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INTRODUCTION

This manual is for the upgraded Portable ***Digital Audio Recording Transcription System (DARTS)*** which provides instructions for setting up and operating the system for recording court sittings including sound reinforcement system designed for court circuits in Papua New Guinea.

The upgraded system is a bit different from the previous Portable DARTS that have been in use for the past years. Notable changes are replacement of DMX mixer with MOTU M6 mixer and UPS. There are certain features of this upgraded system that are quite similar to the old system however, some devices and associated cabling in the system are new so careful study of this manual is recommended to grasp full understanding of this upgraded system.

New devices that come with the system are new, HP EliteBook Notebook, UPS [Wonderful Green Power (WPG)] and MOTU M6 Mixer. Some old devices are also used with this system upgrade like Marantz, Microphones, XLR Cables so the usual procedure to operate them remains unchanged. Both Mixer and Marantz are powered by the UPS via the split power lead whereas the Notebook is powered straight from the GPO (General Purpose Outlet) unlike the old system where all the three devices are connected to the UPS. The UPS can power up both Mixer and Marantz for over 6 hours if its battery is fully charged.

MOTU M6 Mixer interface is sensitive and comes with manual controls (knobs & buttons) which can be manually configured unlike the previous DMX mixer that is software-based. MOTU M6 has four XLR inputs that cater for four microphones which capture and send analogue signals to the mixer. The mixer then converts the signals and routes them to the Notebook, Marantz and Sound reinforcement through associated cables. Monitor (MON) buttons found on the mixer interface enable hardware routing of audio signals to desired output ports while software routing of audio signals is made possible with *Performer Lite 11* software which routes feeds to desired output ports without MON buttons active.

This upgraded Portable DARTS is very convenient, sensitive and contains robust devices that are used to capture/record quality audible audio and also amplifies the audio as well. Users are highly recommended to carefully read this manual and understand it well before using this upgraded system when taking court circuits.

SYSTEM COMPONENTS (Devices & Items)

- Refer to APPENDIX 1 to see Portable DARTS case layers on Page 9;
- Refer to APPENDIX 2 to see the list of devices and items used in the system on Page 10;
- Refer to APPENDIX 3 to see the associated cables on Page 11;

SETUP & POWER-UP SEQUENCE

i) Safety Instructions

- Ensure Mixer and Marantz are connected to the UPS before powering on.
- Avoid exposed wires and wet conditions.
- Turn on amplifier LAST and off FIRST.
- Use proper cable management to prevent tripping hazard.

ii) Setup Instruction (**connection only, without powering on devices**)

Arrange the MOTU M6 Mixer, NoteBook and Marantz Recorder from left to right to make connection easy. Refer to [Appendix 4: Devices' Connections](#) on Page 12 to see images of connections

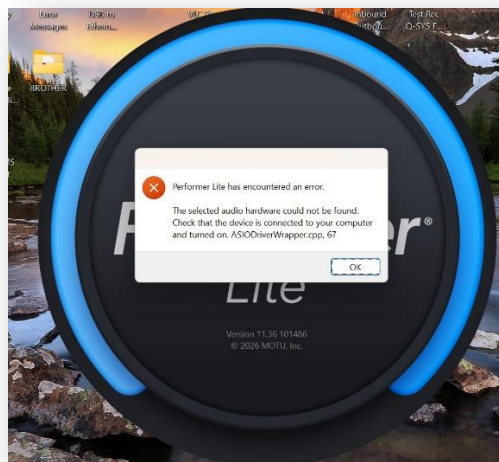


1. Connect Notebook, UPS and Amplifier to power sources GPOs (General Purpose Outlets).
2. Connect Mixer and Marantz to UPS's **OUT** port using split power cable.
3. Connect microphones to the four MOTU M6 XLR inputs via XLR cables (i.e. port **1** = Judge Mic, port **2** = Witness_Accuse_Interpreter Mics [use **splitter cable**], port **3** = Plaintiff's Counsel Mic and port **4** = Defendant's Counsel Mic).
4. Connect MOTU M6 to Notebook via USB Type-C cable.
5. Connect MOTU M6 output port **A1** to Marantz via Audio Jack 6.5 mm to XLR cable.
6. Connect MOTU M6 outputs ports **A2**, **B3** and **B4** to Amplifier ports **A**, **B** and **C** using Audio Jack 6.5 mm to RCA cables according to cable labels (**A2** to **A** [Judge Speaker], **B3** to **B** [Counsel Speaker] and **B4** to **C** [Public Speaker]).

