Wireless Judge Pad (JPAD) System

Operating Instructions

(Issue 1.6) for
Base Station V1.1
Judge Pad V1.2a & V1.3 (Firmware V9.20)

Technical Support & Sales

Contact: John Allan, MazingTree Limited
Tel: +44 (0)1752 540540
Mobile: +44 (0)7824 505817
Skype: MazingTree (by prior arrangement only)
Email: john@mazingtree.com
Company Web: http://mazingtree.com
Judge Pads: http://www.judgepads.com

Dive Recorder Support and Downloads:

Malcolm Taylor
Website: http://www.diverecorder.co.uk
Email: malcolm@mdt.me.uk

!! Safety Warning: DO NOT use the mains power supplies on the Poolside; they are for use in a dry area only !!

This system transmits on 433MHz - License free radio band.
It is important that equipment brought into range of this system do not operate on the same frequencies, or on nearby frequencies at high power. Example: it has been found that Some TV outside Broadcast units use 455MHz at high powers that can cause interference and intermittent operation of this system. Most TV & Broadcast companies should be able to supply a list of frequencies used prior to the event.

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1. Introduction

The JPAD System is designed to record high board diving events. It provides a simple method by which the Judges can see the next dive information on the JPAD display. The Judge will then enter the Divers award directly into the Handset, The score is then "sent" via a wireless link to the Base Station, and into the Personal Computer (PC) for calculation, recording and display of the results.

The system consists of a Base Station (with power supply) that connects directly to a serial or USB port* on a PC running Compatible Meet Management or Recording Software.

* By using the Supplied USB to Serial Converter Cable

2. Pre-Event Check List

1. **IMPORTANT - Charge JPADS for 24 hours <u>OR</u> until the JPAD starts to becomes slightly warmer at the back of the handle.**

Charging takes 24 hours, and fully charged the JPADS will operate for approximately 50 hours.

2. **Check that all components are present**

Use the Contents list provided.

3. Charging

Must be carried out 24 hours before a Meet!

Charging time: It takes 24 hours for a full charge

1. With the JPADS still in the case, take out the JPAD Charger unit and a power supply.

2. Connect the power supply to the JPAD Charger unit. Then plug the power supply into the mains power supply. You should see a Green light on the JPAD Charger Unit.

3. Now plug one of the white cables from the JPAD Charger Unit into each JPAD noting that a Red charging indicator is illuminated for each connection.

4. Charging is complete after approximately 24 hours for a completely flat battery.

   Notes:
   a. *if a JPAD has NOT been fully discharged, then you can tell if they are fully charged when back of the JPAD handgrip becomes slightly*

warm.
b. For each hour of charge you can expect around 4 hours of use.

4. Setting up the system at the event or for testing

Pre-Event Testing and Set-Up

1. Plug the Base station into the serial port on the computer you intend to use as the “Recording” PC.
   If you do NOT have a serial port, then you will need to use a USB/Serial Converter provided, Otherwise skip to item 7.

2. ***Installing the Serial to USB Converter***

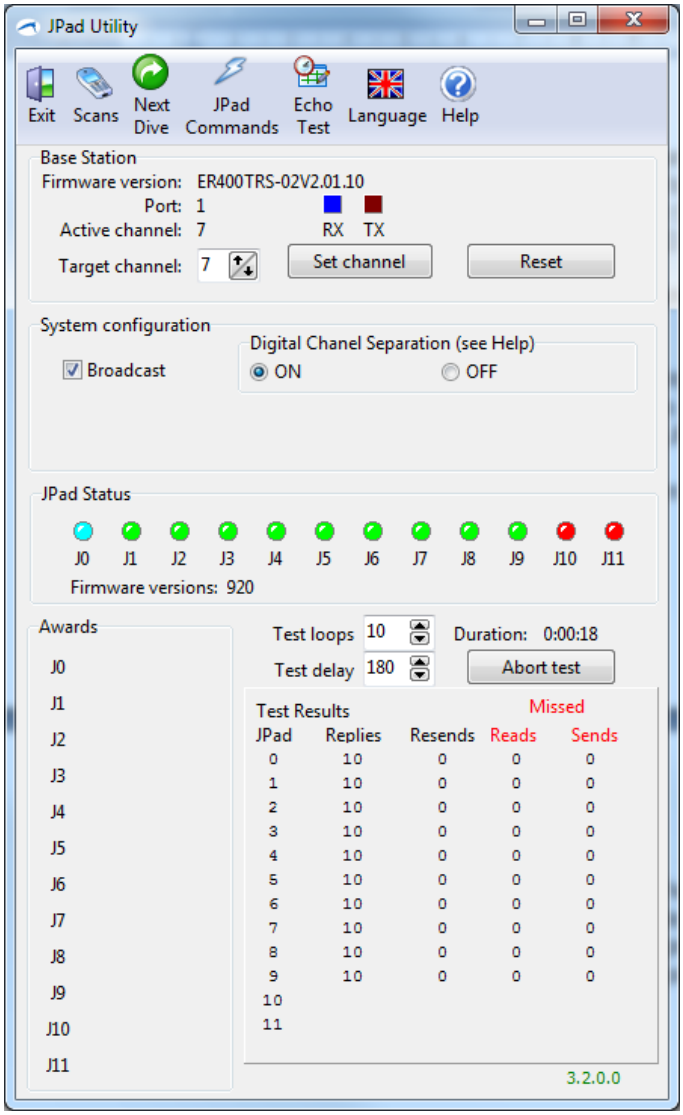
3. *Locate the USB to Serial Converter (Short cable, with a serial connector at one end and USB connector at the other)*

