MARANI LPP-440A User Manual

Described below are the functions of the front panel control buttons and encoders for the LPP-440A.

● **Getting Started**

As soon as the LPP-440A is turned ON the device model name will appear in the LCD screen:

```
LPP-440A
SPEAKER PROCESSOR
```

and a status bar will show the progress of the LPP-440A initialization process:

```
LPP-440A
▮▮▮▮▮▮▮▮▮▮▮▮▮
```

After the first time activation, the LPP-440A will show on the LCD :

```
LPP-440A
P01: Default
```

- ### *Encoders and ENTER, ESC buttons*

The LPP-440A is equipped with 3 Relative Encoders, "PM1", "PM2" and "PM3", These encoders allow you to navigate the user interface and edit sections of the processor. They allow the user to navigate within the screen for the selection of sub-menus, pages and parameters and to select the values to be assigned during the editing operations.

The "ENTER" and "ESC" buttons allow the user to confirm or NOT confirm the operations performed by the encoders.

- ### *UTILITY, A/B/C/D and 1/2/3/4 buttons*

The UTILITY button allows the User to enter the Sub-menus and set the general characteristics of the Processor. The A , B , C and D buttons allow the User to enter the Editing Menus of the Processor's Input Channels and buttons 1, 2, 3 , 4 allow the User to enter the Editing Menus of the Processor's Output Channels.

The A , B , C and D buttons as well as the 1, 2, 3 , 4 buttons have double functions dependent on the push and hold time.

When the A , B , C and D buttons are pushed and held for more than one second Input Channels A or B or C or D are either muted or unmuted. The red LED will illuminate when the Channel is muted.   When the "MUTE" LED is OFF, then the related Input Channel is UN-MUTED.

A momentary push of the A , B , C and D buttons enters the Editing Mode for the Input Channels (see later for the Input Channel Editing details).
The blue "EDIT" LED will now be ON.

When the 1, 2, 3 , 4 buttons are pushed and held for more than one second the Output Channels 1, 2, 3 , 4 are either muted or unmuted. The red LED will illuminate when the Channel is muted. When the "MUTE" LED is OFF, then the related Output Channel is UN-MUTED.

A momentary push of the 1, 2, 3 , 4 buttons enters the Editing Menu for the Output Channels (see later for the Output Channel Editing details).   The blue "EDIT" LED will now be ON.

- ### *LPP-440A Menu and Sub-Menu Structures*

As stated above, the start-up default screen is the following factory preset:

```
                LPP-440A
   P01: Default
```

From this point, sub-menus are accessed and exited using the UTILITY", "A/B/C/D", "1/2/3/4", "ENTER" and "ESC" buttons and all parameters and values are navigated by the "PM1", "PM2" and "PM3" encoders.   Please refer to the following menu structures:

MENU "UTILITY MENU" [Access by pushing the "UTILITY" button]

PM1 Encoder
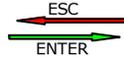[to navigate between menus]

PM2 or PM3 Encoder
[to chose option, then ENTER to load it;
(*) indicates the selected option]
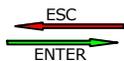
1 UTILITY MENU:......
<<   System Utilities   >>

ENTER | ESC

1.1   **SYSTEM UTILITY:**
            <<   Input Source   >>

ESC
ENTER

Input Source
Source = Analog input
Source =Digital Input
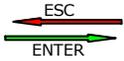**Source = Noise Gen**

1.2   **SYSTEM UTILITY:**
            << Noise Generator   >>

ESC
ENTER

Noise Generator
Type = Pink
Type = White
Lev = 0dB
:
Lev:-40Db

1.3   **SYSTEM UTILITY:**
            <<   Delay Units   >>

ESC
ENTER

Delay Units
Unit = Time(ms)
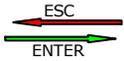**Unit = Distance (m)**

1.4   **SYSTEM UTILITY:**
      << Set Default Value   >>

ESC
ENTER

Set Default Value
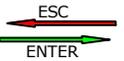**[Enter] to confirm**

1.5   **SYSTEM UTILITY:**
            <<   Firmware Version   >>

ESC
ENTER

Firmware Version
Version = 3.1.9

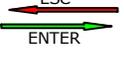**2 UTILITY MENU:......**
<<   Program Utilities   >>

ENTER | ESC

2.1   **PROGRAM UTILITY:**
            <<   Recall a Program   >>

ESC
ENTER

Recall a Program
01   Empty Program
:   :
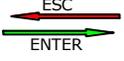**16   Empty Program**

2.2   **PROGRAM UTILITY:**
            <<   Save a Program   >>

ESC
ENTER

Save a Program
01: Empty Program
:   :
16: Empty Program

2.3   **PROGRAM UTILITY:**
            <<   Delete a Program   >>

ESC
ENTER

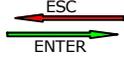**Delete a Program**
01: Empty Program
:   :
16: Empty Program

3 UTILITY MENU:......
<<   Interface Utilities >>

ENTER | ESC

3.1   **INTERFACE UTILITY:**
            Interface Setup

ESC
ENTER

Set IP address

Interface Setup
Source   = USB
Source   = RS485   ID=1,...,32
Source   = TCP/IP   DHCP=On/Off
IP=192.168.000.01-- 254

4 UTILITY MENU:......
<<   Security Utilities >>

ENTER | ESC

4.1   **SECURITY UTILITY:**
            Show Parameter

ESC
ENTER

Parameter will
be shown
not be shown

4.2   **SECURITY UTILITY:**
            Lock Unit

ESC
ENTER

Lock Unit
Lock: Off
Lock: On

4.3   **SECURITY UTILITY:**
            Change Password

ESC
ENTER

Change Password
[   ]

4.4   **SECURITY UTILITY:**
            Lock With Password

ESC
ENTER

Enter   Password
[   ]

MENU "Input A/B/C/D" Input Channels Editing [Access by pushing the "A/B/C/D" button]

PM1 Encoder
[to navigate between menus]

PM1 Enc.
[to chose values for the parameters, no need to confirm the chosen values,
which are automatically loaded during the encoders use]

PM2 Enc.

PM3 Enc.

---

1. In- A/B/C/D *[Name]* Name
                Name = *[Name]*

ENTER ↓ ↑ ESC

-> **Name = _**   *(For Editing the Device's Name, refer to the Details on the"Utility Menus Use" Section)*

---

2. In- A/B/C/D *[Name]* N.Gate
        Bypass=On

ENTER ↓ ↑ ESC

-> **Bypass=On**   PM1 N/A.   Byp=On/Off   Thr=-80.0dBu ... -50 dBu

                                                              Rel=10ms ... 1000ms   Atk=1ms ... 1000ms

---

3. In- A/B/C/D Gain
        Gain = + 0.0 dB

ENTER ↓ ↑ ESC

-> **Gain = + 0.0 dB**   PM1 N/A.   **-18 dB**   **0.1dB**
                                                              :   **:**
                                                              +12dB   **0.9dB**
                                                              Step 1dB   **Step 0.1dB**

---

4. In- A/B/C/D Delay
        Delay =   0.000 ms

ENTER ↓ ↑ ESC

-> **Delay =   0.000 ms**   PM1 N/A.   **000.0000mS**   **000.0000mS**
                                                              [1 ms steps]   **[10.4 us steps]**
                                                              480.0000mS   **000.9984mS**

---

5 In- A/B/C/D *[Name]* Phase
        Phase=Normal

ENTER ↓ ↑ ESC

-> **Phase=Normal**   PM1 N/A.   **Phase= Normal/Invert**

---

6. In- A/B/C/D *[Name]* RMS Cmp
        Bypass=On

ENTER ↓ ↑ ESC

-> **Bypass=On**   PM1 N/A.   Byp=On/Off
                                    PM1 N/A.   Threshold=+20dBu ... -10dBu
                                    PM1 N/A.   Ratio =2:1 ... 32:1   Knee=0% ... 100%
                                    PM1 N/A.   Rel=1ms ... 10.sec   Atk=0.1ms ... 5000ms
                                    PM1 N/A.   Make-up=-12dB ... +12dB

---

7. In- A/B/C/D *[Name]* EQ Byp
        Bypass=On

ENTER ↓ ↑ ESC

-> **Bypass=On**   PM1 N/A.   Byp=On/Off

---

8. In- A/B/C/D *[Name]* PEQ-XX(00 to 13)
        Byp=on   Type=Peaking_Eq

ENTER ↓ ↑ ESC

-> **Byp=on   Type=Peaking_Eq**   PM1 N/A.   Byp=On/Off   Type=Peaking_Eq/ Hi Shelv
1/ Hi Shelv 2/ Hi Shelv Q/ Lo Shelv 1/ Lo Shelv 2/Lo Shelv Q/ Low Pass 1/ Low-Pass 2/Low Pass Q/HighPass1/ HighPass2/ HighPassQ/Band-Pass/ Notch Filt/All Pass 1/All Pass 2

