

TECHNICAL PRESENTATION

VIDEO & GUIDE

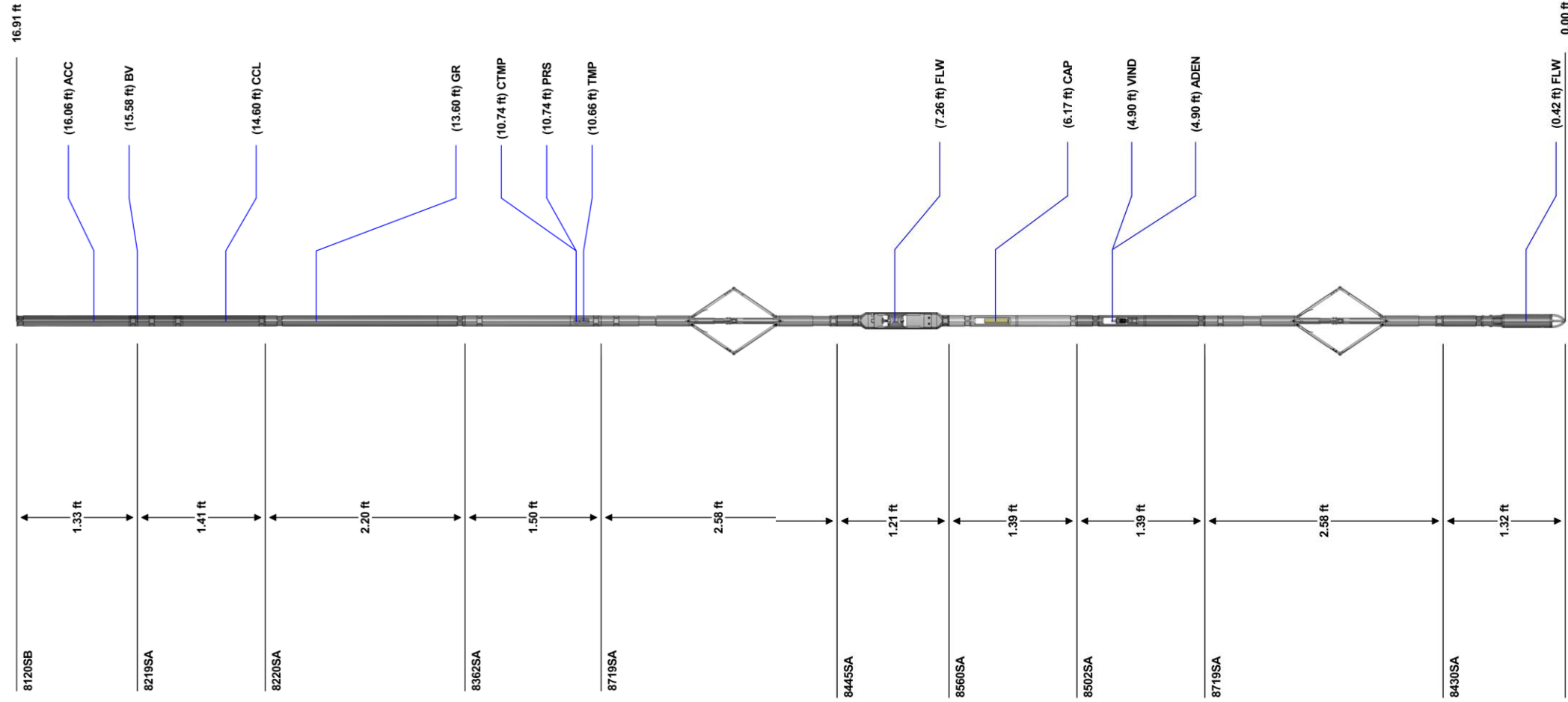
SPARTEK MPLT TUTORIAL

By Arifin Zaimuddin

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TOOL STRING CONFIGURATION



TOOL STRING CONFIGURATION

Tool String Configuration (top down)

| Serial Number | Description |
|----------------------|------------------------------------|
| 02130 | Memory Controller (Rev B) - 1.375D |
| 08159 | Gamma Ray - 1.375D |
| 09052 | CCL - 1.375D |
| 16293 | Centralizer - Inline - 1.375D |
| 06058 | Flow Meter - Inline - 2.125D |
| 18039 | Capacitance - 1.375D |
| 07039 | Fluid Density - Acoustic - 1.375D |
| 01036 | Temp / Pres - Quartz - 1.375D |
| 16291 | Centralizer - Inline - 1.375D |
| 05109 | Flow Meter - Continuous - 1.688D |

Fig: The toolstring configuration based on the successful runs history

GENERAL RULES OF SPARTEK MPLT

- **DO NOT OVERTORQUE THE SCREWS. OTHERWISE, BE READY TO GRAB THE EASY OUT TOOL.**
- **CALL AN ASSISTANT TO TIGHTEN THE TOOLSTRING PRIOR RIH.**
- **BATTERY IS CONSUMED ONCE THE INTERFACE IS CONNECTED TO THE TOOLSTRING.**
- **THE MAX HOURS OF BATTERY IS UP TO 25 HOURS.**
- **PLEASE FOLLOW THE TUTORIAL EXACTLY TO AVOID ANY BUGS ON SOFTWARE USAGE.**

SOFTWARES

- SPARWORKS
- ULTRAWIRE MEMLOG (FOR DEPTH & TIME DATA)
- EMERAUDE



CALIBRATING THE MPLT

- **INTRODUCTION**

- After installation, the Sparworks would not have any cal files.
- Copy the cal files onto the following folder:
 - C:\ProgramData\Spartek Systems\SparWorks\Cal
- Then continue to proceed with the video tutorial to update the calibration date prior to bench test.
- Take note on the units that represents the calibration.