iii) Power-Up Sequence

1. Turn on GPO to UPS and put the power switch to ON, refer to [Appendix 5 for UPS Set-Up](#) on Page 13.

2. Switch on Mixer and Marantz, note that when the Notebook detects MOTU M6 mixer, pop-up MOTU M-Series detection windows will appear, just close it, refer to [Appendix 6 for Mixer Set-Up](#) on Pages 14 - 15.
3. Switch on GPO to Notebook, power on the Notebook and login. (**Note:** When you open lid it will automatically power up the Notebook).
4. Double click preset '**BUP & PA**' shortcut on desktop (i.e. Performer Lite Preset) to open it and just minimize it **DON'T CLOSE IT**. This preset routes and gives feeds to both Marantz and Sound Reinforcement, if not open, feeds will not go through BUP and PA. If you forgot to switch on the mixer before open the '**BUP & PA**', you will get the error message below:



What to do is just switch on the mixer then click OK, the 'Configure Hardware Driver' windows will pop-up as shown below, just click OK and the preset 'BUP & PA' is activated.



5. Launch FTR Reporter, open new CRS template logsheet and get it ready as usual.
6. Turn on the amplifier at last and do adjustment to minimize feedback, refer to [*Appendix 7 for Sound Reinforcement Sep-Up*](#) on Page 16.

iv) Operating Procedure

- Go an hour early into courtroom to setup the system.
- Do test recordings to check audio feeds (gain levels) to FTR, BUP and Sound reinforcement and do adjustments accordingly.
- Monitor audio via headset to check feeds to both FTR Recorder and Marantz (is back up so must be checked)
- Monitor and recording the court sitting.
- After court adjourned for the day, edit logsheet and archive to flash drive.
- Don't leave the flash drive with the Portable DARTS, if Portable is in Courtroom then bring the flash driver with you to your lodging room after court adjourned for the day.
- Refer to [*Appendix 8 for Archiving Recordings to Removable Drive*](#) on Pages 17 - 18.

v) Power-Down Sequence

1. Turn off Amplifier
2. Close 'BUP & PA' present and FTR Reporter
3. Shutdown Notebook
4. Switch off MOTU M6
5. Power off Marantz recorder
6. Put the UPS's power switch to OFF
7. Switch off the main GPO

TROUBLESHOOTING & MAINTENANCE

Troubleshooting:

- No Audio feeds: check mixer, cables and connections.
- Distortion: reduce gain level.
- No Sound Reinforcement Output: Check amplifier power, Gain Knobs and Performer Lite Preset 'BUP & PA'.
- Software Issues: Restart device.
- When open preset 'BUP & PA' shortcut before switching on the MOTU M6 mixer error message will pop-up. Refer to Page 6 *Power-Up Sequence* Step 4 for solution, restart Notebook if necessary.

Maintenance:

- Store equipment safely.
- Check cables regularly.
- Charge UPS and Notebook batteries.
- Update software periodically

APPENDIX 1: Portable Case Layers

Case Layer	Items in each layer
 Top Layer	1. Notebook 2. Flash drive 3. Headphone
 Middle Layer	1. Microphones (5x) 2. Audio Leads 3. Audio Lead Split
 Bottom Layer	1. MOTU M6 Mixer 2. Marantz Recorder 3. UPS Battery Pack 4. Microphone stands 5. Notebook Power Lead 6. Voice box 7. USB type-C cable 8. Marantz & Mixer Power Lead 9. UPS Power Lead 10. Mixer to Marantz Audio Lead