Type=Peaking_Eq   PM1 N/A.   Frequency=20Hz ... 20000Hz

                                    PM1 N/A.   Gain=-15dB ... +15dB   Q=0.4 ... 128

Type= Hi -Shelv 1/ Hi -Shelv 2   PM1 N/A.   Frequency=20Hz ... 20000Hz

		PM1 N/A.	Gain=-15dB … +15dB	Q=Fixed
Type= Hi -Shelv Q		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=-15dB … +15dB	Q=0.1 … 5.1
Type= Lo-Shelv 1/ Lo-Shelv 2		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=-15dB … +15dB	Q=Fixed
Type= Lo-Shelv Q		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM N/A.	Gain=-15dB … +15dB	Q=0.1 … 5.1
Type= Low Pass 1/ Low Pass 2		PM1 N/A.	Frequency=20Hz … 20000Hz	
Type= Low Pass Q		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=-Fixed	Q=0.1 … 5.1
Type= Hi ghPass1/ Hi ghPass2		PM1 N/A.	Frequency=20Hz … 20000Hz	
Type= Hi ghPass Q		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=-Fixed	Q=0.1 … 5.1
Type= Band-Pass		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=-15dB … +15dB	Q=4 … 104
Type= Notch Filt		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=Fixed	Q=4 … 104
Type= All Pass 1		PM1 N/A.	Frequency=20Hz … 20000Hz	
Type= All Pass 2		PM1 N/A.	Frequency=20Hz … 20000Hz	
		PM1 N/A.	Gain=Fixed	Q=4 … 104

MENU "Output 1/2/3/4" Output Channels Editing [Access by pushing the "1/2/3/4" button]

PM1 Encoder [to navigate between menus]	**PM1 Enc.**	**PM2 Enc.** [to chose values for the parameters, no need to confirm the chosen values, which are automatically loaded during the encoders use]	**PM3 Enc.**

1. Output[x]   *[Name]*   **Name**
                        Name = *[Name]*

ENTER ↓ ↑ ESC

   -> **Name = _**   *(For Editing the Device's Name, refer to the Details on the"Utility Menus Use" Section)*

2. Output[x]   *[Name]*   **Routing**
       A=On B=Off C=Off D=Off

ENTER ↓ ↑ ESC

	PM1 Enc.	PM2 Enc.	PM3 Enc.
-> **InA: Level=0dB On**	PM1 N/A	**0 dB** **:** **-30dB**	**On/Off**
-> **InB: Level=0dB on**	PM1 N/A	**0 dB** **:** **-30dB**	**On/Off**
-> **InC: Level=0dB On**	PM1 N/A	**0 dB** **:** **-30Db**	**On/Off**
-> **InD: Level=0dB On**	PM1 N/A	**0 dB** **:** **-30Db**	**On/Off**

3. Output[x]   *[Name]*   **Gain**
       Gain = + 0.0 dB

ENTER ↓ ↑ ESC

	PM1 Enc.	PM2 Enc.	PM3 Enc.
-> **Gain = + 0.0 dB**	PM1 N/A	**-18 dB** **:** **+12dB** **Step 1dB**	**0.1dB** **:** **0.9dB** **Step 0.1dB**

4. Output[x]   *[Name]*   **Delay**
       Delay =   0.000 ms

ENTER ↓ ↑ ESC

	PM1 Enc.	PM2 Enc.	PM3 Enc.
-> **Delay = 0.000 ms**	PM1 N/A	**000.0000mS** **[1 ms steps]** **340.0000mS**	**000.0000mS** **[10.4 us steps]** **000.9984Ms**

5. Output[x]   *[Name]* **Phase**
       Phase=Normal

ENTER ↓ ↑ ESC

	PM1 Enc.	PM2 Enc.
-> **Phase=Normal**	PM1 N/A.	**Phase= Normal/Invert**

6. Output[x] *[Name]* **RMS Cmp**
       Bypass=On

ENTER ↓ ↑ ESC

	PM1 Enc.	PM2 Enc.	PM3 Enc.
-> **Bypass=On**	PM1 N/A.	Byp=On/Off	
	PM1 N/A.	Threshold=+20dBu … -10dBu	
	PM1 N/A.	Ratio =2:1 … 32:1	Knee=0% … 100%
	PM1N/A.	Rel=1ms… 10s	Atk=0.1 … 5000ms
	PM1 N/A.	Make-up=-12dB … +12dB	

7. Output[x]   *[Name]* **Limiter**
       Bypass=On

ENTER ↓ ↑ ESC

	PM1 Enc.	PM2 Enc.
-> **Bypass=On**	PM1 N/A.	**Bypass= On/Off**
	PM1 N/A.	**Threshold=-10dBu … 20 dBu**
	PM1 N/A.	**Rel=0.04sec … 6.0sec Atk=0.1ms … 900ms**

8. Output[x]   *[Name]*   **HPF**
       20.0 Hz   Bypass

ENTER ↓ ↑ ESC

-> **20.0 Hz**   **Bypass**   PM1 N/A   *[Freq.]* **20Hz**   *[Type/Slope]*   **Bypass**
                                                                                              :   **:**
                                                                                              20kHz   **LR -48 dB /Oct**

Slope=Bypass/ BW -6 dB/Oct / BW -12 dB/Oct / LR -12 dB/Oct / BS -12 dB/Oct / BW -18 dB/Oct / BW -24 dB/Oct / LR -24 dB/Oct / BS -24 dB/Oct / BW -36 dB/Oct / LR-36 dB/Oct / BW -48 dB/Oct / LR-48 dB/Oct /

9. Output*[x]*   *[Name]*   **LPF**
    20.0 Hz   **Bypass**

ENTER ↓↑ ESC

-> **20.0 Hz**   **Bypass**   PM1 N/A   *[Freq.]* **20Hz**   *[Type/Slope]*   **Bypass**
                                                                                              :   **:**
                                                                                              20kHz   **LR -48dB/Oct**

Slope=Bypass/ BW -6 dB/Oct / BW -12 dB/Oct / LR -12 dB/Oct / BS -12 dB/Oct / BW -18 dB/Oct / BW -24 dB/Oct / LR -24 dB/Oct / BS -24 dB/Oct / BW -36 dB/Oct / LR-36 dB/Oct / BW -48 dB/Oct / LR-48 dB/Oct /

10. Output*[x]* *[Name]* **EQ Byp**
    Bypass=On

ENTER ↓↑ ESC

-> **Bypass=On**   PM1 N/A.   Byp=On/Off

11. Output*[x]*   *[Name]*   **PEQ-XX(00 to 11)**
    Byp=on   **Type=Peaking_Eq**

ENTER ↓↑ ESC

-> **Byp=on**   **Type=Peaking_Eq**   PAR1 N/A.   Byp=On/Off   Type=Peaking_Eq/ Hi -Shelv
1/ Hi -Shelv 2/ Hi -Shelv Q/ Lo-Shelv 1/ Lo-Shelv 2/Lo-Shelv Q/ Low-Pass 1/ Low-Pass 2/Low-Pass Q/High-Pass1/ High-Pass2/High-Pass Q/Band-Pass/ Notch Filt/All Pass 1/All Pass 2

|			
Type=Peaking_Eq	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-15dB … +15dB	Q=0.4 … 128
Type= Hi -Shelv 1/ Hi -Shelv 2	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-15dB … +15dB	Q=Fixed
Type= Hi -Shelv Q	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-15dB … +15dB	Q=0.1 … 5.1
Type= Lo-Shelv 1/ Lo-Shelv 2	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-15dB … +15dB	Q=Fixed
Type= Lo-Shelv Q	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-15dB … +15dB	Q=0.1 … 5.1
Type= Low-Pass 1/ Low-Pass 2	PM1 N/A.	Frequency=20Hz … 20000Hz	
Type= Low-Pass Q	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-Fixed	Q=0.1 … 5.1
Type= High-Pass1/ High-Pass2	PM1 N/A.	Frequency=20Hz … 20000Hz	
Type= High-Pass Q	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-Fixed	Q=0.1 … 5.1
Type= Band-Pass	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=-15dB … +15dB	Q=4 … 104
Type= Notch Filt	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=Fixed	Q=4 … 104
Type= All Pass 1	PM1 N/A.	Frequency=20Hz … 20000Hz	
Type= All Pass 2	PM1 N/A.	Frequency=20Hz … 20000Hz	
	PM1 N/A.	Gain=Fixed	Q=4 … 104

- **Menu "UTILITY" [access   by pushing the "UTILITY" button]**

From the "Default Screen", it is possible access the "UTILITY" menu pushing the "UTILITY" button and the Sub-Menus pages can be selected just rotating clockwise and counter-clockwise the "PM1" encoder.
Once selected the sub-menu page, using the "ENTER" button can be accessed the Sub-Menus pages, again "scrollable" using the "PM1" encoder and accessible for the parameters' editing pushing again the "ENTER' button.

