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TECHNICAL PRESENTATION VIDEO & GUIDE SPARTEK MPLT TUTORIAL

By Arifin Zaimuddin

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TOOL STRING CONFIGURATION

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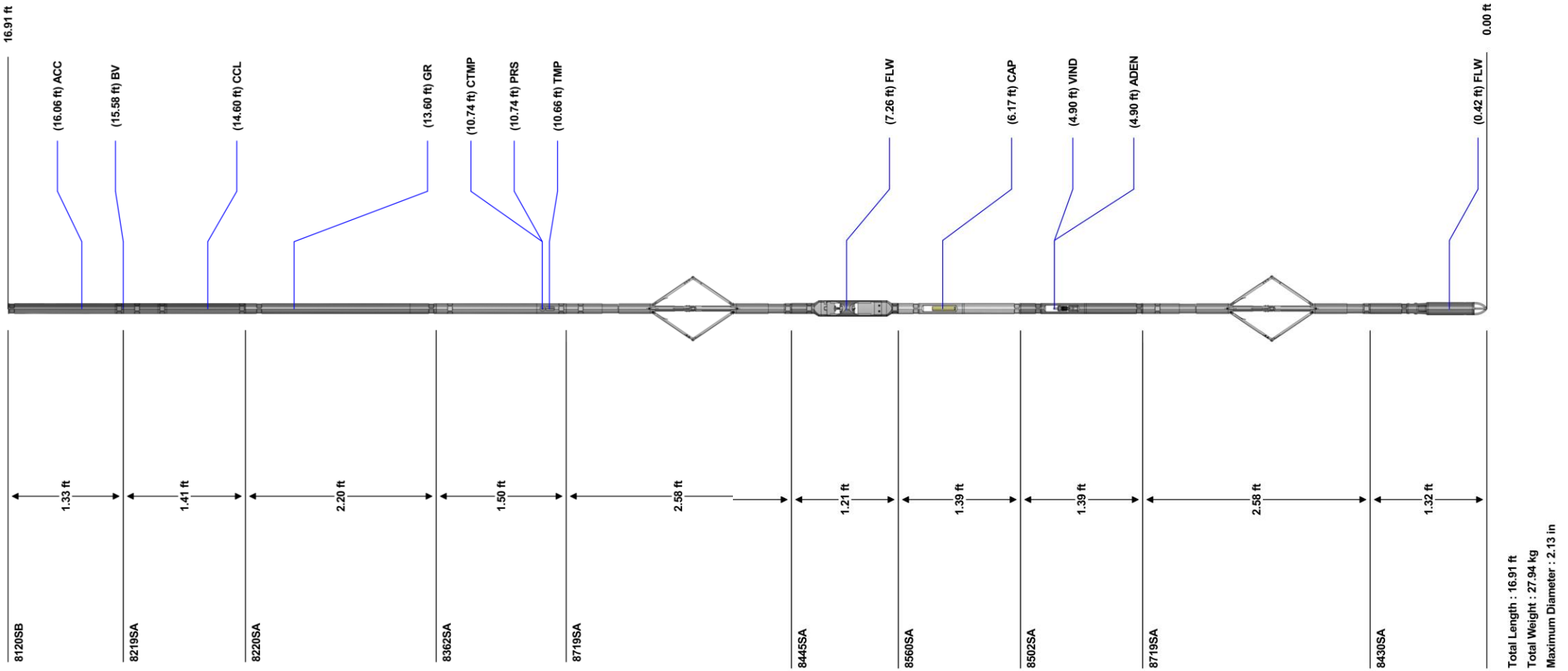

TOOL STRING CONFIGURATION

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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

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- 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

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

CALIBRATING THE MPLT

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- **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**