APPENDIX 2: Devices & Items



MOTU M6 Mixer



Marantz Recorder



UPS Power Supply



HP EliteBook Notebook



Condenser Microphones



Microphone Stands



Voice Box



Amplifier



Speakers/Monitors

APPENDIX 3: Associated Cables



XLR Audio Leads



XLR Audio Splitter



USB Type C to C - Mixer to Notebook



Mixer to Marantz Audio Lead



UPS Power Adaptor



USB to Type C – Mixer to Notebook



Notebook Power Adaptor



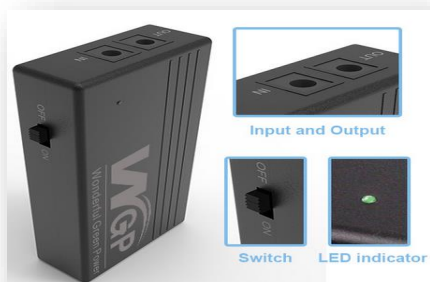
Mixer & Marantz Power Lead



Audio Jack 6.5 mm to RCA

APPENDIX 4: Devices' Connections

WGP UPS - Split power lead from **OUT** port to Mixer and Marantz



Split power lead - Mixer & Marantz



Mixer port **A1** 6.5 mm to Marantz port XLR **mono**



Mixer to Notebook using USB Type-C Cable



Mics connect to Mixer via XLR Audio Leads

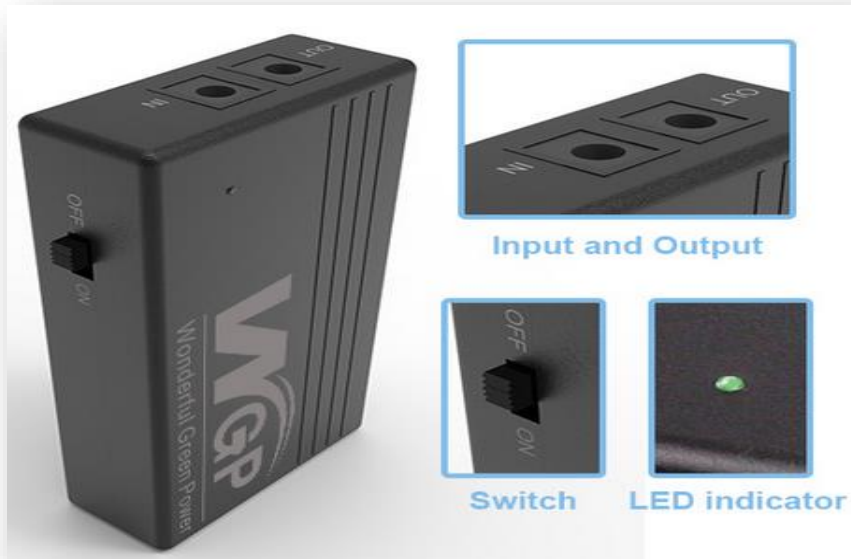


Voice box to Notebook 3.5 mm and Marantz 6.5 mm and headset to voice box 3.5 mm port



APPENDIX 5: Wonderful Green Power (WGP) UPS Set-Up

The mini WGP UPS is small and convenient with high storage capacity to store and supply power to both MOTU M6 Mixer and Marantz Recorder for more than 6 hours during blackout if fully charged. The condenser microphones are also powered by the UPS via the phantom power i.e. 48V button on MOTU M6 interface thus, the UPS plays a vital role in the system function.



1. Before you switch on the UPS make sure to connect Mixer and Marantz to the UPS using the split power cord then connect their main part of the cord to the **OUT** port on the UPS interface.
2. To switch on the UPS ensure that its power cord is plugged into GPO and the other end is plugged into the **IN** port on the UPS interface then switch on the GPO.
3. Switch the UPS to **ON** by using the power switch on the UPS interface. Note that the led indicators shown above.