4. *Plug it into the PC. Windows will now automatically detect the device, and prompt you for the location of the appropriate driver. (Note: Windows Vista and Windows 7 should automatically install if you allow it to search online for the driver, otherwise continue below)*

5. *If you are not connected to the Internet, then please run the installation on the mini CD that is shipped with the USB-Serial Converter.*

6. Download and install the latest JPAD Utility Software from: www.diverecorder.com

7. Double click the **JPAD Utility** Shortcut on your desktop to run the utility and see the screen shown below.



8. Select **Scans, Full Scan –** this initiates a scan that will search all COM ports for a valid Base Station and then scan for available JPADS.
   For each JPAD found, the appropriate JPAD Status LED on the screen will change from Red to Green. (Note a JPAD Set to an ID of 0, will show as the Observer)
   JPADS must be on the same Channel as the Base station to be discovered!

9. Select **Next Dive** to simulate an Event running. Once the JPAD displays a Dive, you can enter a score on the JPAD Handset and press the Send (>) button to send the score to the JPAD Utility screen, shown under the Awards section above.
   (The screen shot above shows 6 awards from the 6 Detected JPADS)

10. Ideally a range test should be carried out. The range of the JPADS will be around 100m, within line of site, and a little less for each wall that the signal has to travel through. You can expect a good signal anywhere within line of sight in a swimming pool arena.

Event Set-up

1. Connect the Base station to a serial port on the "Recording" computer using the Serial Cable provided. *(Use and Setup the USB Converter if required)*

2. Connect one of the two identical 12V 1A Power supplies to the Base Station and plug the power supply into the mains. Check the Green Power light is illuminated.

3. Switch on all of the JPADS that you are intending to use. At any time after they display "Ready…" they can be discovered.

4. Dive Recorder will automatically detects the correct Serial Port (COM Port) and JPADS when you enter the recording screen just like the JPAD Utility.

Trouble Shooting

1. Software doesn't detect any JPADS.

Possible Causes:

a. Check for correct operation of the serial connection by watching for the RED flashing TX light on the Base Station. If you do not get a Red flashing light when using your Scoring/Recording Software, then retest with the JPAD Utility. If this still fails, then suspect a software problem or a problem with the Serial to USB converter if you are using one. Reboot your PC and try again. Another reason might be a clash with another program such as a Portable Computer or PDA Synchronising program that also uses the same COM port.

b. If no Lights at all on Base Station, then - No Power to base station

c. If you see a RED TX Light, but no Blue RX flashing light, then this indicates that no JPADS are found. This is either because none are switched on, or that they are not on the same channel as the Base station.
The channel may have been changed for Simultaneous or Events where two systems have been combined to create 1 x 7-9 Judges.
See JPAD Set up instructions in *Section 5 – Changing the JPAD System for different event configurations*.

2. JPAD Screen starts to fade or is nothing visible when switched on.
   a. JPAD Battery is flat – Recharge
   Charging rate is around 4 times the discharge rate. Therefore for every hour you charge, you will get around 4 hours use, so it is just possible to recover between events, if you have not fully

charged the JPADS before the event, but this should be avoided.

You can use the JPADS whilst charging if you can arrange for power in the balcony or a dry area. DO NOT use any mains Power Supplies on the pool side or wherever there is a possibility of wet people coming near them.

