CATV > DVD > RCVR > AUX (“TIME” + 6 Device keys)
4. Transmitter Icon display: If it has DATA send, it will flash once.

⇒ DEVICE CODE RANGE

After resetting or battery installation, the device code range is as follows:

<u>Device (DISPLAY/ KEY)</u>	<u>Code Range</u>	<u>Remark (Initial)</u>
1. TIME		1 JAN 2005
2. TV1	1000-1204	1000 (EU)
3. TV2	2000-2126	2000 (US+CHINA)
4. VCR1	3000-3154	3036
5. VCR2	3000-3154	3000
6. SAT	4000-4168	4000
7. CATV (CBL)	5000-5078	5000
8. DVD1	6000-6163	6000
9. DVD2	6000-6163	6077
10. RCVR (DVD)	6000-6163	6020
11. AUX (DVD)	6000-6163	6021

Remark:

1. For the **Manual Setup Mode**, all brand code can be stored in any Device (E.g. TV1, VCR, DVD, etc.), except “TIME”.
2. For the **Quick Power Search Mode**, it can search their device’s code range only. (E.g. TV1, search range is from 1000 to 1204)
3. RCVR stands for Receiver Amplifier.



Version History

DATE	VERSION	DESCRIPTION	REMARK
04-2005	V1.0	ORIGINAL	
06-2005	V1.1	Modified the key 1-16 label	P.11
08-2005	V2.0	Updated function on AUG	
10-2005	V2.1	Updated code range	

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