APPENDIX 6: MOTU M6 Mixer Set-Up

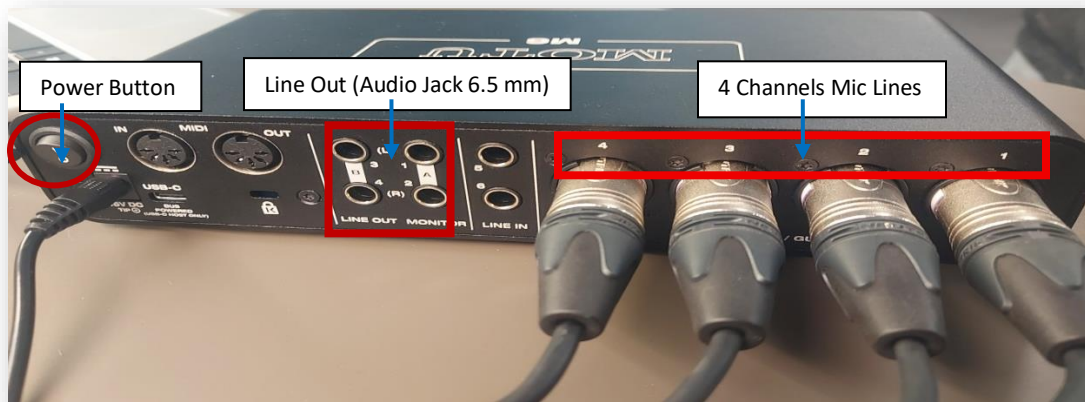
SOFTWARE AUDIO ROUTING (Option 1)

Use this routing when using the Portable DARTS with or without Sound Reinforcement and the important thing to note is the Performer Lite Preset 'BUP & PA' must always be open. In this routing all MON buttons on the MOTU M6 interface must be deactivated.

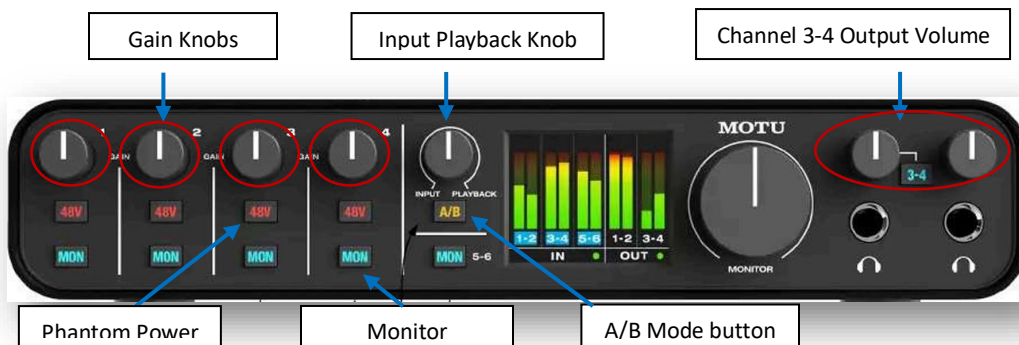
HARDWARE AUDIO ROUTING (Option 2)

Use this routing as a second option in case you face issues with software audio routing. This also helps getting a clearer view of how MOTU M6 mixer works.

1. Switch on the power button located at the back of mixer as shown in the image. Make sure all the connections are firmly connected. Further, ensure that the power switch on the UPS interface is on so that the UPS is on charge while running.
2. Microphones - Ensure that all microphones are connected to their respective XLR input ports on the mixer.