5. Changing the JPAD System for different event configurations

JPAD System Configuration Summary

Single Event System - use Channel 7
Dual Event System - Channel 1 & 7
Three Event Systems – Use Channels 1, 5 & 9
(This is critical for separation of channels)
3 Way events are only supported with DCS Enabled Systems > V9.20 Firmware)

For each System/Channel the Handsets must have unique Judge ID's starting at Judge 1 and increasing up to the number of judges you require.

Base Station
Change the Base station Channel - Use JPAD Utility software.

Lights:
Green (constant) = Power
Red (Flashing) = Transmit from PC. (Use to Confirm Serial port is working)
Blue = Receive from JPADS (Use to confirm JPADS are on correct Channel)

JPAD Quick Set-up Table

Function	**Action to enter set mode**	**Confirmation**
To display current settings	Power ON	(Screen says: Judge x Ch y)
Change Judge/ID & Channel	C+5 + Power ON *	Enter Number for Judge ID then press > Enter Number for Channel then press >
RESET RF Module (Ch 7)	C + 0 + Power ON *	Press > to confirm

(* Note that some older systems have [!] instead of [C] on the keypad)

Tip – Set each JPAD ID to match the last digit of the Serial number back panel of each JPAD, or so it's sequential if you ordered more than 10 Pads. This means you don't have to switch on the JPAD to find out what Judge number it is. Judge 0 = Observer, if needed.

Detailed Set Up

The JPAD system may be configured to run as two or more separate systems, for use if you are running simultaneous events, commonly using 2 x 5 Judges. This is easy to configure and involves changing the frequency of Base Station and a creating a matching "set" of JPADS on the same frequency with appropriate Judge Number.

NOTE: It is absolutely vital that you NEVER run an event with 2 JPADS on the same channel and Judge Number, otherwise interference will take place, and that Judges Handset will NOT work correctly. When configuring, make sure that you leave the JPADS in a sensible state.

Commonly you would have one of the following configurations:

Examples:
Single Event System
Base Station = Channel 7 (Default)
JPAD ID 0 = Channel 7 (Observer)
JPAD ID 1 = Channel 7
JPAD ID 2 = Channel 7
JPAD ID 3 = Channel 7
JPAD ID 4 = Channel 7
JPAD ID 5 = Channel 7 (Use for 5 Judge Events)

JPAD ID 6 = Channel 7
JPAD ID 7 = Channel 7 (Use for 7 Judge Events)
JPAD ID 8 = Channel 7
JPAD ID 9 = Channel 7 (Use if running a Synchro Event)

Note: When setting Judge ID 10 and 11 for Synchro, you have to select an 'a' (10) and 'c' (backlight) respectively.

JPAD ID a (10) = Channel 7 (Press '10' Button to select 'a')
JPAD ID c (11) = Channel 7 (Press 'Backlight' Button to select 'c')

Tip – Set each JPAD ID to match the last digit of the Serial number (on the back panel) of each JPAD. This means you don't have to switch on the JPAD to find out what Judge number it is.

Simultaneous Events (2 x 5 Judges)
System A
Base Station = Channel 7 (Default).
JPAD ID 1 = Channel 7
JPAD ID 2 = Channel 7
JPAD ID 3 = Channel 7
JPAD ID 4 = Channel 7
JPAD ID 5 = Channel 7

System B
Base Station = Channel 1
JPAD ID 1 = Channel 1
JPAD ID 2 = Channel 1
JPAD ID 3 = Channel 1
JPAD ID 4 = Channel 1
JPAD ID 5 = Channel 1