Note: In each sub-menu choice, the current selected or running choice is what shown on the LCD screen.

System Utilities Sub-menu – this sub-menu allows to access several operations related to the LPP-440A Start Up and General Configuration:

```
            UTILITY MENU
  --        System Utilities       --
```
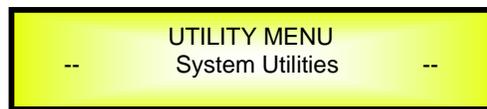
UTILITY MENU:
From the "System Utilities Sub-menu", pushing "ENTER" and then using the "PM1" encoder for scrolling will give access to the following pages:

- **Input Source:** the LPP-440A is equipped with 4 Analog Inputs (Balanced Female XLR) and 2 AES Digital Input (RCA connector).and noise generator
  The "Input Source" page allows you to select the desired Input type:

```
            SYSTEM UTILITY
  --          Input Source         --
```

  By pressing ENTER on Input Source and then rotating the "PM2" or "PM3" encoders, it is possible to select the Main Inputs for the LPP-440A, allowing the User to choose between Analog , AES Digital Input or Noise Generator.
  The selection can be confirmed by pressing the "ENTER" button.
  The following screen shows that the Analog Input has been selected:

```
            Input Source
        Source = Analog input
```
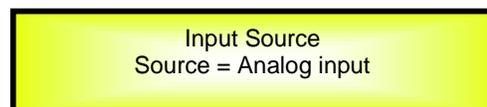
UTILITY MENU:

–

– **Noise Generator:** LPP-440A equips with 2 types of noise generator: White Noise and Pink Noise.

```
          SYSTEM UTILITY
   --      Noise Generator      --
```
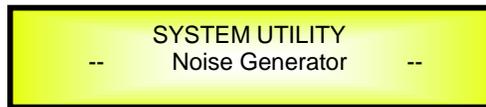
By pressing ENTER and rotating the "PM2" encoder, it is possible to select between those 2 choice: "Pink" or "White". By rotating the "PM3" encoder, it is possible to set the value of level of white noise generator and pink noise generator, with whose range from 0dB to -40dB.
The following screen shows the selected pink noise with level of -20dB:

```
          Noise Generator
   Type=Pink          Lev=-20dB
```

 Delay Units: this page allows you to select the measurement unit to be used for the Delays:
Time (in milliseconds "ms") or **Distance** (in meters "m"):

```
          SYSTEM UTILITY
   --        Delay Units        --
```
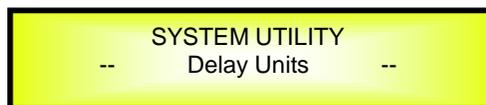
By pressing ENTER button and rotating the "PM2" or "PM3" encoder, it is possible to select the measurement unit to be used for the delay, which will be confirmed by pushing the ENTER button.
The following screen shows the selected delay measurement is Time (milliseconds)

```
             Delay Units
   Unit : = Time (ms)            *
```

Set Default Value: All setting for LPP-440A can be set to default value:

```
          SYSTEM UTILITY
   --   Set Default Value   --
```

By pressing ENTER button, will show up the following screen of an interface to confirm to set the default value:

```
          Set Default Value
          [Enter] to confirm
```
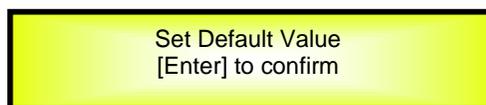
By pressing ENTER button one more time, will show up the following screen:

```
Set Default Value
Wait : loading default….
```

Wait around 3 sec for the processor set to the default value.

− **Firmware Version:** this page allows you to confirm the Firmware Version running on the LPP-440A:

```
SYSTEM UTILITY
--      Firmware Version      --
```

The correct Firmware Version is "V3.1.9"

Program Utilities Sub-menu – this sub-menu allows you to access several options related to the LPP-440A operating mode and to manage the presets stored and recallable within the Unit:

```
UTILITY MENU
--      Program Utilities      --
```

− **Recall a Program:** this page allows the Loading of a preset program by pressing the "ENTER" button. You can store up to 16 presets in the LPP-440A memory:

```
PROGRAM UTILITY
--      Recall a Program      --
```

By pressing "ENTER" button and rotating the "PM1" encoders, it is possible to scroll through all current available presets.
If NO USER PRESETS are stored yet, the screen will show the following:

```
Recall a Program
01: Default
```

If presets have previously been stored by the user, anyone of them can be recalled:

```
[ENTER] to Recall.
01:     PRESET 1
```

By using the "PM1" encoder it is possible to scroll through the stored presets. Once the

desired preset appears on the screen, select it by pressing the "ENTER" button and this will force the LPP-440A to begin to load this selected preset and the following transitory screen will appear:

```
Loading New Program ......
      01:     PRESET 1
```

Once loaded the LPP-440A will exit to the "Recall a Program" screen automatically and the above screen will disappear:

```
           PROGRAM UTILITY
    -       Recall a Program        -
```

Note: at any time it is possible to quit the recalling action by pressing the "ESC" button.

– **Save a Program:** this page allows you to store a new preset in the LPP-440A's memory:

```
PROGRAM UTILITY
--      Save a Program         --
```

By pressing the ENTER button and rotating the "PM1" encoder, it is possible to scroll through the previously saved presets or the available empty locations (identified by "Empty Program"). If no user presets are stored, the "Save a Program" screen will show empty memory locations for all 1-32 presets as shown in the example below for location 10:

```
Save a Program
10:     Empty Memory
```
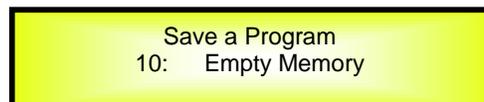
When storing an edited configuration for the LPP-440A, select the location for a preset from the **16 available** by using the "PM1" encoders.
Once the desired location appears on the screen press "ENTER" button again to reach the "**Set Program Name**" page.
In this page the User can set a Preset Name by using the "PM3" encoder to choose a character and the "PM2" encoder to move between the available locations for the character's positioning.

The following is an example of a screen while entering the preset name "Stage 1 2x2" in location 10:

```
Set Program Name.
10: Stage 1 2x2
```

To store the Preset Name press the "ENTER" button again.
The above action will take you to the "**Enter to Save**" page showing the selected location for the preset and the final edited name:

```
[Enter] to Save
10: Stage 1 2x2          ?
```

Pressing "ENTER" again, will store the preset in the selected location with the chosen name and the following transitory screen will appear on the LCD:

```
Saving to Memory.....
10: Stage 1 2x2
```

Once the preset is stored, the above screen will disappear returning to the following screen:

```
PROGRAM UTILITY
--   Save a Program    --
```

If during the Preset Storing process you want to overwrite an existing memory location select this location in the "**Save a Program**" page, then press ENTER button and you will be asked if you want to overwrite this preset with the following "**[ENTER] to Overwrite**" screen displaying the currently stored preset and location:

```
[Enter] to Overwrite
10: Stage 1 2x2
```
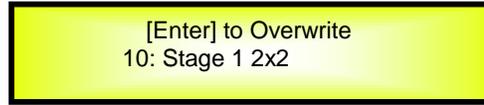
If you wish to proceed press "ENTER" again and the LPP-440A will go ahead with the "**Set Program Name**" page and the subsequent overwrite on completion of the previously described storing process..

Note: at any time it is possible to quit the storing action by pressing the "ESC" button.

– **Delete a Program:** this page allows you to delete a preset already stored in the LPP-440A memory:

```
PROGRAM UTILITY
--      Delete a Program      --
```

By pressing the ENTER button and rotating the "PM1" encoder, it is possible to scroll through the previously saved presets and the available empty locations (identified by "Program empty").
If no user presets are stored, the "Delete a Program" screen will show empty memory locations for all 1-16 presets as shown in the example below for location 10:

```
Delete a Program
10: Program empty
```

If Presets are available they will be shown in the "Delete a Program" page as follows:

```
Delete a Program
10: Stage 1 2x2
```

By using the "PM1" encoder it is possible to select a preset to be deleted.

Pressing the "ENTER" button on a selected preset will bring up the "**[Enter] to Delete.**" page showing the selected preset.