CALIBRATING THE MPLT

- SNAPSHOT OF CALIBRATION MENU

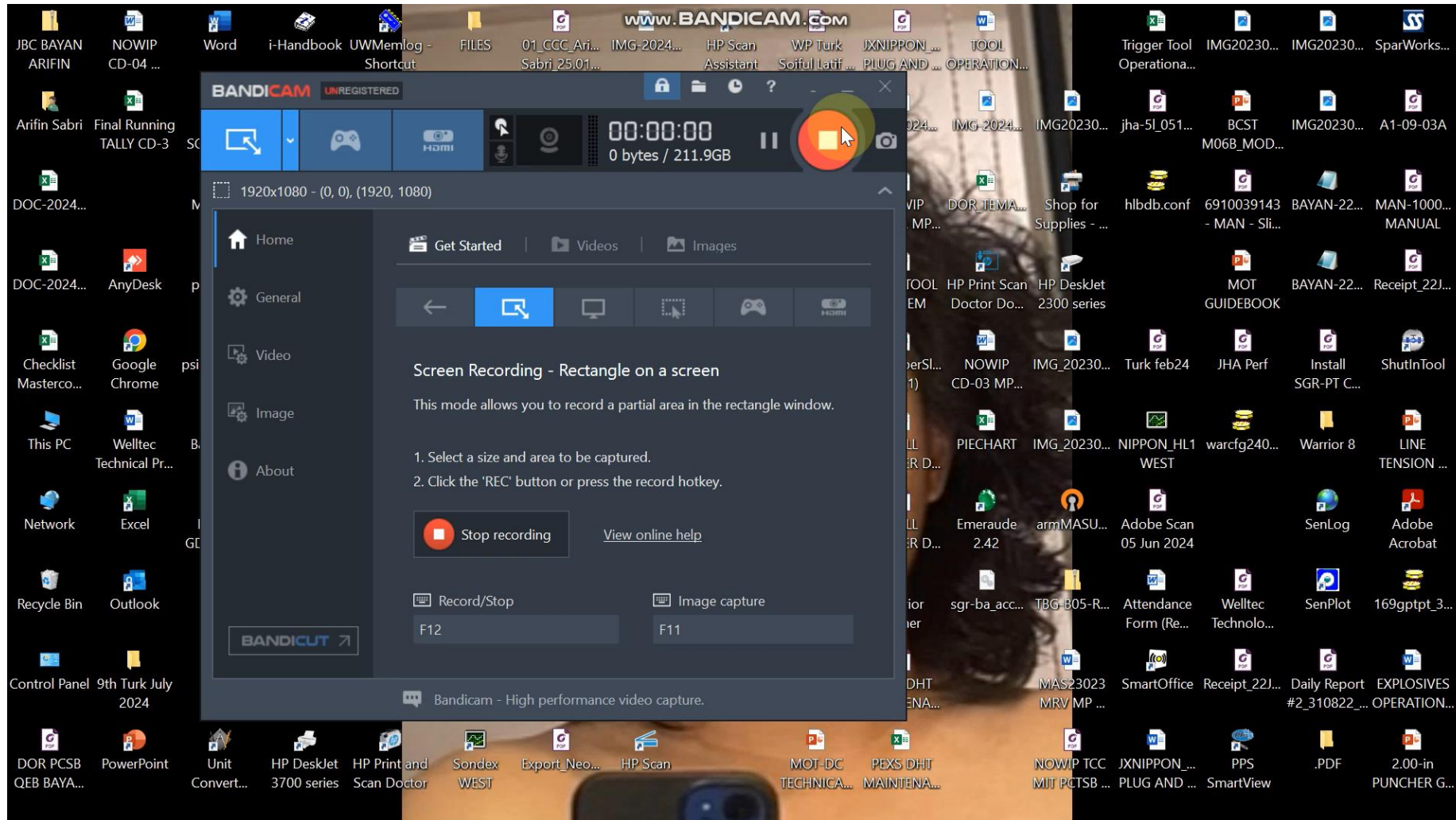
Calibration Manager

| CallID | Serial Number | Series | Tool Description | Sensor | Units | Calibration Method | Calibration Date / Time |
|--------|---------------|--------|---------------------------------------|--------|--------|--------------------|-------------------------|
| 26 | 01036 | 8362SA | Temp / Pres - Quartz - 1.375D | PRS | psi | 2D Polynomial | 2024-MAY-14 12:35:19 |
| 27 | 01036 | 8362SA | Temp / Pres - Quartz - 1.375D | CTMP | degC | Polynomial | 2024-MAY-14 12:35:35 |
| 28 | 01036 | 8362SA | Temp / Pres - Quartz - 1.375D | TMP | degC | Polynomial | 2024-MAY-14 12:35:46 |
| 14 | 02130 | 8120SB | Memory Controller (Rev B) - 1.375D | ACC | g | Polynomial | 2024-MAY-14 11:52:43 |
| 5 | 04086 | 8405SA | Flow Meter - Fullbore - 1.00D - 17... | FBS | rps | Polynomial | 2011-FEB-04 9:07:40 |
| 29 | 05109 | 8430SA | Flow Meter - Continuous - 1.688D | CFM | rps | Polynomial | 2024-MAY-14 12:36:01 |
| 7 | 06058 | 8442SA | Flow Meter - Inline - 1.688D | ILS | rps | Polynomial | 2013-JAN-07 12:34:59 |
| 24 | 06058 | 8445SA | Flow Meter - Inline - 2.125D | ILS | rps | Polynomial | 2024-MAY-14 12:34:07 |
| 16 | 07039 | 8502SA | Fluid Density - Acoustic - 1.375D | ADEN | g/c... | Temperature Cor... | 2024-MAY-14 11:53:06 |
| 30 | 08159 | 8220SA | Gamma Ray - 1.375D | GR | gAPI | Gamma Ray | 2024-MAY-14 14:16:49 |
| 23 | 09052 | 8219SA | CCL - 1.375D | CCL | mV | Polynomial | 2024-MAY-14 12:33:01 |
| 12 | 17021 | 8750SA | X-Y Caliper - 1.375D | C13X | in | Polynomial | 2013-JAN-23 13:28:45 |
| 11 | 17021 | 8750SA | X-Y Caliper - 1.375D | C24Y | in | Polynomial | 2013-JAN-23 13:28:35 |
| 39 | 18039 | 8560SA | Capacitance - 1.375D | CAP | Hz | Polynomial | 2024-SEP-01 22:24:04 |