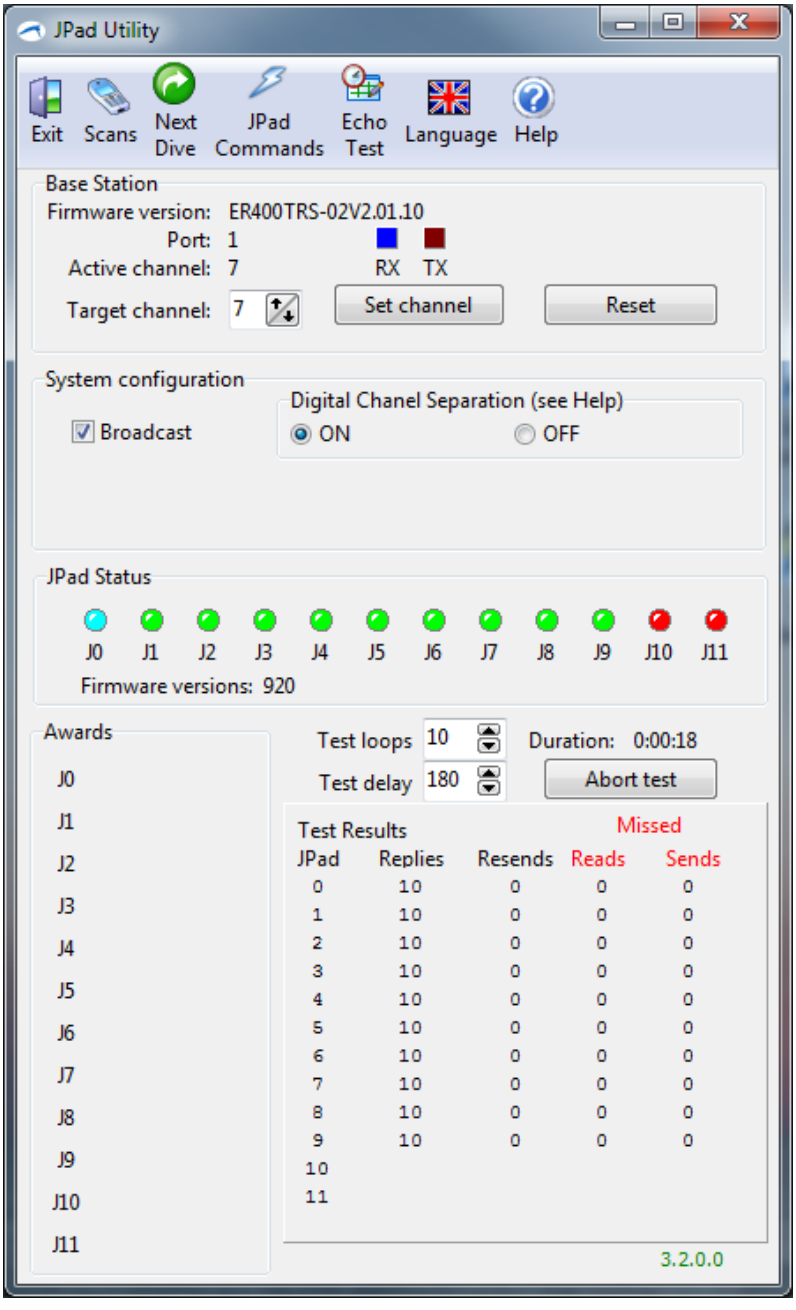
Three Simultaneous Events (3 x 5 Judges)
System A
Base Station = Channel 9
JPAD ID 1 = Channel 9
JPAD ID 2 = Channel 9
JPAD ID 3 = Channel 9
JPAD ID 4 = Channel 9
JPAD ID 5 = Channel 9

System B
Base Station = Channel 5
JPAD ID 1 = Channel 5
JPAD ID 2 = Channel 5
JPAD ID 3 = Channel 5
JPAD ID 4 = Channel 5
JPAD ID 5 = Channel 5

System c
Base Station = Channel 1
JPAD ID 1 = Channel 1
JPAD ID 2 = Channel 1
JPAD ID 3 = Channel 1
JPAD ID 4 = Channel 1
JPAD ID 5 = Channel 1

Changing the Base Station Channel

1. Connect the Base Station you wish to change to your PC's serial port, and then open the JPAD Utility software.
2. After scanning to find the Base Station, adjust the Base Station Channel Number by adjusting the Target Channel up/down as required, then Press SET CHANNEL to send the command to the Base station.



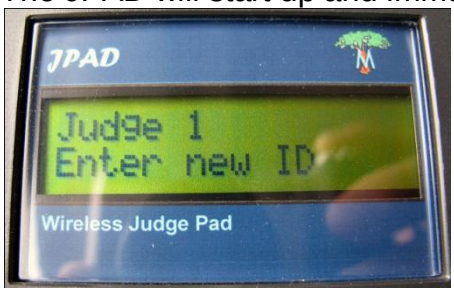
3. Press RESET to fully reset the Base Station to default settings (Also sets to Channel 7).
   After pressing the Set Channel or Reset buttons a Scan is automatically performed.

Changing the JPAD Channels and Judge Numbers

Each JPAD is made to be identical, but is then assigned a frequency Channel, and also an ID which equates to the Judge Number.

Switching on a JPAD displays the current ID/Judge number and Channel.