For example, if we want to delete the preset 10, "Stage 1 2x2", the screen will be the following:

```
[ENTER] to Delete.
10: Stage 1 2x2
```

Confirming the deletion by pressing "ENTER" again, will force the LPP-440A to erase the selected preset and the following transitory screen will appear:
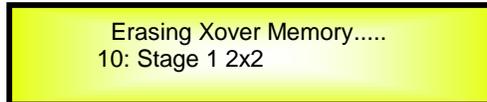
```
Erasing Xover Memory.....
10: Stage 1 2x2
```

Once the preset is deleted, the above screen will disappear returning to the following screen:

```
PROGRAM UTILITY
--      Delete a Program      --
```

Note: At any time it is possible to quit the deleting action by pressing the "ESC" button.

Interface Utilities Sub-menu – this sub-menu allows you to define the remote control interface [USB, RS485 or TCP/IP] to be used for controlling the LPP-440A:
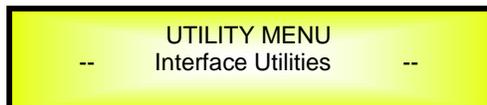
```
UTILITY MENU
--      Interface Utilities      --
```

From "Interface Utilities", press "ENTER" button to access the Interface Setup.

– **Interface Setup:** this screen allows you to choose the communication source for the LPP-440A.

```
Interface Setup
Source=USB
```

If select RS485, connect more than one unit under the RS485 mode. By using "PM3" encoder, user can set the ID number from 1 to 32, to assign to the units connected, and confirm by pressing "ENTER" button.

```
Interface Setup
Source=RS485            ID=01
```

If select TCP/IP, select the DHCP status by using "PM3" encoder, with choice of "ON" or "OFF".

The following screen displaying the currently selected interface as TCP/IP:

```
                    Interface Setup
          Source=TCP/IP          DHCP=On
```

When you select TCP/IP, but the DHCP is "OFF", by pushing "ENTER" button again to set the IP address of the unit.

```
                    Set   IP address
                 IP=192.168.000. 001
```

By rotating "PM3" encoder, user can select the IP value, and by scrolling "PM2" to move between available space, user can edit the IP value postion.

If select TCP/IP, and the DHCP is "ON", press "ENTER" button one more time, the unit will notify that the DHCP is already activated, shown as the following screen display:

```
                    Interface Setup
                 DHCP   actived   !
```

IP address of the unit need to get from the router connected to the network the unit already in.

Security Sub-menu – this sub-menu allows the User to set the parameters shown, lock the LPP-440A and set a Password therefore limiting the unit's functions and controls to those who have only access to the appropriate Password.

```
                    UTILITY MENU
          --     Security Utilities     --
```

Press "ENTER" button and then use the "PM1" encoder to scroll between options.

– **Show Parameter:** Pressing "ENTER" button from the above menu will access the "Show Parameter" Sub Menu

```
                    SECURITY UTILITY
          --      Show Parameter       --
```

Press ENTER button again and use the PM2 or PM3 encoders to select between "be shown" or "not be shown" options.
Choosing the "be shown" option means that once the unit is locked, you cannot access parameter editing features, but they will be displayed on the LCD screen.
Choosing the "not be shown" option means that once the unit is locked, the parameters will not be shown at all.   With this option, when trying to access a parameter, the following screen message will appear:

```
                    Parameter will
                    not be shown
```
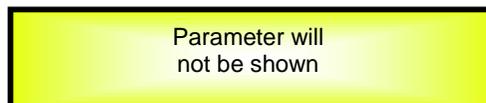
– **Lock Unit:** this sub-menu allows the user to lock the device so no parameters can be edited or modified.

```
          SECURITY UTILITY
  --        Lock Unit            --
```

When the Unit is in an unlocked condition, all parameters will be available for editing. When you select On, all parameters will be locked and are not available for editing.

```
              Lock Unit
              Lock = On
```
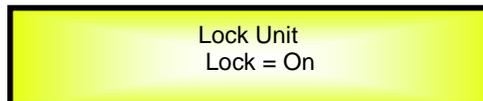
When you select lock from the menu, the unit will be locked and the lock menu automatically exited. The screen will revert to the "Default" showing the current XOVER configuration and the preset selected and beside the preset's name a "keylock" icon indicating that the LPP-440A is locked.

– **Change Password:** from the "Change Password" sub-menu:

```
          SECURITY UTILITY
  --      Change Password        --
```

Press "ENTER"   to access the "**Change Password**" page:

```
            Change Password
            [                 ]
```

Use the PM2 encoder to move between available locations, and the PM3 encoder to choose a character. The current position of the cursor for the characters to be entered is shown by a "blinking underscore".

```
            Change Password
              [_      ]
```
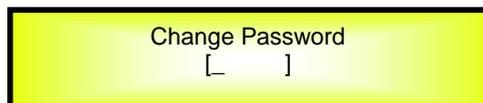
Input the original password "000000" for the LPP-440A, and press "ENTER" button, will access to the "**New Password**" Page. Use the PM2 encoder to move between available locations, and rotate the PM3 encoder to edit a 6-position new password.
The following screen is the example with the new password after edition is "111111"

```
                    New Password
                     [111111]
```

Press the ENTER button again, will access the "**Confirm password**" page, use the "PM2" encoder to move between available locations and rotate "PM3" encoder to choose a character, input the new password edited just now.
The following screen is the example with typing in new password "111111" edited just now.

```
                   Confirm Password
                     [111111]
```
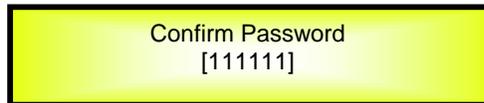
Press the ENTER button one more time, the new password will be set successfully.

– **Lock With Password:** from the "Lock With Password" sub-menu:

There's limitation to the editing function if the LPP-440A is locked with password. All functions for this unit are banned, including MUTE A/B/C/D and MUTE 1/2/3/4 buttons.

```
                   SECURITY UTILITY
              --   Lock With Password    --
```

Press "ENTER" to gain access to the "**Enter Password**" screen:

```
                   Enter Password
                 [                    ]
```
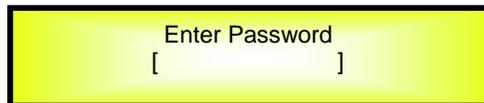
Use the "PM2" encoder to move between available locations, and rotate "PM3" encoder to select characters. If the password of this LPP-440A never modified, input the default password "000000", the unit will be locked. In this case, default screen will show a "Key" icon, user cannot enter into the sub-menu, unless he holds the password.

- **Menu "Input A/B/C/D" Input Channels Editing [access by pushing the "A/B/C/D" buttons]**

From the "Default Screen", it is possible to access the "Input A/B/C/D" menu by pushing the "A" or "B" or "C" or "D" button.   Once the button is pressed, the related blue "EDIT" LED will turn ON. The Sub-Menu pages can now be scrolled through by rotating clockwise and counter-clockwise the "PM1" encoder.

For parameter editing it is necessary to press "ENTER" button and an arrow will appear on the left of the screen "**->**".   Then use the "PM2" and "PM3" encoders for editing and setting the parameter values. On some parameters that have three independent values, you will also need to use the PM1 encoder,   eg filter parameter settings.

Note: All options can be done using the "PM1", "PM2", and "PM3" encoders and the current shown value of the selected option is AUTOMATICALLY loaded during the encoders' use and stored as the current value once leaving the page.

Remark 1: Select parameters the user desire by using 3 encoders. Once the user leaves this page, the above mentioned parameters would be saved to the LPP-440A systems automatically.
Remark 2: Exit this page by pressing "ESC" button.

Audio Signal Input (A/B/C/D)

Name page – from this screen, it is possible to assign input channel a name with 6 characters
For example, name the Input A as "In L" in the Name Page:
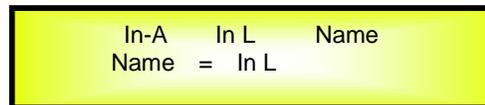
```
In-A      In L        Name
Name   =   In L
```

By pressing ENTER in the Name page, user can edit the name, and there will be an arrow, as the following screen shows:
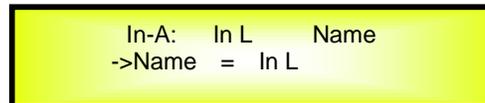
```
In-A:     In L        Name
->Name   =   In L
```

The first character will flash.
Select character from these 6 positions by rotating "PM2" encoder and choose the desired characters by rotating "PM3" encoder. Once the new name is defined, for example, "In A", confirm this new name by pressing ENTER... A new name will display on the screen, after replaced the old one.
The following screen is shown with the new name "In A", by replacing the previous one "In L"
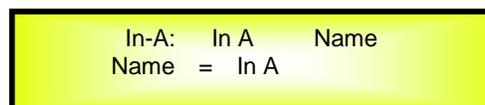
```
In-A:     In A        Name
Name   =   In A
```

N.Gate page– from this page, it is possible to set the Input Channels Noise Gate. Noise gate can be set as "ON" or "OFF" status. The following screen is the selected "ON" status:

```
    In-A      Name        N.Gate
    Bypass   =   On
```

By pressing ENTER button in this page, an arrow "->" will show up on the left of the screen, and enter into the setting interface 1 of the noise gate:

```
    In-A      In-A        N.Gate
    ->Byp=On   Thr=-80.0dBu
```

By using the "PM2" encoder, it is possible to set the noise gate as "ON" or "OFF". By using the "PM3" encoder, it is possible to select its attack threshold from -80dBu to -50dBu.