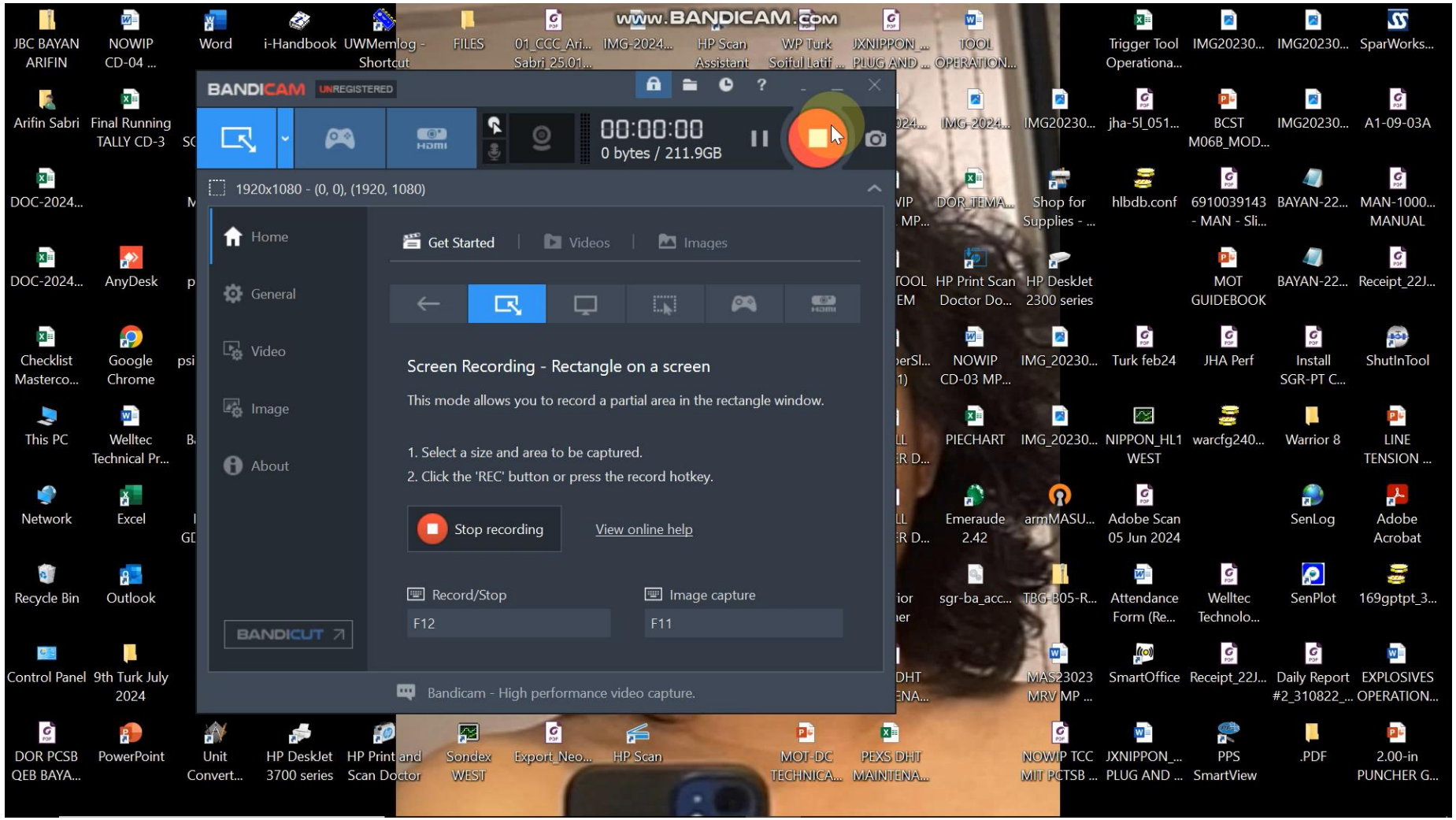
Calibration Manager

CalID	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

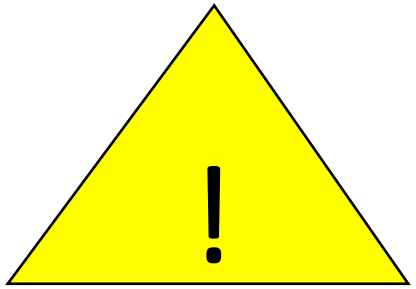
CALIBRATING THE MPLT

- TUTORIAL VIDEO



PROGRAMMING THE MPLT

- **REMINDER**



ALWAYS MAKE SURE THE MEM CONTROLLER AT "HOST" POSITION BEFORE CONNECTING THE TOOLSTRING!