To Set the ID/Judge Number:

1. Hold down both the **C and 5** key, and with your other hand **switch on** the JPAD, then release.
   The JPAD will start up and immediately prompt for the Judge ID:
   

2. Enter the ID required, and press Send (>) button to confirm and see the Channel menu;

3. Enter the Channel (0 to 9 – Default is 7), and press Send (>) button to confirm.
4. The JPAD will continue to Boot up and will display the New Settings

To Reset the JPAD RF Module to Defaults (sets to Channel 7)

1. Hold down both the **C and 0** key, and with your other hand **switch on** the JPAD, then release. The JPAD will start up and prompt for confirmation.
2. Press Send (>) button to confirm (or Switch off handset to cancel)
3. Switch the JPAD off and then back on again to confirm correct settings.

6. Factory Settings

The following settings are set up in a special boot menu; these should not normally be changed as they are set correctly at time of manufacture for your region and configuration. If you receive new firmware, then you may need to set these up.

Note: If when you press 1,2 & 3 you get 7, 8 and 9 on the display, then you have the wrong keypad setting and you should follow the procedure below.

1. **Keypad layout** - Telephone style (1 at top left) or Calculator Style
   Handsets are supplied with two variants of the Keypad; one is in the form of a telephone keypad layout like a mobile phone (Numbering increases top to bottom). The other has the numbers increasing from the bottom like a calculator or computer keypad.
2. **Decimal Separator** – Period or Comma (e.g. 1.0 or 1,0)
   The comma is used in some European countries as the decimal separator.
3. **Digital Channel Separation** – This was added in firmware V9.20 and *Judge Pad V1.2a (see back of Handsets) and upwards and requires compatible V2 RF Modules and is a significant improvement when running 3 way events using channels 0, 5 and 9. It will not stop cross channel interference but means that traffic for one channel cannot be received by the wrong event equipment even if the next channel is used. It is still important to use widely spaced channels as detailed in Section 5.*

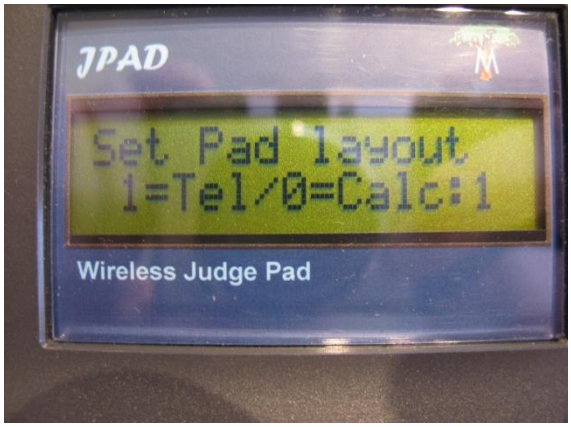
   NOTE: If DCS is switched ON, then you also need to activate DCS for each Base Station in the System using the JPAD Utility software (available from V3.2.0.0 onwards)

Changing factory settings

1. *Hold down both the **C and 2 and 8** key, and with your other hand **switch on** the JPAD, then release. The JPAD will start up and show the Set Pad Layout menu.*

Set Pad Layout

2. *Press 1 (for Telephone Layout)*
   (Not that if the keypad is currently set incorrectly, then should press 7 to enter a 1.

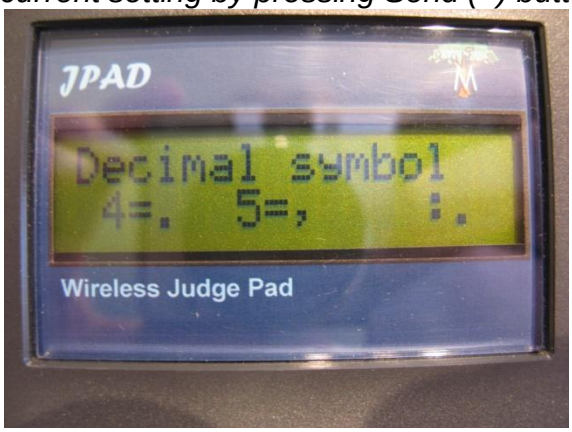


3. *Press Send (>) button to confirm and see next menu...*

   Tip: At this point if you changed the keypad menu style then it's better to switch off now, and start again with the new keypad setting so the numbers are correct, then continue below again...

Set Decimal Separator

4. *Press either 4 for period (1.0), or 5 for comma (1,0) or just accept the current setting by pressing Send (>) button...*



Set DCS - Digital Channel Separation

5. *Press 1 = ON, or 2 = Off, or simply accept the current setting by pressing Send (>) button...*

6. *The unit will restart and run as normal.*

Notes