By rotating "PM1" encoder, user can enter into the setting interface 2 of the noise gate:

```
    In-A      In-A        N.Gate
    ->Rel=10ms   Atk=3ms
```

By using "PM2" encoder, user can set noise gate release time: from 10ms to 1000ms, and using "PM3" encoder to set noise gate attack time: from 1ms to 1000ms.

Gain page – from this screen it is possible to set the Input Channels Level from -18dB to +12dB, press "ENTER" button, an arrow will appear on the left of the screen "**->**"   then use the "PM2" or "PM3" to set parameters.
The value set on this screen will only affect the input level of the selected Channel A.
The following is an example screen for the "Gain" page that has set the Gain of Input Channel A to +0.0dB:

```
    In-A          In-A          Gain
    -> Gain   =   +   0.0dB
```

Delay page – from this page it is possible to set the Input Channels Delay Time from 000.0000mS up to 480.9984mS, by steps of 1mS or 10.4uS.
To set the Delay time press ENTER, an arrow will appear on the left of the screen "**->**".   then use the "PM2" encoder to set the Delay Time in steps of 1mS and the "PM3" for setting the "fine" Delay Time in steps of 10.4 microseconds.
The following is an example screen for the "Delay" page where the Delay Time of Input Channel A is set to 160.1872mS:

```
    In-A          In-A          Delay
    -> Delay   =   160.1872mS
```

Phase page – from this page, it is possible to set input channels phase as "Normal" or "Invert".
The following is an example screen of "Normal" Phase:

```
                    In-A      In-A        Phase
                    Phase  =   Normal
```

By pressing ENTER button in this page, an arrow will appear on the left of the screen "**->**".   then use the "PM2" or "PM3" encoder for setting "Normal" or "Invert" Phase.

RMS Cmp page– from this page, it is possible to set RMS Compressor for input channels. RMS Compressor can be set as "ON" or "OFF" status. The following is an example screen of "ON" status:

```
                In-A:      In-A        RMS Cmp
                    Bypass   =   On
```

By pressing ENTER in this page, an arrow will appear on the left of the screen "**->**".   Then enter into the setting interface 1 of RMS Compressor.

```
                In-A      In-A        RMS Cmp
                    ->Bypass   =   On
```

RMS compressor status can be set as "ON" or "OFF" by using "PM2" or "PM3" encoder.

By rotating "PM1" encoder, user can enter into setting interface 2 of RMS Compressor:

```
                In-A      In-A        RMS Cmp
                    ->Threshold   =   +20.0dBu
```

RMS Compressor attack threshold can be set with "PM2" or "PM3" encoder, with its range from -10dBu to +20dBu.

By rotating "PM1" encoder one more time, user can enter setting interface 3 of RMS Compressor:

```
                InputA:    Name        RMS Cmp
                    ->Ratio =32:1    Knee =0%
```

RMS Compressor ratio can be set by "PM2" encoder, with its range rom 2:1 ~ 32:1. RMS Compressor knee can be set by "PM3" encoder, with its range from 0% ~ 100%.

By rotating "PM1" encoder once again, user can enter setting interface 4 of RMS Compressor:

```
                In-A       In-A        RMS Cmp
                    ->Rel =0.1sec   Atk =0.1ms
```

RMS Compressor release time can be set by "PM2" encoder, with its selectable range from 0.1s ~ 10s, and its attack time can be set by "PM3" encoder from 0.1ms ~ 5.0ms.

By rotating "PM1" encoder, user can enter setting interface 5 of RMS Compressor:

```
In-A      In-A        RMS Cmp
    ->Make-up   =   0.0dB
```

By using "PM2" and "PM3" encoder, user can set RMS Compressor make up, from -12dBu to +12dBu.

EQ Byp page – in this page, it is possible to set EQ Bypass of input channels, with its selectable status of "ON" and "OFF". Following is the example screen as Bypass ON:

```
In-A      In-A        EQ Byp
    Bypass   =   On
```

By pressing "ENTER" button in this page, an arrow will appear on the left of the screen "**->**", then enter setting interface of EQ Bypass:

```
In-A      In-A        EQ Byp
    ->Bypass=On
```

By using "PM2" or "PM3" encoder, user can set the EQ Bypass as "ON" or "OFF".

PEQ-[xx] (01to13) page – In this page, it is possible to set 13 available parametric equalization filters for input channels, with each parametric equalization filters can be selected as BELL, Shevling, High-Pass, Low-Pass, Band-Pass, Notch filter and Allpass.

```
In-A      In-A        PEQ-01
    Byp=Off   Type=Peaking_Eq
```

When EQ Bypass is set as "OFF", by pressing ENTER in any parametric equalization page, an arrow will appear on the left of the screen "**->**", then enter setting interface 1 of parametric equalization filter:

```
In-A      In-A        PEQ-01
    ->Byp=Off   Type=Peaking_Eq
```

By using "PM2" encoder, it is possible to set the flat on or off for the current parametric equalization filter. By using "PM3" encoder, user can set the current parametric equalization filter's type, selectable as **Peaking_Eq/ Hi -Shelv 1/ Hi -Shelv 2/ Hi -Shelv Q/ Lo-Shelv 1/ Lo-Shelv 2/Lo-Shelv Q/ Low-Pass 1/ Low-Pass 2/Low-Pass Q/High-Pass1/ High-Pass2/High-Pass Q/Band-Pass/ Notch Filt/ All Pass 1/ All Pass 2**

When the parametric equalization filter is selected as Peaking Eq, by rotaing "PM1" encoder again, user can enter the setting interface 2 of current input parametric equalization filter:

```
In-A      In-A        PEQ-01
    ->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 3 of current input parametric equalization filter:

```
In-A      In-A        PEQ-01
->Gain=0.0dB          Q=0.40
```

By using "PM2" encoder, user can set the gain of current parametric equalization filter from -15dB to +15dB, and by using "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 0.4 to 128.

When the parametric equalization filter is selected as Hi-Shelv 1/ Hi-Shelv 2/ Lo-Shelv 1/ Lo-Shelv 2, by rotaing "PM1" encoder again, user can enter the setting interface 4 of current input parametric equalization filter:

```
In-A      In-A        PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 5 of current input parametric equalization filter:

```
In-A      In-A        PEQ-01
->Gain=0.0dB          Q=Fixed
```

By using "PM2" or "PM3" encoder, user can set the gain of current parametric equalization filter from -15dB to +15dB.

When the parametric equalization filter is selected as Hi-Shelv Q/ Lo-Shelv Q, by rotaing "PM1" encoder, user can enter the setting interface 6 of current input parametric equalization filter:

```
In-A      In-A        PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 7 of current input parametric equalization filter:

```
In-A      In-A        PEQ-01
->Gain=0.0dB          Q=0.1
```

By using "PM2" encoder, user can set the gain of current parametric equalization filter from -15dB to +15dB, and by using "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 0.1 to 5.1.

When the parametric equalization filter is selected as Low-Pass 1/ Low-Pass 2/ High-Pass 1/ High-Pass 2, by rotaing "PM1" encoder, user can enter the setting interface 8 of current input parametric equalization filter:

```
        In-A    In-A     PEQ-01
     ->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

When the parametric equalization filter is selected as Low-Pass Q/ High-Pass Q, by rotaing "PM1" encoder, user can enter the setting interface 9 of current input parametric equalization filter:

```
        In-A    In-A     PEQ-01
     ->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 10 of current input parametric equalization filter:

```
        In-A    In-A     PEQ-01
     ->Gain=Fixed        Q=0.1
```

By using "PM2" or "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 0.1 to 5.1.

When the parametric equalization filter is selected as Band-Pass, by rotaing "PM1" encoder, user can enter the setting interface 11 of current input parametric equalization filter:

```
        In-A    In-A     PEQ-01
     ->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 12 of current input parametric equalization filter:

```
        In-A    In-A     PEQ-01
     ->Gain=0.0dB        Q=4
```

By using "PM2" encoder, user can set the gain of current parametric equalization filter from -15dB to +15dB, and by using "PM3" encoder, it is possible to set the Q factor of current parametric

equalization filter from 4 to 104.