Export Calibration Files Import Calibration Files Purge Calibrations Delete OK

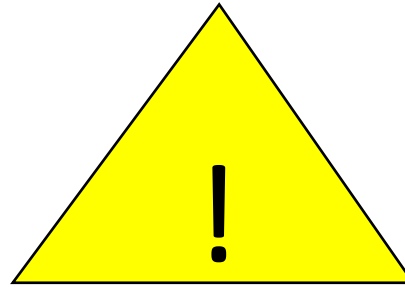
CALIBRATING THE MPLT

- TUTORIAL VIDEO



PROGRAMMING THE MPLT

- REMINDER



**ALWAYS MAKE SURE THE MEM
CONTROLLER AT “HOST” POSITION BEFORE
CONNECTING THE TOOLSTRING!**



PROGRAMMING THE TOOLSTRING

- TUTORIAL



PROGRAMMING THE TOOLSTRING

- CONNECTING THE BATTERY

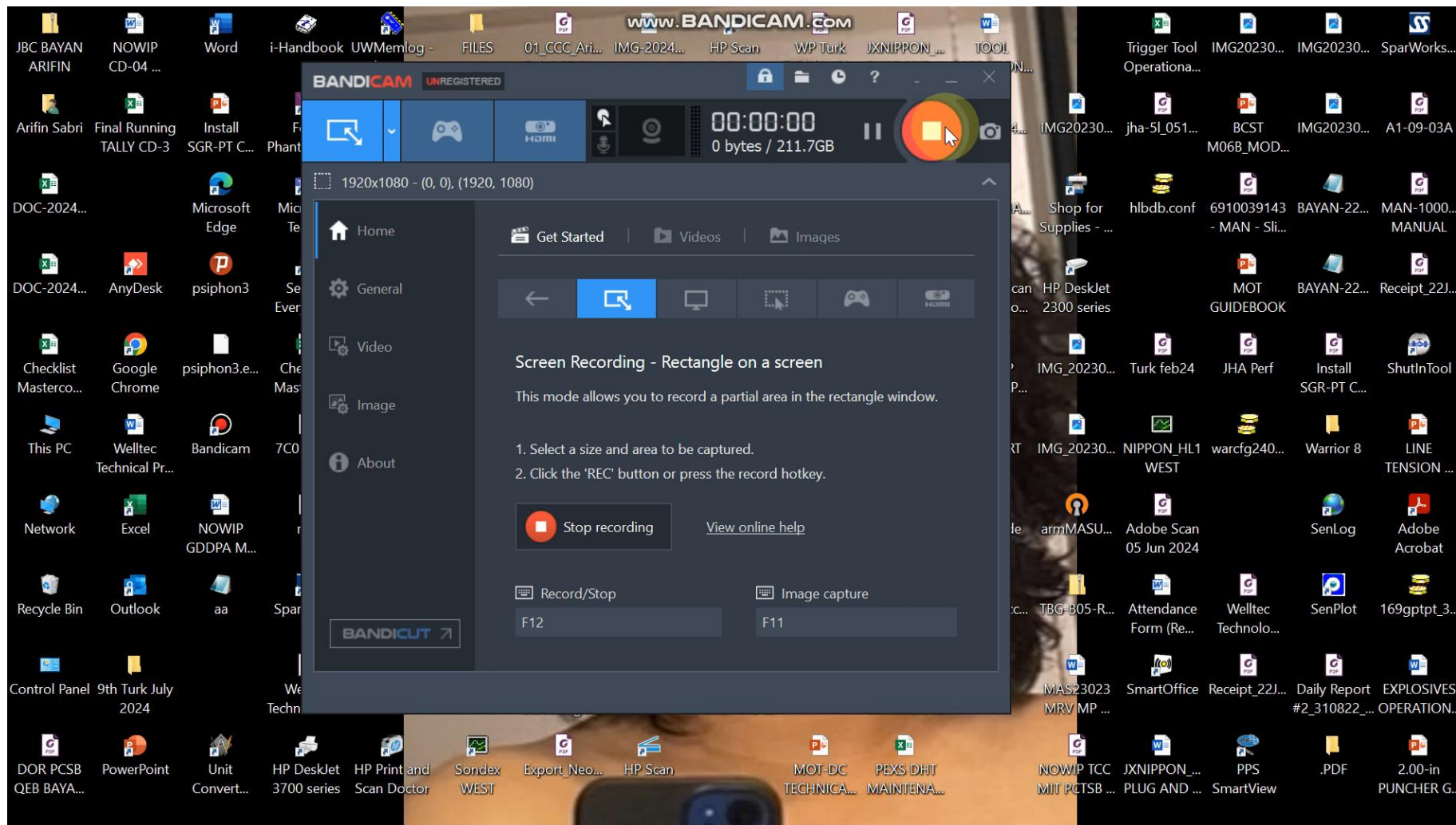


DEPTH DATA

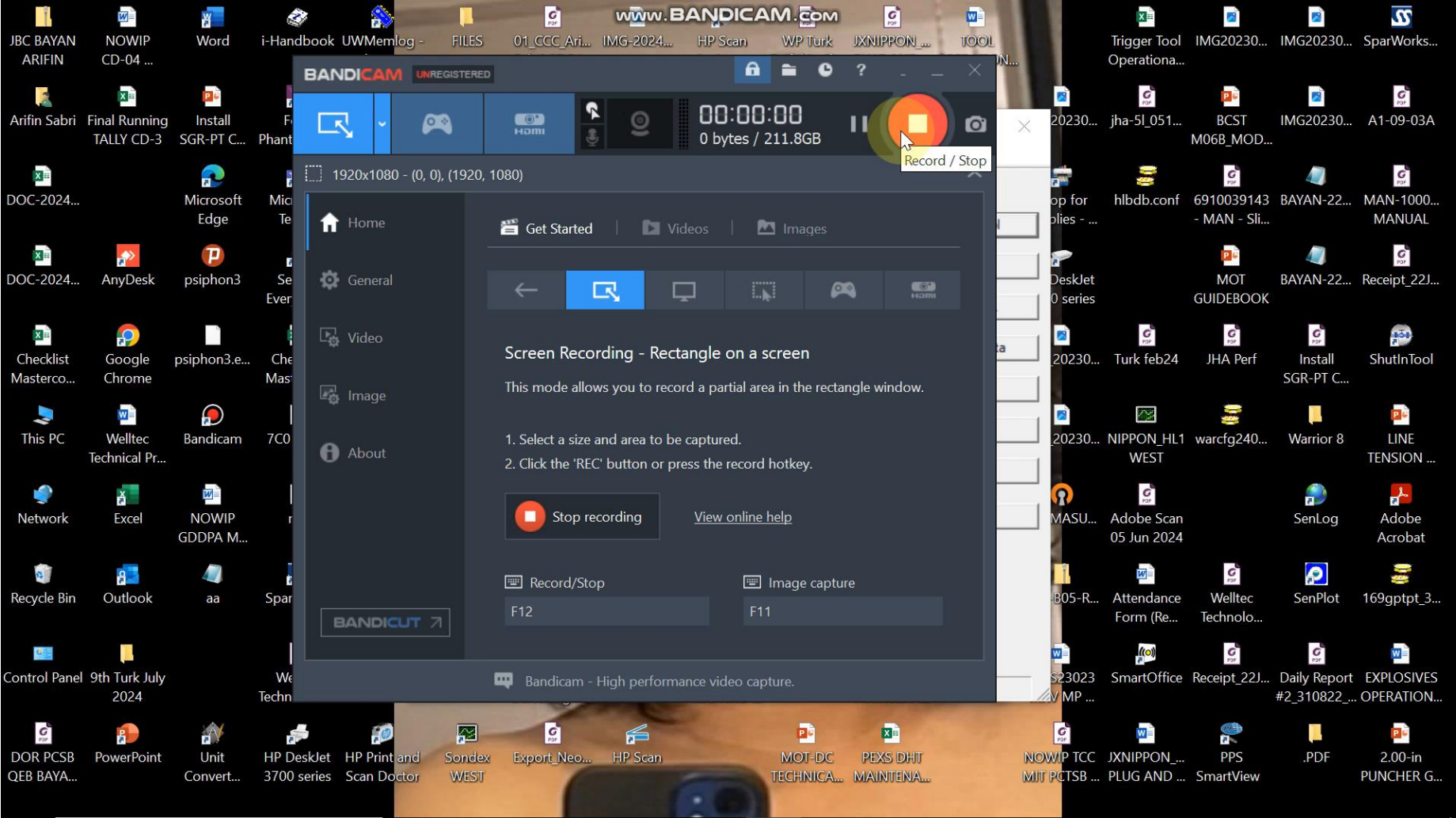
- **GENERAL PROCEDURE**
- To process bench test data, the dummy file from memlog could be used as a dummy depth data.
- Convert the dummy depth data from memlog to dxt file and use it for every bench test data to be processed.
- After the job has been completed, download the data from DTR using Memlog.
- Next, convert the .dpt to .dxt file as per the video.
- Copy and paste the .dxt onto the sparworks project folder for easy access.
- **THE SPARWORKS PROJECT FOLDER WILL ONLY EXIST AFTER THE TOOL DATA HAS BEEN DOWNLOADED!**