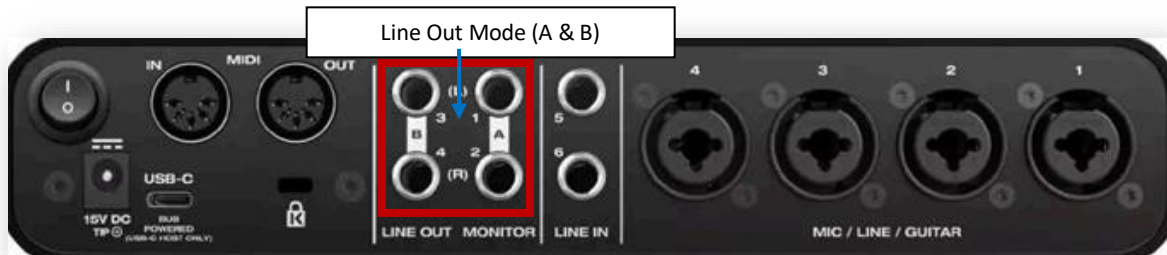


3. Switch on the Phantom Power (48V) Buttons, Monitor (MON) Buttons, and adjust the gain levels to 90 degrees upright.
 - Press the Phantom Power (48V) Buttons (Red LED lights will come on).
 - Press Monitor (MON) Buttons. (Blue LED lights will come on).
 - The gain knobs should be at the upright position (90 degrees)



4. Mode A/B (Hardware Audio Routing)

- Press the A/B button to select and activate hardware routing of audio feeds from the input XLR ports to the Audio Jack 6.5 mm output ports of which you will then physically connect via audio lead. (See Image 1.2 below)
- The recommended line out mode must be selected to **A** mode which is the same as (1 & 2).
- The **B** mode is the other option available and does similar function. You can activate through A/B mode.



(Image 1.2) – This image shows where the physical connection via Audio Jack 6.5mm should be plugged into. The actual recommended output mode should be via “A” i.e. port A1, this is where BUP (Marantz) gets mixed audio feeds for recording.



(Image 1.3) - The Image 1.3 below depicts the screen display showing the actual mode you are currently in.

5. Performer Lite Preset ‘BUP & PA’ (Software Audio Routing)

- routes feeds to BUP and PA thus the “**MON**” buttons are not used here so don’t switch them on.
- uses Audio Jack 6.5 mm output ports A1, A2, B3 and B4. Port A1 gives mixed audio feeds to BUP recording while Port A2, B3 and B4 gives mixed audio to Judge, Counsel and Public speakers. Ports A2, B3 and B4 are only used with the sound reinforcement system.
- When preset “BUP & PA” opened the audio routing mix is activated.



APPENDIX 7: Sound Reinforcement Set-Up

Sound Reinforcement System in the court room environment is important to assist people with hearing impairments including Judges, Court Parties and Public. This system helps in amplifying sound so to enhance effective communication during court sitting.

Set-up is straightforward following these steps:

1. Connect Audio Jack 6.5 mm to RCA cables to respective ports on Mixer and Marantz. The cables are labelled as to which ports to plug them in, refer to image below.

Mixer (Audio Jack 6.5 mm port)

Port A2	connects to
Port B3	connects to
Port B4	connects to

Amplifier (RCA port)

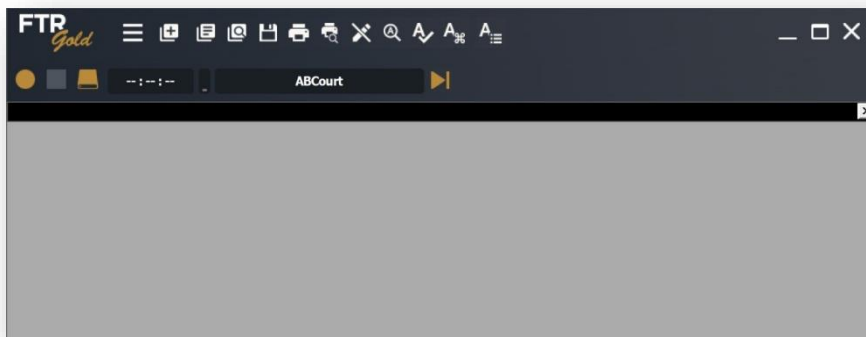
A (Judge Speaker)
B (Counsel Speaker)
C (Public Speaker)

2. Switch all the MON buttons under the XLR Inputs on the MOTU M6 Interface off as software routing will be used here.
3. Double click 'BUP & PC' on desktop if not yet open.
4. Speak through microphones and make necessary adjustments on amplifier gain knobs to get desired room mix that eliminate feeds backs and boost sound.