When the parametric equalization filter is selected as Notch Filt, by rotaing "PM1" encoder, user can enter the setting interface 13 of current input parametric equalization filter:

```
In-A      In-A      PEQ-01
->Frequency =    20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 14 of current input parametric equalization filter:

```
In-A      In-A      PEQ-01
->Gain=Fixed        Q=4
```

By using "PM2" or "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 4 to 104.

When the parametric equalization filter is selected as All Pass 1, by rotaing "PM1" encoder, user can enter the setting interface 15 of current input parametric equalization filter:

```
In-A      In-A      PEQ-01
->Frequency =    20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

When the parametric equalization filter is selected as All Pass 2, by rotaing "PM1" encoder, user can enter the setting interface 16 of current input parametric equalization filter:

```
In-A      In-A      PEQ-01
->Frequency =    20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 17 of current input parametric equalization filter:

```
In-A      In-A      PEQ-01
->Gain=Fixed        Q=4
```

By using "PM2" or "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 4 to 104.

Note 1: If selected the desired options by using 3 encoders, the option would be set as a current one for the unit automatically, and will be stored in the LPP-440A system when you exit the page.
Note 2: By pressing "ESC" button, you can exit the page any time.

- **Menu "Output 1/2/3/4" Output Channels Editing [access by pushing the "1/2/3/4" buttons]**

From the "Default Screen", it is possible to access the "Output 1/2/3/4" menu by pressing the "1" or "2" or "3" or "4" button. Once pressed, the related blue "EDIT" LED will turn ON.
The Sub-Menus pages can now be scrolled through by rotating clockwise and counter-clockwise the "PM1" encoder.
For parameter editing it is necessary to press ENTER and an arrow will appear on the left of the screen "**->**". Then use the "PM2" and "PM3" encoders for selecting and setting the parameter values. On some parameters that have three independent values, you will also need to use the PM1 encoder, for example for the filter's parameter setting.

Note: All parameter editing can be done using the "PM1", "PM2", and "PM3" encoders and the current shown value of the selected option is AUTOMATICALLY loaded during the encoders' use and stored as the current value once leaving the page.

Audio Signal Output (1/2/3/4)

Name page – from this screen, it is possible to assign output channel a name with 6 characters
For example, name the Output 1 as "Low" in the Name Page:

```
Out-1    Out 1    Name
Name   =   Low
```

By pressing ENTER in the Name page, user can edit the name, and there will be an arrow, as the following screen shows:

```
Out-1    Out 1    Name
-> Name   =   Low
```

The first character will flash.
Select character from these 6 positions by using "PM2" encoder and choose the desired characters by rotating "PM3" encoder. Once the new name is defined, for example, "Sub", confirm this new name by pressing ENTER… A new name will display on the screen, after replaced the old one.
The following screen is shown with the new name "Sub", by replacing the previous one "Low"

```
Out-1    Out 1    Name
Name   =   Sub
```

Routing page – in this page, it is possible to assign input "A/B/C/D" to any output channel:

```
Out-1        Out 1        Routing
A=0dB    B=OFF C=OFF D=OFF
```

By pressing "ENTER" button, an arrow will appear on the left of the screen "**->**". By using "PM1" encoder, user can set the input value for INPUT A/B/C/D. By using the "PM2" encoder, user can choose level of INPUT A to any output channel, from -30dB to 0dB. By using "PM3" encoder, user can choose "ON" or "OFF" the INPUT A to any output channel.

```
Out-1        Out 1        Routing
  ->InA:    Level=0dB        On
```

Gain page – from this screen it is possible to set the Output Channels Level from -18dB to +12dB, press "ENTER" button an arrow will appear on the left of the screen "**->**"   then use the "PM2" or "PM3" to set parameters.
The value set on this screen will only affect the output level of the selected Channel 1/2/3/4.
The following is an example screen for the "Gain" page that has set the Gain of Output Channel 1 to +0.0dB:

```
Out-1        Out 1          Gain
-> Gain   =   +   0.0dB
```

Delay page – from this page it is possible to set the Output Channels Delay Time from 000.0000mS up to 340.9984mS, by steps of 1mS or 10.4us.
To set the Delay time press "ENTER" button, an arrow will appear on the left of the screen "**->**". then use the "PM2" encoder to set the Delay Time in steps of 1mS and the "PM3" for setting the "fine" Delay Time in steps of 10.4 microseconds.
The following is an example screen for the "Delay" page where the Delay Time of Output Channel 1 is set to 160.1872mS:

```
Out-1        Out 1        Delay
-> Delay   =   160.1872mS
```

Phase page– from this page, it is possible to set output channels phase as "Normal" or "Invert". The following is an example screen of "Normal" Phase:

```
Out-1        Out 1        Phase
    Phase   =   Normal
```

By pressing "ENTER" button in this page, an arrow will appear on the left of the screen "**->**". then use the "PM2" or "PM3" encoder for setting "Normal" or "Invert" Phase.

RMS Cmp page – from this page it is possible to set the Output Channels RMS Compressor.
RMS Compressor can be set as "ON" or "OFF". The following is an example screen for the RMS Compressor page where it is ON:

```
Out-1        Out 1        RMS Cmp
    Bypass   =   On
```

By pressing ENTER in this page, an arrow will appear on the left of the screen "**->**", then enter into the setting interface 1 of RMS Comp:

```
Out-1       Out 1      RMS Cmp
   ->Bypass   =   On
```

By using "PM2" or "PM3" encoder, it is possible to set the RMS Comp as "ON" or "OFF".

By rotating "PM1" encoder, will enter into the setting interface 2 of RMS Comp.

```
Out-1       Out 1      RMS Cmp
   ->Threshold   =   +20.0dBu
```

By using "PM2" and "PM3" encoder, user can set limiter attack threshold, with its range from -10dBu to +20dBu.

By rotating "PM1" encoder again, it will enter setting interface 3 of RMS Comp.:

```
Out-1       Out 1      RMS Cmp
   ->Ratio =32:1   Knee =0%
```

User can set RMS Cmp's ratio by using "PM2" encoder from 2:1~32:1. With "PM3" encoder, it is possible to set RMS Cmp's knee from 0% ~ 100%.

By rotating "PM1" encoder, will enter into the setting interface 4 of RMS Comp.:

```
Out-1       Out 1      RMS Cmp
   ->Rel =1ms   Atk =0.1ms
```

User can set RMS Cmp's release time from 1ms to 10 sec by using "PM2" encoder, and set its attack time by using "PM3" from 0.1ms to 5ms.

By rotating "PM1" encoder, will enter into the setting interface 5 of RMS Comp.:

```
Out-1       Out 1      RMS Cmp
   ->Make-up   =   0.0dB
```

By using "PM2" and "PM3" encoders, user can set the RMS Cmp's make up from -12dBu to +12dBu.

Limiter page – from this page it is possible to set the Output Channels Limiter. Limiter can be set as "ON" or "OFF". The following is an example screen for the Limiter page where it is ON:

```
Out-1       Out 1        Limiter
      Bypass   =   On
```

By pressing ENTER in this page, an arrow will appear on the left of the screen "**->**", then enter into the setting interface 1 of limiter:

```
        Out-1      Out 1      Limiter
        ->Bypass   =   On
```

By using "PM2" or "PM3" encoder, it is possible to set the limiter as "ON" or "OFF".

By rotating "PM1" encoder, will enter into the setting interface 2 of limiter:

```
        Out-1      Out 1      Limiter
        ->Threshold   =   +20.0dBu
```

By using "PM2" and "PM3" encoder, user can set limiter attack threshold, with its range from -10dBu to +20dBu.

By rotating "PM1" encoder again, it will enter setting interface 3 of limiter:

```
        Out-1      Out 1      Limiter
        ->Rel =0.04sec   Atk =0.3ms
```

User can set limiter's release time from 0.04 sec to 6 sec by using "PM2" encoder, and set its attack time by using "PM3" from 0.1ms to 900ms.

HPF page – in this page, it is possible to set the High-Pass filter of output channels:

```
        Out-1      Out 1      HPF
        F=   20Hz        Bypass
```

By pressing ENTER button in this page, an arrow will appear on the left of the screen "**->**", then enter into the setting interface 1 of High-Pass filter:

```
        Out-1      Out 1      HPF
        ->Frequency   =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set output channels' High-Pass filter frequency from 20Hz to 20kHz.