DEPTH DATA

- CONVERTING DPT TO TEXT

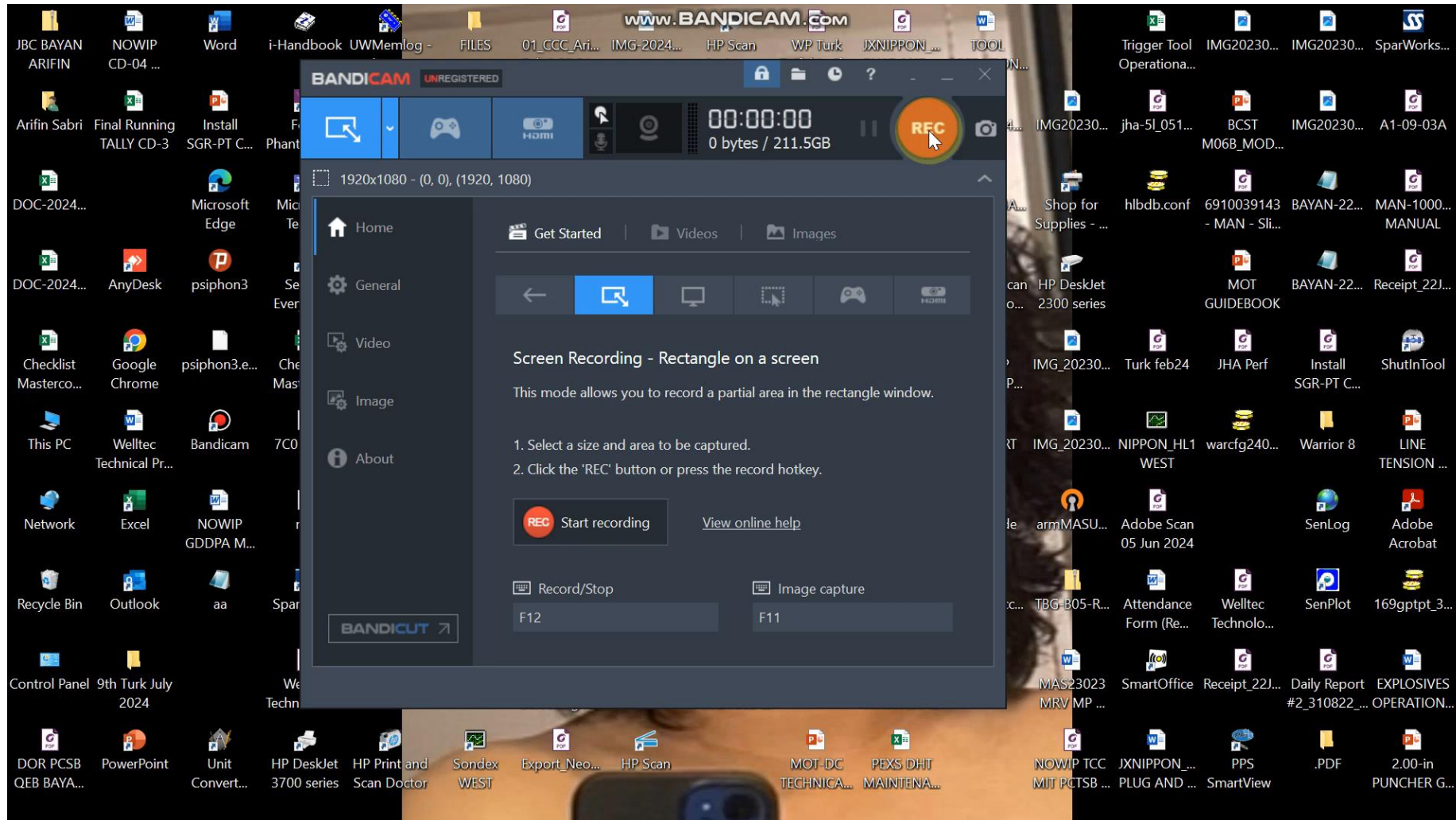


DOWNLOAD THE DATA



PROCESSING THE DATA

- TUTORIAL



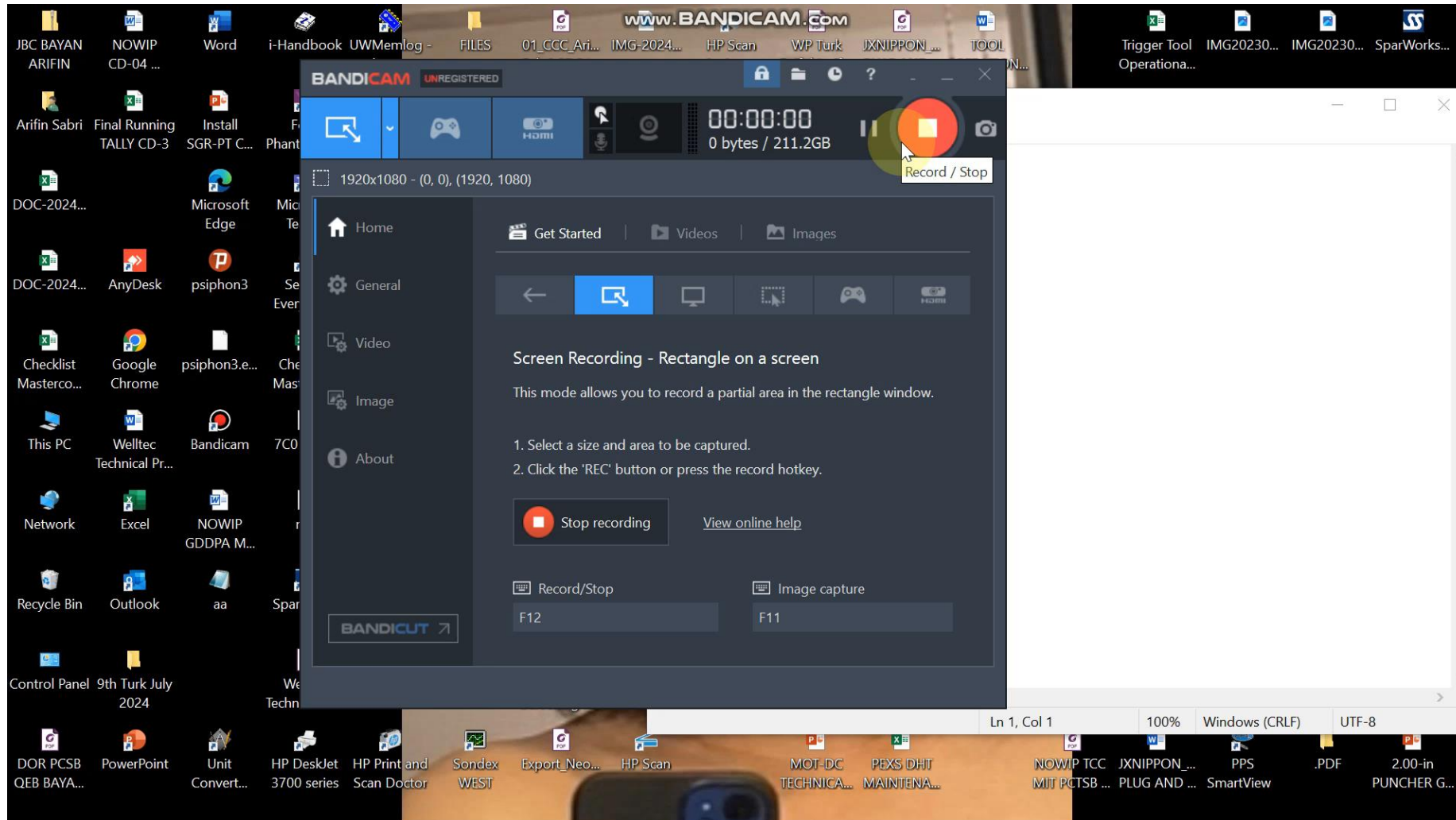
PROCESSING THE DATA

- **EXTRA NOTES**

- ✓ Always use CCL and ACC to create the pass instead of the depth and speed data.
- ✓ Remember to click the “Edit” and “Save” after choosing the depth dxt file, to prevent bugs happening.
- ✓ If the bug happens, recreate a new branch, as per next tutorial.