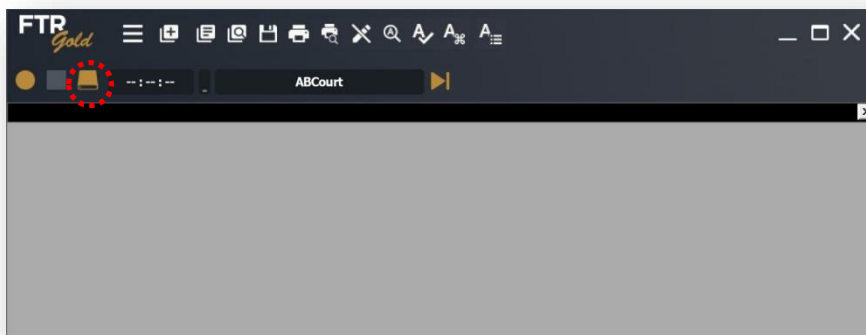


APPENDIX 8: Archive Recordings to Removable Drive

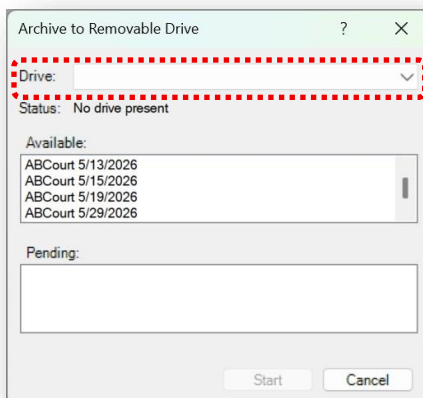
1. When the court adjourned for the day, stop recording, complete editing the log sheet and close it, you will have a blank Reporter window as shown below.



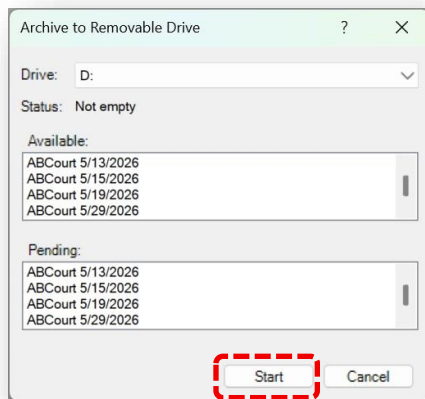
2. Insert the removable drive to the Notebook and wait until the drive is connected. Click on the **Archive to Removable** icon as shown below.



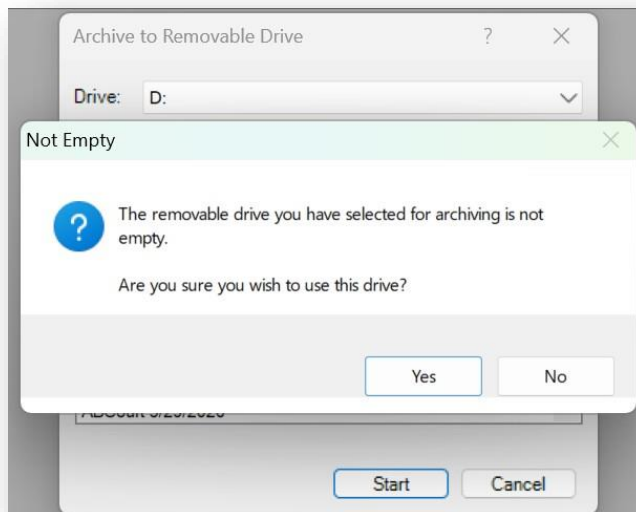
3. **Archive to Removable Drive** windows will appear as shown below, click on the **Drive** drop-down and select the removable drive letter.



- Once the drive is selected, observe that the **Pending** list of recordings yet to be archived is displayed. Click **Start** to archive as shown below.



- A message box will appear as shown below. Just click **Yes**.



- The archiving of files to removable drive will commence so just wait for the archival process to complete and click **OK** button.
- To check whether files have archived to the removable drive navigate to **This PC** then located the removable drive, open it and you will see a folder titled **Public**, this is where all the archived files are stored.
- Remove the removable drive and store it away from the portable and laptop.