By rotating "PM1" encoder, it will enter setting interface 2 of High-Pass filter:

```
        Out-1      Out 1      HPF
        ->Slope   =   Bypass
```

By using "PM2" or "PM3" encoder, it is possible to set the High-Pass filter's shape and order of the output High-Pass filter. Following is the available shape and order of the High-Pass filter: **Bypass/ BW -6 dB/Oct / BW -12 dB/Oct / LR -12 dB/Oct / BS -12 dB/Oct / BW -18 dB/Oct / BW -24 dB/Oct / LR -24 dB/Oct / BS -24 dB/Oct / BW -36 dB/Oct / LR-36 dB/Oct / BW -48 dB/Oct / LR-48 dB/Oct /**

LPF page – in this page, it is possible to set the Low-Pass filter of output channels:

```
Out-1       Out 1       LPF
  F=   20Hz        Bypass
```

By pressing ENTER in this page, an arrow will appear on the left of the screen "**->**", then enter into the setting interface 1 of Low-Pass filter:

```
Out-1       Out 1       LPF
  ->Frequency   =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set output channels' Low-Pass filter frequency from 20Hz to 20kHz.

By rotating "PM1" encoder, it will enter setting interface 2 of Low-Pass filter:

```
Out-1       Out 1       LPF
  ->Slope   =   Bypass
```

By using "PM2" or "PM3" encoder, it is possible to set the Low-Pass filter's shape and order of the output Low-Pass filter. Following is the available shape and order of the Low-Pass filter: **Bypass/ BW -6 dB/Oct / BW -12 dB/Oct / LR -12 dB/Oct / BS -12 dB/Oct / BW -18 dB/Oct / BW -24 dB/Oct / LR -24 dB/Oct / BS -24 dB/Oct / BW -36 dB/Oct / LR-36 dB/Oct / BW -48 dB/Oct / LR-48 dB/Oct /**

EQ Byp page – in this page, it is possible to set EQ Bypass of output channels, with its selectable status of "ON" and "OFF". Following is the example screen as Bypass ON:

```
Out-1       Out 1       EQ Byp
  Bypass   =   On
```

By pressing ENTER in this page, an arrow will appear on the left of the screen "**->**", then enter setting interface of EQ Bypass:

```
Out-1       Out 1       EQ Byp
  ->Bypass=On
```

By using "PM2" or "PM3" encoder, user can set the EQ Bypass as "ON" or "OFF".

PEQ-[xx] (01to07) page – In this page, it is possible to set 11 available parametric equalization filters for output channels, with each parametric equalization filters can be selected as BELL, Shevling, High-Pass, Low-Pass, Band-Pass, Notch filter and All Pass Filter.

```
Out-1       Out 1       PEQ-01
  Byp=Off   Type=Peaking_Eq
```

When EQ Bypass is set as "OFF", by pressing ENTER button in any parametric equalization page, an arrow will appear on the left of the screen "**->**", then enter setting interface 1 of parametric equalization filter:

```
Out-1       Out 1      PEQ-01
->Byp=Off   Type=Peaking_Eq
```

By using "PM2" encoder, it is possible to set the flat on or off for the current parametric equalization filter. By using "PM3" encoder, user can set the current parametric equalization filter's type, selectable as **Peaking_Eq/ Hi -Shelv 1/ Hi -Shelv 2/ Hi -Shelv Q/ Lo-Shelv 1/ Lo-Shelv 2/Lo-Shelv Q/ Low-Pass 1/ Low-Pass 2/Low-Pass Q/High-Pass1/ High-Pass2/High-Pass Q/Band-Pass/ Notch Filt/ All Pass 1/ All Pass 2**

When the parametric equalization filter type is selected as Peaking_Eq, by rotaing "PM1" encoder again, user can enter the setting interface 2 of current output parametric equalization filter:

```
Out-1       Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 3 of current input parametric equalization filter:

```
Out-1       Out 1      PEQ-01
->Gain=0.0dB        Q=0.40
```

By using "PM2" encoder, user can set the gain of current parametric equalization filter from -15dB to +15dB, and by using "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 0.4 to 128.

When the parametric equalization filter type is selected as Hi-Shelv 1/ Hi-Shelv 2/ Lo-Shelv 1/ Lo-Shelv 2, by rotaing "PM1" encoder again, user can enter the setting interface 4 of current output parametric equalization filter:

```
Out-1       Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 5 of current input parametric equalization filter:

```
Out-1       Out 1      PEQ-01
->Gain=0.0dB        Q=Fixed
```

By using "PM2" or "PM3" encoder, user can set the gain of current parametric equalization filter

from -15dB to +15dB.

When the parametric equalization filter type is selected as Hi-Shelv Q/ Lo-Shelv Q, by rotaing "PM1" encoder again, user can enter the setting interface 6 of current output parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 7 of current input parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Gain=0.0dB        Q=0.1
```

By using "PM2" encoder, user can set the gain of current parametric equalization filter from -15dB to +15dB, and by using "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 0.1 to 5.1.

When the parametric equalization filter type is selected as Low-Pass 1/ Low-Pass 2/ High-Pass 1/ High-Pass 2, by rotaing "PM1" encoder again, user can enter the setting interface 8 of current output parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

When the parametric equalization filter type is selected as Low-Pass Q/ High-Pass Q, by rotaing "PM1" encoder again, user can enter the setting interface 9 of current output parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 10 of current input parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Gain=Fixed        Q=0.1
```

By using "PM2" or "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 0.1 to 5.1.

When the parametric equalization filter type is selected as Band-Pass Q, by rotaing "PM1" encoder, user can enter the setting interface 11 of current output parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 12 of current input parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Gain=0.0dB        Q=4
```

By using "PM2", it is possible to set the gain of current parametric equalization filter from -15dB to +15dB. By using "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 4 to 104.

When the parametric equalization filter type is selected as Notch Filt, by rotaing "PM1" encoder, user can enter the setting interface 13 of current output parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current output PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 14 of current input parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Gain=Fixed        Q=4
```

By using "PM2" or "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 4 to 104.

When the parametric equalization filter is selected as All Pass 1, by rotaing "PM1" encoder, user can enter the setting interface 15 of current input parametric equalization filter:

```
Out-1      Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

When the parametric equalization filter is selected as All Pass 2, by rotaing "PM1" encoder, user can enter the setting interface 16 of current input parametric equalization filter:

```
Out-1        Out 1      PEQ-01
->Frequency =   20Hz
```

By using "PM2" or "PM3" encoder, it is possible to set current input PEQ filter's frequency from the range of 20Hz to 20kHz.

By rotaing "PM1" encoder again, user can enter the setting interface 17 of current input parametric equalization filter:

```
Out-1        Out 1      PEQ-01
->Gain=Fixed        Q=4
```

By using "PM2" or "PM3" encoder, it is possible to set the Q factor of current parametric equalization filter from 4 to 104.

Note 1: After selected the desired choice with 3 encoders, the choice would be set as the current one for the unit automatically, and would be stored in the LPP-440A system when user quits this page.
Note 2: By pressing "ESC" to quit this page.

- **Input and Output Channels Last Edited Parameter Return Function**

Once you have escaped out of parameter editing within the individual Input or Output channels the LPP-440A will remember this last editing action on that Channel. When you return for your next editing action pressing the EDIT button on that channel will immediately return you to the screen related to this last editing action.

This function makes fine tuning or modifying easier when it is necessary to make a number of adjustments to the same parameter in a short time sequence.

- **Input Channels and output Channels LINK Function**

The LPP-440A is able to perform a unique LINK MODE between Input Channels as well as a link between Output Channels to enable quick and immediate editing (you cannot link output to input channels).

To link channels when editing, you will need to select a "Master" channel that will be the one to be edited and have it's parameters displayed on the LCD screen. You can then select and link other channels (Slaves) that you wish to apply the same changes to.

To enter a link mode session, select the Master channel Edit mode, then link the Slaves by pressing their related Edit buttons.
All Linked channels will be selected ready for adjustment when their "Blue" LED is lit in the Editing mode.
Now all Slave channels and only those selected will modify their parameters accordingly as you edit the Master channel.
All other existing parameters will stay the same within the Slave Channels unless edited by this link with the Master channel.

Note: The LINK function is NOT a COPY function.

If we want to edit the limiter of the Output channels 1/3/5, we can enter the editing mode of Output Channel 1 by pressing the related Edit button and turning on the Blue LED below the Output Channel 1 LED meters. This assigns the "role" of Master and displays this channel's parameters on the LCD:

```
Output1:   Name      Limiter
->Rel =1:1sec   Atk =3ms
```

Then press the Edit button of Output Channels 1/3, turning on their related "Blue" LED's. Now all parameters edited on Output Channel 1, will also be applied to channels 3 and 5.
If we want to remove one of the linked channels from the Link, press the related Edit button.
Exiting the editing of the Master channel during a Link session will automatically terminate that session. The Link will also be automatically terminated if, during the editing of Output Channels you jump across to begin editing an Input channel or vice versa.