PROCESSING THE DATA

- DEPTH DATA BUG DURING PROCESSING



PRE-JOB & POST-JOB PREPARATIONS

- USE BUDDY SYSTEM TO TIGHTEN THE TOOLSTRING



PRE-JOB & POST-JOB PREPARATIONS

- TIGHTENING THE CFS



PRE-JOB & POST-JOB PREPARATIONS

- SERVICING THE ILS

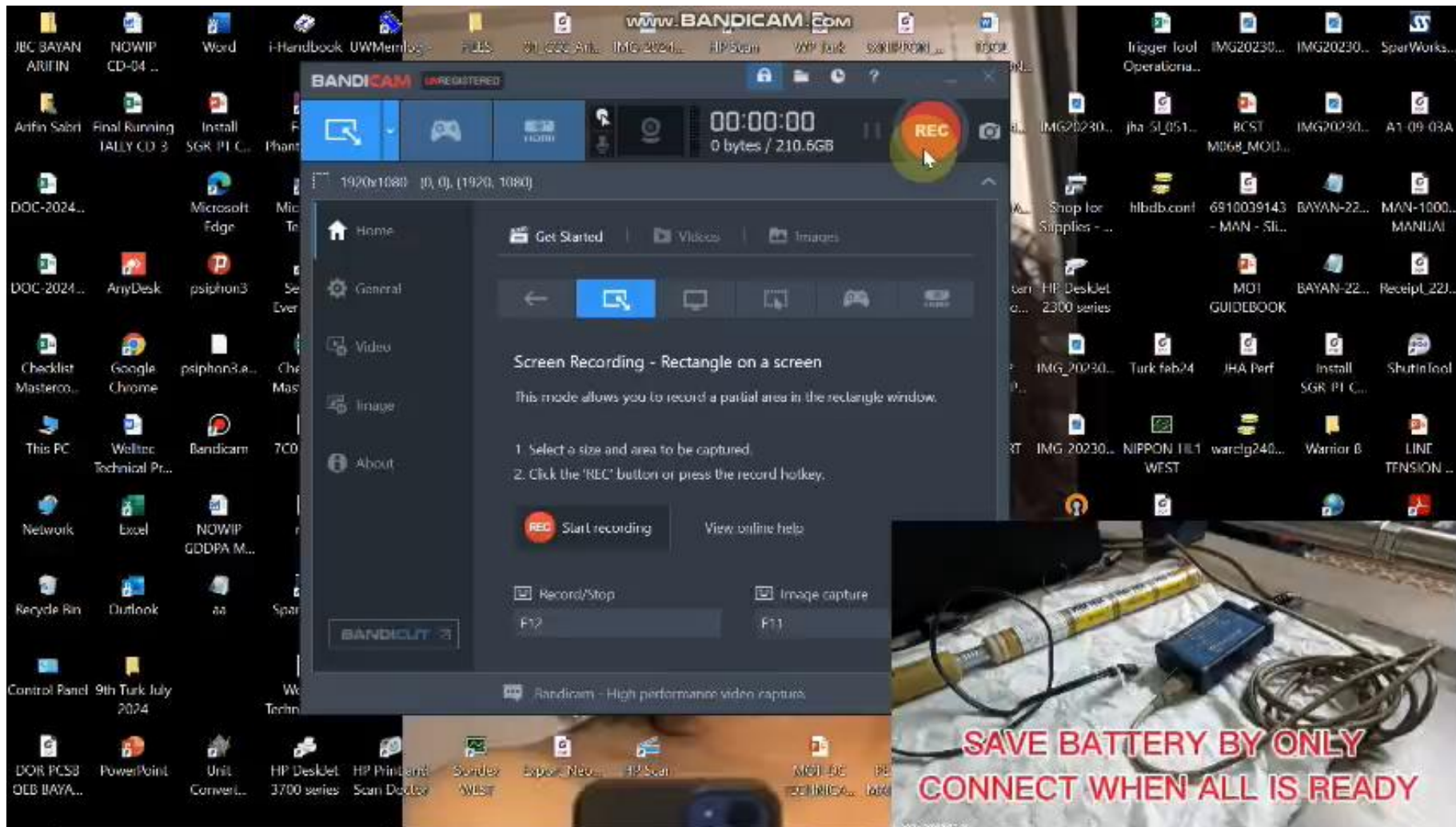


PRE-JOB & POST-JOB PREPARATIONS

- **SERVICING THE CFS**



REALTIME BENCH TEST



TROUBLESHOOTING PROCEDURES

- CONNECTOR WIRE JACK

! CAUTION:

Connector Access – The use of a breakout box or adapters (see Figure 2) is recommended to safely gain access to connector pins and measure continuity, voltage and current.

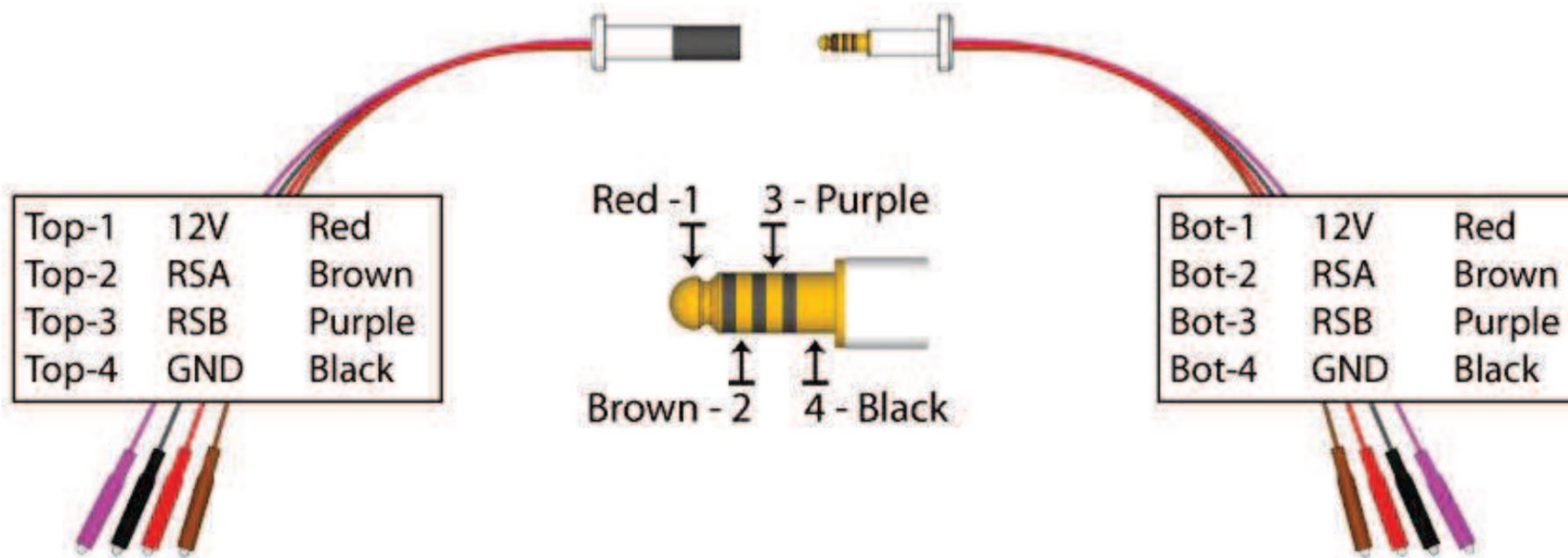


Figure 2 – Adapter Cable Pin Out

TROUBLESHOOTING PROCEDURES

- **QUARTZ TP TOOL**

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|--|
| Bot-1 | Bot-4 | 250 k | 1 M | Connector, wiring or PCB connections |
| Bot-2 | Bot-4 | 5 k | 300 k | Connector, wiring or PCB connections |
| Bot-3 | Bot-4 | 100 k | 600 k | Connector, surge protection diode, wiring or PCB connections |
| Top-1 | Top-4 | 250 k | 1 M | Connector, wiring or PCB connections |
| Top-2 | Top-4 | 30 k | 600 k | Connector, wiring or PCB connections |