PROGRAMMING THE TOOLSTRING

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- TUTORIAL

PROGRAMMING THE TOOLSTRING

- **CONNECTING THE BATTERY**

DEPTH DATA

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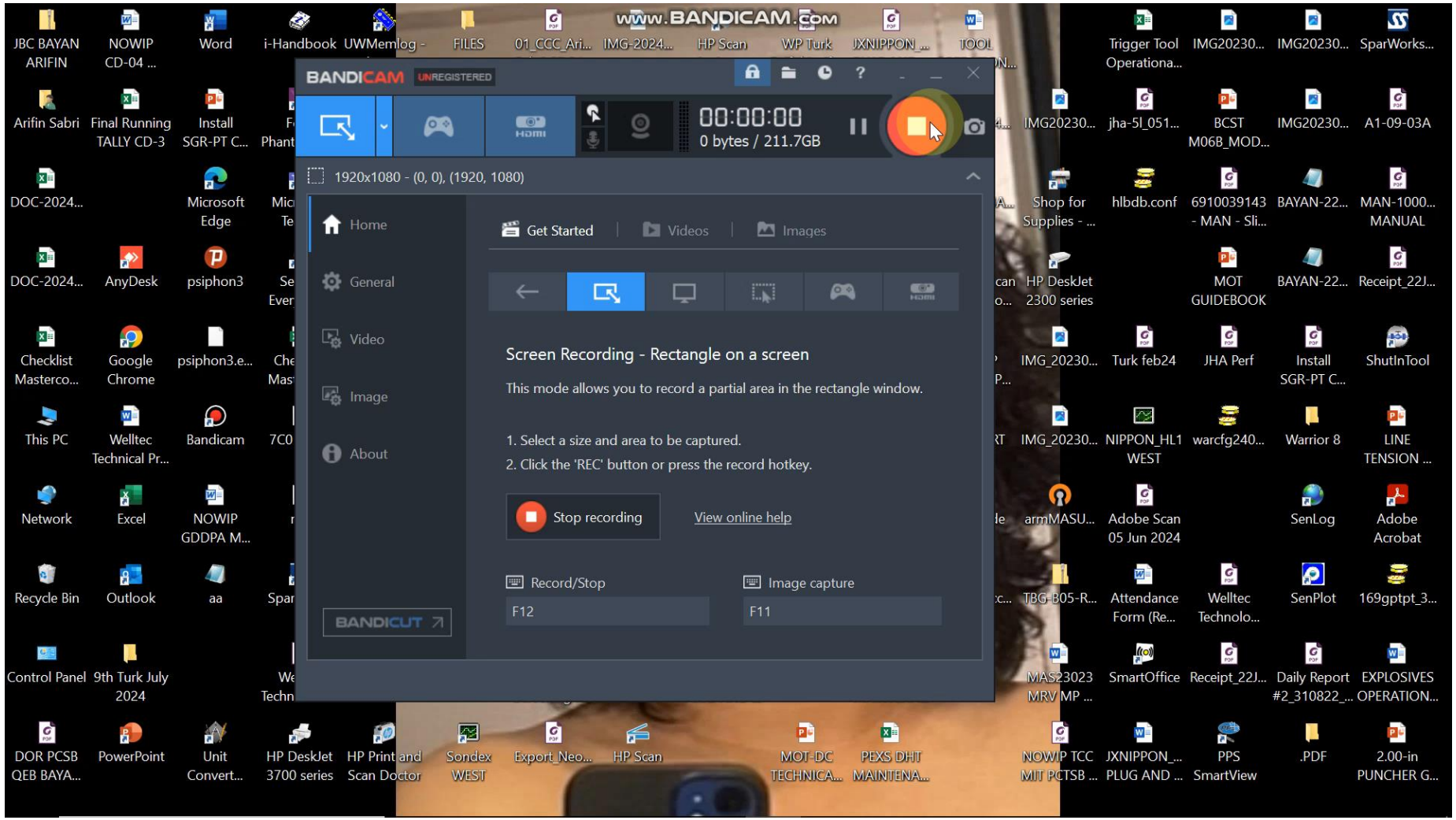
- **GENERAL PROCEDURE**