- **Factory Reset**

In the event of the password being lost or any other reason the user may require the unit to be reset to the original factory settings, a "Factory Reset" that will clear all settings of the LPP-440A and return the device to the original factory setting, is available to the user.

Note: Continuing with this process will mean the LPP-440A will re-initialize to the original factory settings and any previously stored information and changed parameters will be permanently lost.

- **Use the following procedure to perform the factory reset:**

    1. While the LPP-440A is switched OFF, simultaneously press the ENTER+ESC+UTILITY buttons on the front panel.
    2. Maintain pressure on all three buttons as you turn the power switch to On and the following LCD screen appears on the LPP-440A:

    Doing   Factory   Reset
    Please Wait......

    3. Release the buttons and wait for the LPP-440A to re-initialize.

Once completed, the LPP-440A will resume regular operation as though it was a new unit from the factory and no previously programmed parameters will be available for use.

Guidance of Connecting LPP-440A with Unit through TCP/IP

Connection Premier Condition:
1. LPP-440A and PC already installed the LPP-440A PC software
2. Finished product of reticle, follow standard of 568A or 568B, suggest use 568B.

Note: This unit has 3 choice to connect to the PC: USB, RS485 and TCP/IP. The default of LPP-440A is USB connection.

Connection Procedure:
1. Set the way of connecting LPP-440A and PC.
1.1 Power on LPP-440A, wait its LCD display as the following.

```
        LPP-440A
P01: Default
```
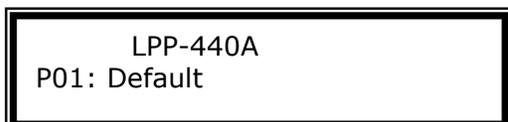
Click the "UTILITY" button, showing the first class content of the primary menue; please refer to the following picture:

```
     UTILITY MENU
-- System Utilities --
```

Rotate "NAV/PM1" encoder to change the primary menue as the following content:

```
    UTILITY MENU :
   --Interface Utilities--
```

1.2 push "ENTER" button, LCD shows as the below display, reflecting the way how unit is connected with computer

```
   Interface Setup
   Source=USB
```

Rotate "PM2" and "PM3" encoder to change the interface as to the following display:

```
    Interface Setup
 Source=TCP/IP   DHCP=Off
```

push "ENTER" button to show the current IP address of LPP-440A, as the following display:

```
    Set IP address
   IP=192.168.000.100
```
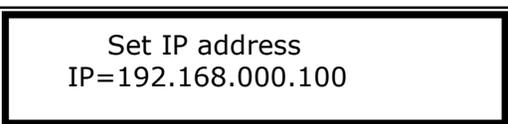
Rotate "PM2" encoder to edit the IP value. By using "PM3" encoder can change the IP address for this unit.

NOTE: Only when DHCP is off can user set the IP address of the unit. If DHCP is ON, need to push the "ENTER" button until the unit notify that the DHCP is activated, that the IP address of LPP-440A need to capture from the router in its connected network.

2. Set the connection condition of PC (take XP for example)

Enter the PC's "controlling Pannel' →"network connect" →"local", open the dialogue box of " Properties", please refer to the following picture:
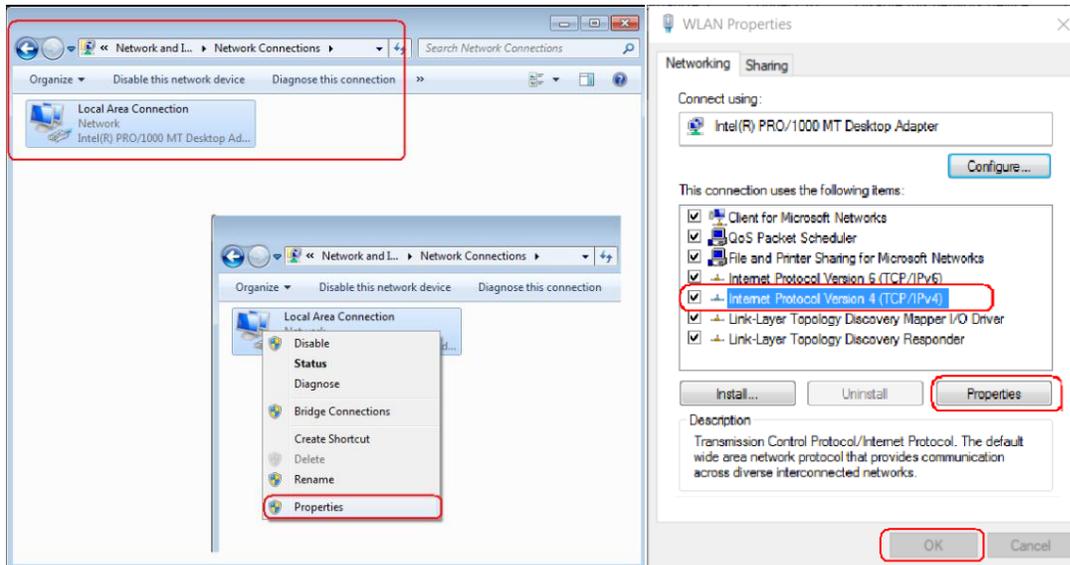
Select "Internet Protocol (TCP/IP" in "*use the following subjects under this connection(0)* ", and click the attribute bottom, marked in the red envelop in below image:
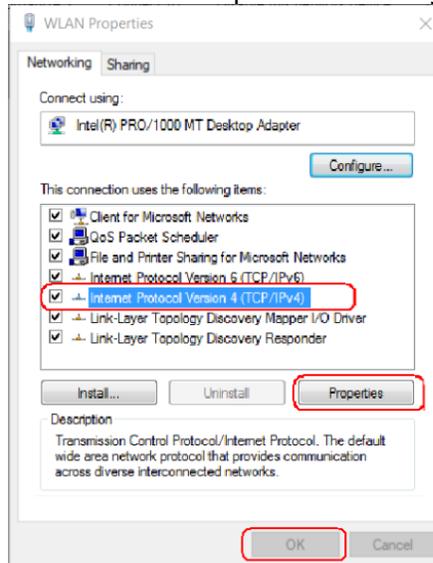
Open the dialogue box of "Internet aggreement (TCP/IP) attribute" and set as the following Fig 1,
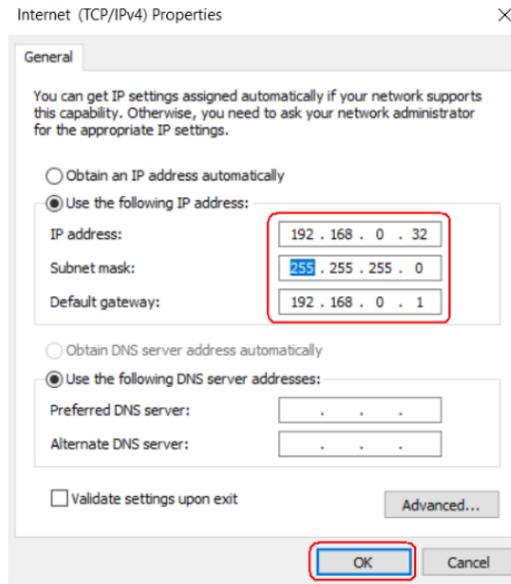
Fig 1

3. Connect LPP-440A with computer

Power on LPP-440A, use reticle to conect LPP-440A with PC. Initiate the PC software, set "communication port'' to "TCP/IP" in the dialougue box. Then set "connection "to "with one device" (if there are more than one units, set it as" with more devices".)
Later set the "IP address" display the set PC IP: "Host Address: 192.168.0.2". Set the "IP device" same as the IP address of the LPP-440A. Note that in the example, the IP address of LPP-440A is set as 192.168.0.100, so the "IP address" shall be set as 192.168.0.100, ,please refer to the following picture:

Click the [OK] in the above image, will show the following interface, which means that the LPP-440A already connected to the PC via reticle, the connection between this unit and the PC by TCP/IP completes.

- **LPP-440A Technical Specifications**

The LPP-440A is based on a powerful analog and digital DSP platform having the following specifications

Analog Input Signal:	ChA/ChB/ChC/ChD Bal. Female XLR
Maximum Input Level:	+20dBu
Analog Output Signal:	Ch1/Ch2/Ch3/Ch4 Bal. Male XLR
Maximum Output Level:	+20dBu
Sampling Frequency:	96kHz
FIR Sampling Frequency:	48kHz
S/N:	110dBA
THD+N:	0.005%
Frequency Response (Bypass):	20Hz – 20kHz (+- 1 dB)
Power Supply:	Switching Power Supply
Remote Control:	USB, RS485, TCP/IP