| Top-3 | Top-4 | 30 k | 33 k | Connector, wiring or PCB connections |
| Top-1 | Bot-1 | 0 | 1 | Connector, wiring or PCB connections |
| Top-2 | Bot-2 | 9 | 11 | Connector, wiring or PCB connections |
| Top-3 | Bot-3 | 20 k | 600 k | Connector, wiring or PCB connections |
| Top-4 | Bot-4 | 0 | 1 | Connector, wiring or PCB connections |

TROUBLESHOOTING PROCEDURES

- **INLINE SPINNER TOOL**

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|---|
| Bot-1 | Bot-4 | 250 k | >10 Meg | Lower connector wiring and PCB connections |
| Bot-2 | Bot-4 | 5 k | 300 k | Lower connector wiring and PCB connections |
| Bot-3 | Bot-4 | 100 k | 600 k | Protection diode D5, Lower connector wiring and PCB connections |
| Top-1 | Top-4 | 250 k | >10 Meg | Lower connector wiring, PCB connections |
| Top-2 | Top-4 | 30 k | 600 k | Lower connector wiring, PCB connections |
| Top-3 | Top-4 | 30 k | 33 k | Protection diode D5, Lower connector wiring and PCB connections |
| Top-1 | Bot-1 | 0 | 1 | Connector wiring, PCB connections |
| Top-2 | Bot-2 | 9 | 11 | Connector wiring, PCB connections |
| Top-3 | Bot-3 | 20 k | 600 k | Switch U11, D1, Connector wiring and PCB connections |
| Top-4 | Bot-4 | 0 | 1 | Connector wiring |