- 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

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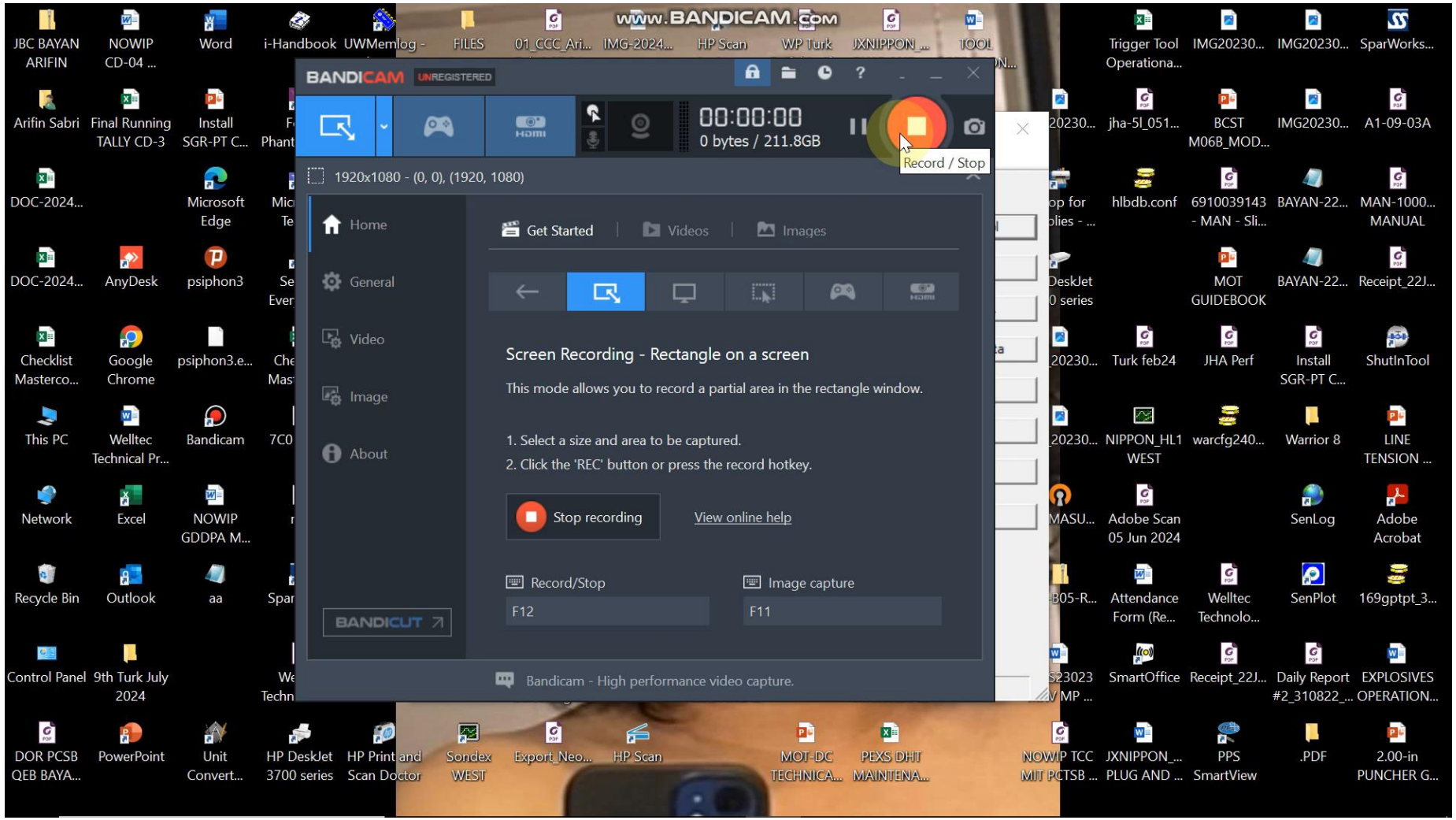
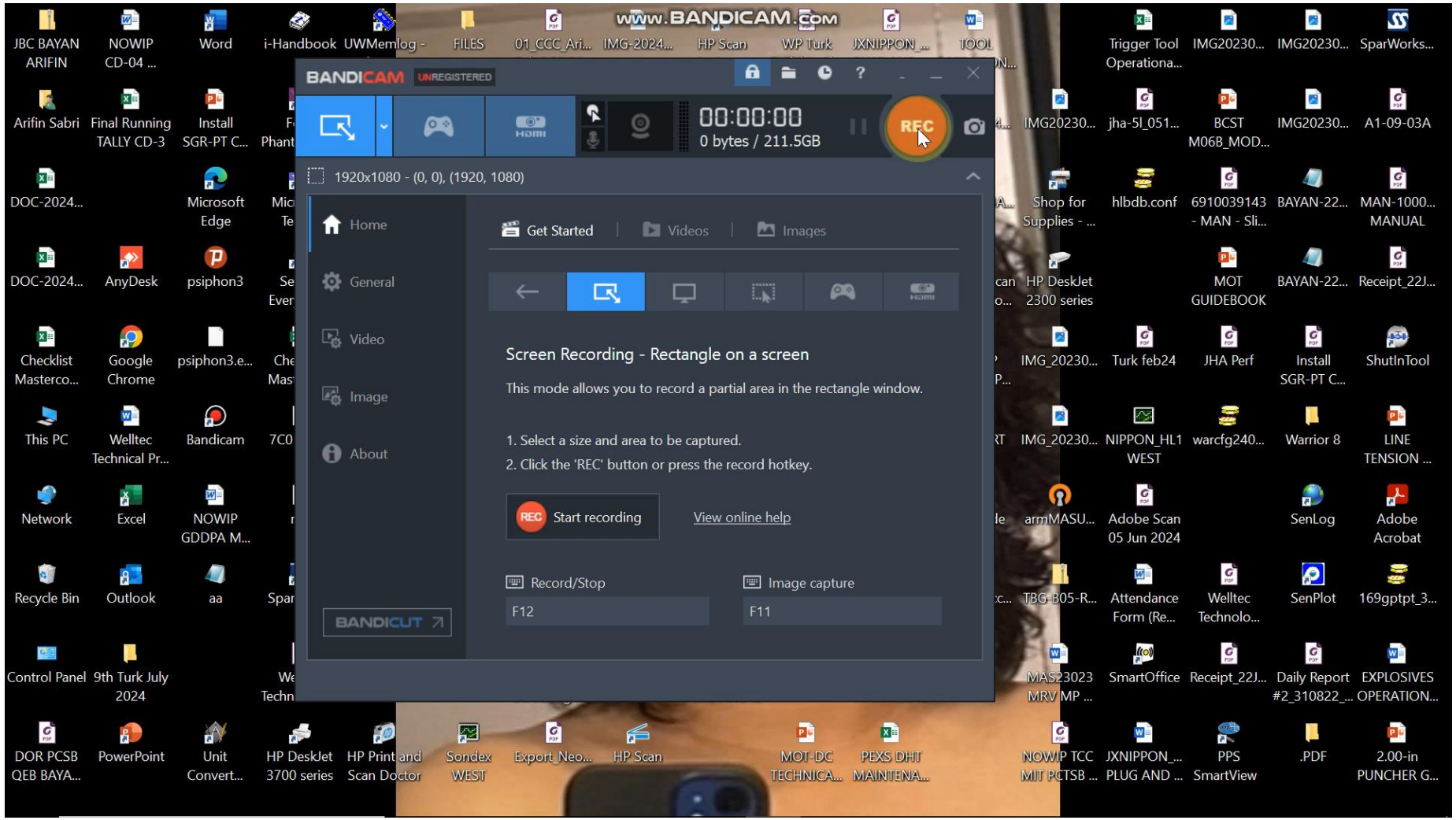


PROCESSING THE DATA

- TUTORIAL



PROCESSING THE DATA

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- **EXTRA NOTES**

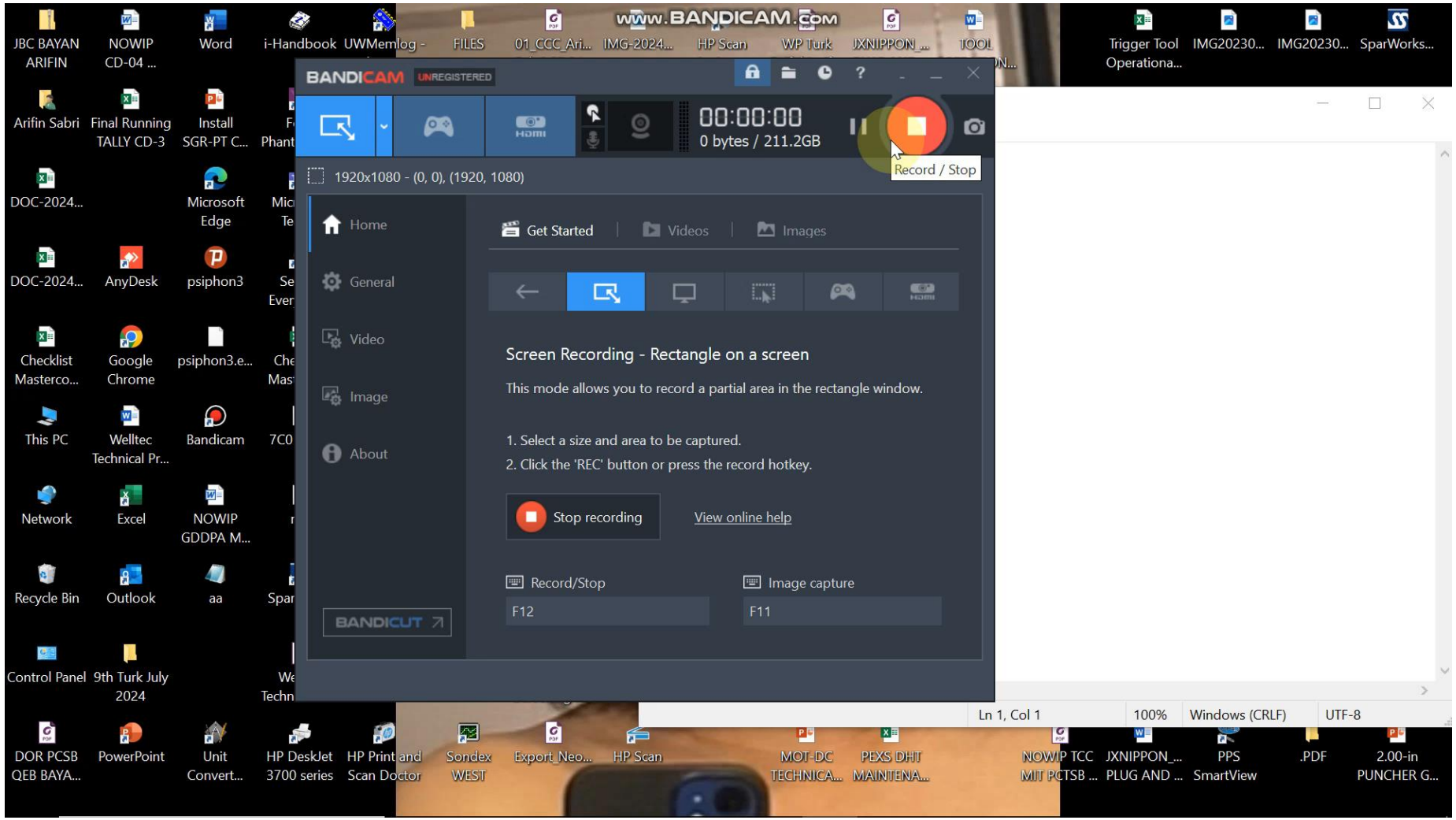
✓ Always use CCL and ACC to create the pass instead of the depth and speed data.