TROUBLESHOOTING PROCEDURES

- CFM TOOL

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|-----------------------------------|
| Top-1 | Top-4 | 250 k | >10 Meg | Connector wiring, PCB connections |
| Top-2 | Top-4 | 30 k | 600 k | Connector wiring, PCB connections |
| Top-3 | Top-4 | 30 k | 33 k | Connector wiring, PCB connections |

TROUBLESHOOTING PROCEDURES

- **CAPACITANCE TOOL**

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|--|
| Bot-1 | Bot-4 | 250 k | >10 Meg | Lower connector wiring and PCB 1175 connections |
| Bot-2 | Bot-4 | 5 k | 300 k | Lower connector wiring and PCB 1175 connections |
| Bot-3 | Bot-4 | 100 k | 600 k | Protection diode D5, Lower connector wiring and PCB 1175 connections |
| Top-1 | Top-4 | 250 k | >10 Meg | Lower connector wiring, PCB 1175 connections |
| Top-2 | Top-4 | 30 k | 600 k | Lower connector wiring, PCB 1175 connections |
| Top-3 | Top-4 | 30 k | 33 k | Protection diode D5, Lower connector wiring and PCB 1175 connections |
| Top-1 | Bot-1 | 0 | 1 | Connector wiring, PCB 1175 connections |
| Top-2 | Bot-2 | 9 | 11 | Connector wiring, PCB 1175 connections |
| Top-3 | Bot-3 | 20 k | 600 k | Switch U11, D1, Connector wiring and PCB 1175 connections |
| Top-4 | Bot-4 | 0 | 1 | Connector wiring |

TROUBLESHOOTING PROCEDURES

- ACOUSTIC DENSITY TOOL

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|--|
| Bot-1 | Bot-4 | 250 k | >1 M | Lower connector wiring and PCB 1162 connections |
| Bot-2 | Bot-4 | 5 k | 300 k | Lower connector wiring and PCB 1162 connections |
| Bot-3 | Bot-4 | 100 k | 600 k | Protection diode D5, Lower connector wiring and PCB 1162 connections |
| Top-1 | Top-4 | 100 k | >1 M | Lower connector wiring, PCB 1175 connections |
| Top-2 | Top-4 | 30 k | 600 k | Lower connector wiring, PCB 1175 connections |
| Top-3 | Top-4 | 30 k | 33 k | Protection diode D1, Lower connector wiring and PCB 1162 connections |
| Top-1 | Bot-1 | 0 | 1 | Connector wiring, PCB 1162 connections |
| Top-2 | Bot-2 | 9 | 11 | Connector wiring, PCB 1162 connections |
| Top-3 | Bot-3 | 20 k | 600 k | Switch U3, D1, Connector wiring and PCB 1162 connections |
| Top-4 | Bot-4 | 0 | 1 | Connector wiring |

TROUBLESHOOTING PROCEDURES

- GR TOOL**

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|---|
| Bot-1 | Bot-4 | 500 k | >10 Meg | Lower connector wiring and PCB connections |
| Bot-2 | Bot-4 | 5 k | 300 k | Lower connector wiring and PCB connections |
| Bot-3 | Bot-4 | 100 k | 600 k | Protection diode D5, Lower connector wiring and PCB connections |
| Top-1 | Top-4 | 500 k | >10 Meg | Lower connector wiring, PCB connections |
| Top-2 | Top-4 | 30 k | 600 k | Lower connector wiring, PCB connections |
| Top-3 | Top-4 | 30 k | 33 k | Protection diode D5, Lower connector wiring and PCB connections |
| Top-1 | Bot-1 | 0 | 1 | Connector wiring, PCB connections |
| Top-2 | Bot-2 | 9 | 11 | Connector wiring, PCB connections |
| Top-3 | Bot-3 | 20 k | 600 k | Switch U11, D1, Connector wiring and PCB connections |
| Top-4 | Bot-4 | 0 | 1 | Connector wiring |

TROUBLESHOOTING PROCEDURES

- CENTRALIZER TOOL**

Continuity Measurements

All of the continuity measurements listed below are performed with the tool disconnected.

| DMM (+) | DMM (-) | Min (Ω) | Max (Ω) | Possible Faults |
|---------|---------|------------------|------------------|---|
| Bot-1 | Bot-4 | 250 k | >10 Meg | Lower connector wiring and PCB connections |
| Bot-2 | Bot-4 | 5 k | 300 k | Lower connector wiring and PCB connections |
| Bot-3 | Bot-4 | 100 k | 600 k | Protection diode D5, Lower connector wiring and PCB connections |
| Top-1 | Top-4 | 250 k | >10 Meg | Lower connector wiring, PCB connections |
| Top-2 | Top-4 | 30 k | 600 k | Lower connector wiring, PCB connections |
| Top-3 | Top-4 | 30 k | 33 k | Protection diode D5, Lower connector wiring and PCB connections |
| Top-1 | Bot-1 | 0 | 1 | Connector wiring, PCB connections |
| Top-2 | Bot-2 | 9 | 11 | Connector wiring, PCB connections |
| Top-3 | Bot-3 | 20 k | 600 k | Switch U11, D1, Connector wiring and PCB connections |
| Top-4 | Bot-4 | 0 | 1 | Connector wiring |