✓ 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

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- **TIGHTENING THE CFS**

PRE-JOB & POST-JOB PREPARATIONS

- **SERVICING THE ILS**

PRE-JOB & POST-JOB PREPARATIONS

- **SERVICING THE CFS**

REALTIME BENCH TEST

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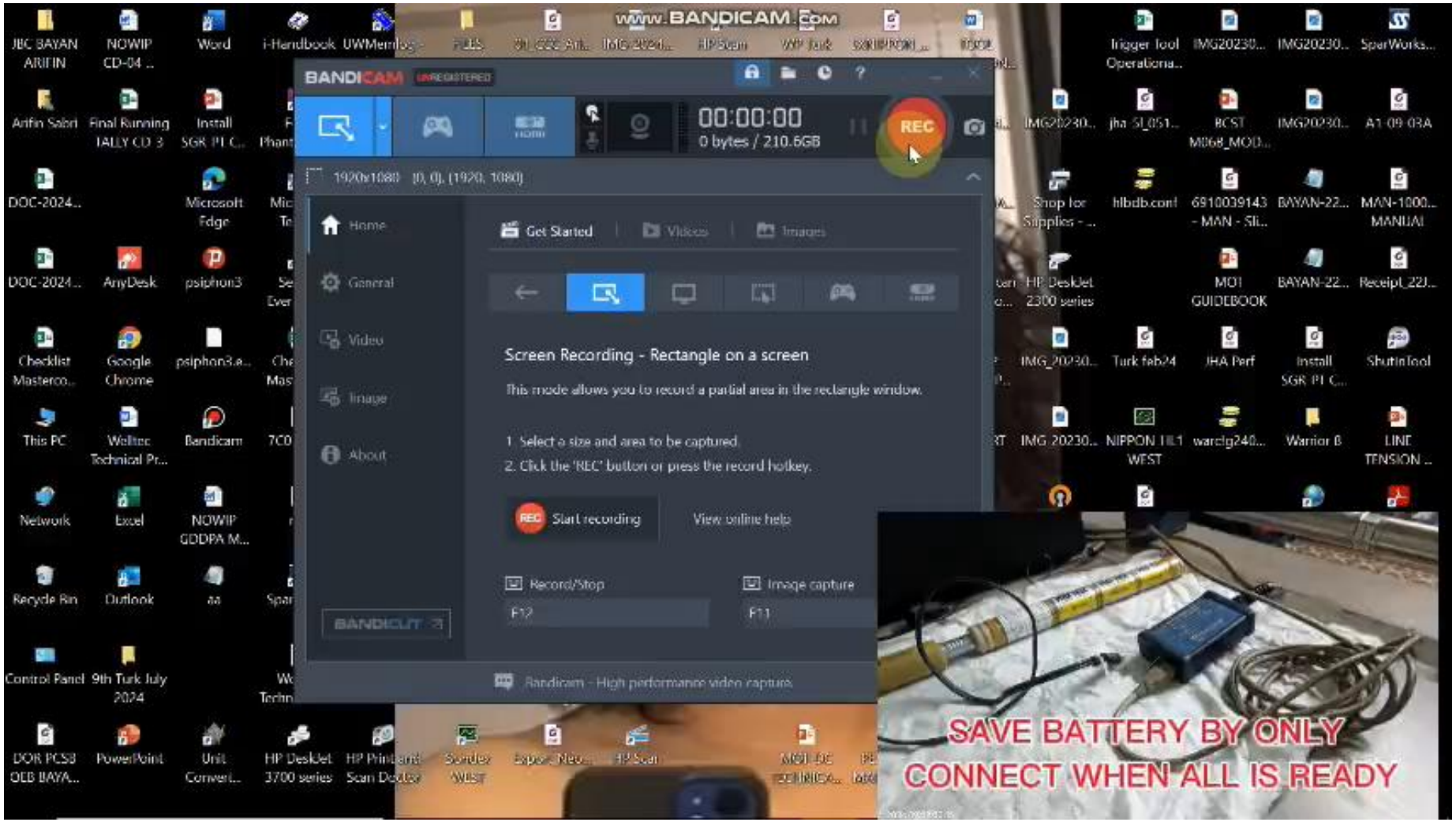

TROUBLESHOOTING PROCEDURES

- **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.*

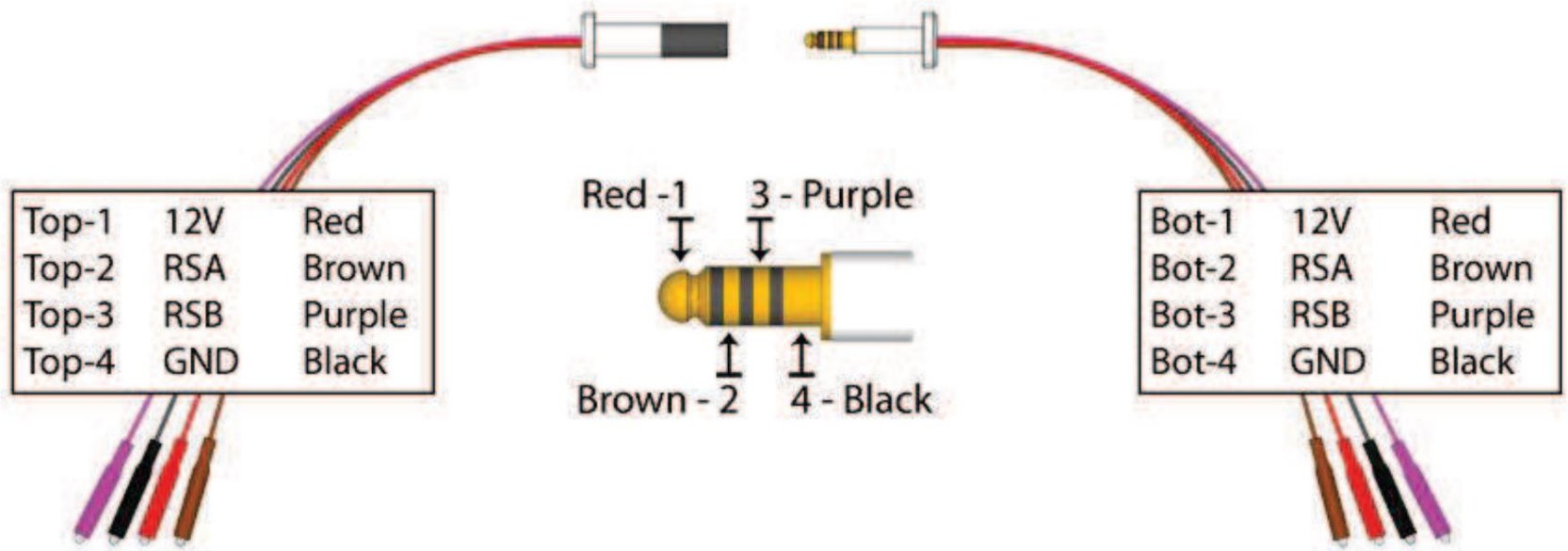

Figure 2 – Adapter Cable Pin Out

TROUBLESHOOTING PROCEDURES

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- **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