TROUBLESHOOTING PROCEDURES

| RESISTANCE CHECK ON PLT SPARTEK | | | | | | | | | | | |
|--|-------|------------|-------|-------|----------|--------------------------------------|-------|------------|-------|-------|-----------|
| PRESSURE/TEMPERATURE SENSOR (01036) | | | | | | CASING COLLAR LOCATOR (09052) | | | | | |
| TOP 1 | TOP 4 | 10.5M ohm | TOP 1 | BOT 1 | 0.5 ohm | TOP 1 | TOP 4 | 7.5M ohm | TOP 1 | BOT 1 | 0.1 ohm |
| TOP 2 | TOP 4 | 14.87k ohm | TOP 2 | BOT 2 | 11.1 ohm | TOP 2 | TOP 4 | 10.27k ohm | TOP 2 | BOT 2 | 10.4 ohm |
| TOP 3 | TOP 4 | 8.72k ohm | TOP 3 | BOT 3 | 1.7M ohm | TOP 3 | TOP 4 | 8.51k ohm | TOP 3 | BOT 3 | O/L |
| | | | TOP 4 | BOT 4 | 0.7 ohm | | | | TOP 4 | BOT 4 | 0.3 ohm |
| BOT 1 | BOT 4 | 10M ohm | | | | BOT 1 | BOT 4 | 10M ohm | | | |
| BOT 2 | BOT 4 | 14.88k ohm | | | | BOT 2 | BOT 4 | 10.3k ohm | | | |
| BOT 3 | BOT 4 | 5.40M ohm | | | | BOT 3 | BOT 4 | O/L | | | |
| PRODUCTION GAMMA RAY (08159) | | | | | | ACOUSTIC DENSITY (07039) | | | | | |
| TOP 1 | TOP 4 | 4.3M ohm | TOP 1 | BOT 1 | 0.6 ohm | TOP 1 | TOP 4 | 7.07M ohm | TOP 1 | BOT 1 | 0.4 ohm |
| TOP 2 | TOP 4 | 14.53k ohm | TOP 2 | BOT 2 | 10.8 ohm | TOP 2 | TOP 4 | 10.85k ohm | TOP 2 | BOT 2 | 10.5 ohm |
| TOP 3 | TOP 4 | 8.58k ohm | TOP 3 | BOT 3 | 1.8M ohm | TOP 3 | TOP 4 | 8.51k ohm | TOP 3 | BOT 3 | 1.8M ohm |
| | | | TOP 4 | BOT 4 | 0.5 ohm | | | | TOP 4 | BOT 4 | 0.5 ohm |
| BOT 1 | BOT 4 | 4.66M ohm | | | | BOT 1 | BOT 4 | 7.5M ohm | | | |
| BOT 2 | BOT 4 | 14.53k ohm | | | | BOT 2 | BOT 4 | 10.85k ohm | | | |
| BOT 3 | BOT 4 | 4.51M ohm | | | | BOT 3 | BOT 4 | 5.04M ohm | | | |
| CAPACITANCE (18039) | | | | | | INLINE SPINNER (06058) | | | | | |
| TOP 1 | TOP 4 | 6.5M ohm | TOP 1 | BOT 1 | 0.6 ohm | TOP 1 | TOP 4 | 8.9M ohm | TOP 1 | BOT 1 | 0.6 ohm |
| TOP 2 | TOP 4 | 14.34k ohm | TOP 2 | BOT 2 | 10.8 ohm | TOP 2 | TOP 4 | 14.62k ohm | TOP 2 | BOT 2 | 10.5 ohm |
| TOP 3 | TOP 4 | 8.48k ohm | TOP 3 | BOT 3 | 1.7M ohm | TOP 3 | TOP 4 | 8.64k ohm | TOP 3 | BOT 3 | 1.8 M ohm |
| | | | TOP 4 | BOT 4 | 0.6 ohm | | | | TOP 4 | BOT 4 | 0.7 ohm |
| BOT 1 | BOT 4 | 6.5M ohm | | | | BOT 1 | BOT 4 | 7.5M ohm | | | |
| BOT 2 | BOT 4 | 14.35k ohm | | | | BOT 2 | BOT 4 | 14.62k ohm | | | |
| BOT 3 | BOT 4 | 5.34M ohm | | | | BOT 3 | BOT 4 | 5.4M ohm | | | |

| | | | | | | | | | | | | | | | | | |
|----------------------------------|-------|------------|--|--|--|-------|-------|------------|-------|-------|-----------|----------------------------------|--|--|--|--|--|
| Fullbore Spinner (04086) | | | | | | | | | | | | INLINE CENTRALIZER (6291) | | | | | |
| TOP 1 | TOP 4 | 5.5M ohm | | | | TOP 1 | TOP 4 | 6.2M ohm | TOP 1 | BOT 1 | 0.6 ohm | | | | | | |
| TOP 2 | TOP 4 | 14.53k ohm | | | | TOP 2 | TOP 4 | 14.28k ohm | TOP 2 | BOT 2 | 10.5 ohm | | | | | | |
| TOP 3 | TOP 4 | 8.67k ohm | | | | TOP 3 | TOP 4 | 8.45k ohm | TOP 3 | BOT 3 | 1.8M ohm | | | | | | |
| | | | | | | | | | TOP 4 | BOT 4 | 0.6 ohm | | | | | | |
| | | | | | | BOT 1 | BOT 4 | 5.5M ohm | | | | | | | | | |
| | | | | | | BOT 2 | BOT 4 | 14.28k ohm | | | | | | | | | |
| | | | | | | BOT 3 | BOT 4 | 5.4M ohm | | | | | | | | | |
| INLINE CENTRALIZER (6293) | | | | | | | | | | | | | | | | | |
| TOP 1 | TOP 4 | 14M ohm | | | | TOP 1 | BOT 1 | 1 ohm | | | | | | | | | |
| TOP 2 | TOP 4 | 14.88k ohm | | | | TOP 2 | BOT 2 | 10.5 ohm | | | | | | | | | |
| TOP 3 | TOP 4 | O/L | | | | TOP 3 | BOT 3 | O/L | | | | | | | | | |
| | | | | | | TOP 4 | BOT 4 | 0.6 ohm | | | | | | | | | |
| BOT 1 | BOT 4 | 10M ohm | | | | | | | | | | | | | | | |
| BOT 2 | BOT 4 | 14.88k ohm | | | | | | | | | | | | | | | |
| BOT 3 | BOT 4 | 4.9M ohm | | | | | | | | | | | | | | | |
| PRODUCTION KNUCKLE JOINT | | | | | | | | | | | | MEMORY CONTROLLER (02130) | | | | | |
| TOP 1 | TOP 4 | 2.5 ohm | | | | TOP 1 | BOT 1 | 0.1 ohm | BOT 1 | BOT 4 | 72k ohm | | | | | | |
| TOP 2 | TOP 4 | 0.7M ohm | | | | TOP 2 | BOT 2 | 0.4M ohm | BOT 2 | BOT 4 | 5.94k ohm | | | | | | |
| TOP 3 | TOP 4 | 2.5 ohm | | | | TOP 3 | BOT 3 | 0.3M ohm | BOT 3 | BOT 4 | 4.24k ohm | | | | | | |
| | | | | | | TOP 4 | BOT 4 | 0.6 ohm | | | | | | | | | |
| BOT 1 | BOT 4 | 1.3 ohm | | | | | | | | | | | | | | | |
| BOT 2 | BOT 4 | 0.5M ohm | | | | | | | | | | | | | | | |
| BOT 3 | BOT 4 | 2.7 ohm | | | | | | | | | | | | | | | |

FIG: HISTORY CHECK ON THE CONTINUITY VALUE