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- **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**

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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

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- **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

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- **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

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- **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

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- **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

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RESISTANCE CHECK ON PLT SPARTEK

PRESSURE/TEMPERATURE SENSOR (01036)

TOP 1	TOP 4	10.5M ohm	TOP 1	BOT 1	0.5 ohm
TOP 2	TOP 4	14.87k ohm	TOP 2	BOT 2	11.1 ohm
TOP 3	TOP 4	8.72k ohm	TOP 3	BOT 3	1.7M ohm
			TOP 4	BOT 4	0.7 ohm
BOT 1	BOT 4	10M ohm			
BOT 2	BOT 4	14.88k ohm			
BOT 3	BOT 4	5.40M ohm			

PRODUCTION GAMMA RAY (08159)

TOP 1	TOP 4	4.3M ohm	TOP 1	BOT 1	0.6 ohm
TOP 2	TOP 4	14.53k ohm	TOP 2	BOT 2	10.8 ohm
TOP 3	TOP 4	8.58k ohm	TOP 3	BOT 3	1.8M ohm
			TOP 4	BOT 4	0.5 ohm
BOT 1	BOT 4	4.66M ohm			
BOT 2	BOT 4	14.53k ohm			
BOT 3	BOT 4	4.51M ohm			

CAPACITANCE (18039)

TOP 1	TOP 4	6.5M ohm	TOP 1	BOT 1	0.6 ohm
TOP 2	TOP 4	14.34k ohm	TOP 2	BOT 2	10.8 ohm
TOP 3	TOP 4	8.48k ohm	TOP 3	BOT 3	1.7M ohm
			TOP 4	BOT 4	0.6 ohm
BOT 1	BOT 4	6.5M ohm			
BOT 2	BOT 4	14.35k ohm			
BOT 3	BOT 4	5.34M ohm			

CASING COLLAR LOCATOR (09052)

TOP 1	TOP 4	7.5M ohm	TOP 1	BOT 1	0.1 ohm
TOP 2	TOP 4	10.27k ohm	TOP 2	BOT 2	10.4 ohm
TOP 3	TOP 4	8.51k ohm	TOP 3	BOT 3	O/L
			TOP 4	BOT 4	0.3 ohm
BOT 1	BOT 4	10M ohm			
BOT 2	BOT 4	10.3k ohm			
BOT 3	BOT 4	O/L			

ACOUSTIC DENSITY (07039)

TOP 1	TOP 4	7.07M ohm	TOP 1	BOT 1	0.4 ohm
TOP 2	TOP 4	10.85k ohm	TOP 2	BOT 2	10.5 ohm
TOP 3	TOP 4	8.51k ohm	TOP 3	BOT 3	1.8M ohm
			TOP 4	BOT 4	0.5 ohm
BOT 1	BOT 4	7.5M ohm			
BOT 2	BOT 4	10.85k ohm			
BOT 3	BOT 4	5.04M ohm			

INLINE SPINNER (06058)

TOP 1	TOP 4	8.9M ohm	TOP 1	BOT 1	0.6 ohm
TOP 2	TOP 4	14.62k ohm	TOP 2	BOT 2	10.5 ohm
TOP 3	TOP 4	8.64k ohm	TOP 3	BOT 3	1.8 M ohm
			TOP 4	BOT 4	0.7 ohm
BOT 1	BOT 4	7.5M ohm			
BOT 2	BOT 4	14.62k ohm			
BOT 3	BOT 4	5.4M ohm			

Fullbore Spinner (04086)

TOP 1	TOP 4	5.5M ohm			
TOP 2	TOP 4	14.53k ohm			
TOP 3	TOP 4	8.67k 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

TOP 1	TOP 4	2.5 ohm	TOP 1	BOT 1	0.1 ohm
TOP 2	TOP 4	0.7M ohm	TOP 2	BOT 2	0.4M ohm
TOP 3	TOP 4	2.5 ohm	TOP 3	BOT 3	0.3M 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			

INLINE CENTRALIZER (6291)

TOP 1	TOP 4	6.2M ohm	TOP 1	BOT 1	0.6 ohm
TOP 2	TOP 4	14.28k ohm	TOP 2	BOT 2	10.5 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			

MEMORY CONTROLLER (02130)

BOT 1	BOT 4	72k ohm
BOT 2	BOT 4	5.94k ohm
BOT 3	BOT 4	4.24k ohm

FIG: HISTORY CHECK ON THE CONTINUITY VALUE