



*Lumistar Basic LDPS_10x
Building a Simple Project and
Displays - Lesson 2*

Presented by Wayne Rettig

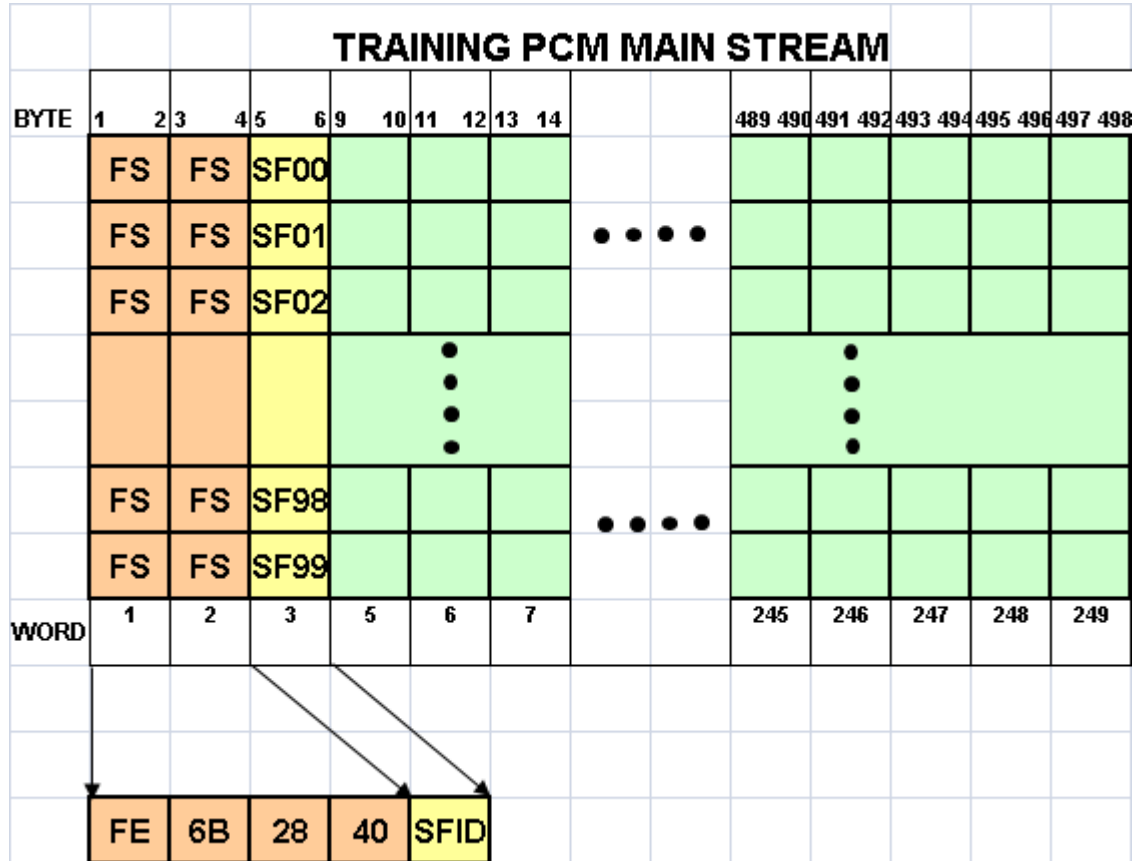
TRAINING FRAME CREATION

**LET'S DEFINE OUR OWN FRAME
AND SIMULATE IT**

TRAINING PCM FRAME DEFINITION:

Common Word Length: **16 bits**
Words per Minor frame: **249**
Bit Order: **MSB First**
Frame Sync Location: **Leading**
Subframe Mode: **SFID**
Minor Frame Count Direction: **UP**
First Minor Frame Number: **0**
Number of Minor Frames: **100**
SFID Word Number: **3**
SFID MSB: **6**
Frame Sync Pattern: **0xFE6B2840**

Simulator & Bit Sync Information
Bit Rate **2.369 Mbps**
Input Code: **NRZL**



LS50P2 Ver 3.26 SIMULATION

System Archive Debug

Stream	Mf	mF	Bs	Irig	Clock	Time
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.369 Mbps	036:09:53:45.502

S
 M
 F
 B

LS-50-P2 (Stream 1) Setup :: DEMO

File

IRIG 036:10:03:45.125 <input checked="" type="checkbox"/>	Dump	Load All	Load Decom
Major Frame LOCK <input checked="" type="checkbox"/>	Restart		Load Sim
Minor Frame LOCK <input checked="" type="checkbox"/>			Load Irig
Clock Rate 0.8192 Mbps	Flush Frame Buffers		Load Bit Sync
Bit Sync LOCK <input checked="" type="checkbox"/>			


Decom Simulator Bitsync IRIG

Word Attributes

Major Frame		Frame Sync <small>Brkr</small>	
Common Word Length	16	Pattern Length	32
Words Per Minor Frame	512	Pattern (hex)	FE6B2840
Bit Order	MSB FIRST	Pattern Mask (hex)	FFFFFFF
Frame Sync Location	LEADS	Slip	
Data Polarity	NORMAL	Window	0
Clock Polarity	NORMAL	Tolerance	1
Subframe Mode	SFID		

Minor Frame		Source / Dest	
Count Direction	UP	Frames Per Interrupt	32
Minor Frame Counts From	0	Data Source	MEZZANINE
Num Minor Frames	64	Output Alignment	RIGHT
SF ID Word Number	3	PCM Input Code	NRZL
SF ID Msb	5		

Msb Lsb



Moding

- G Mode
- Ext Sync
- Raw Data Mode
- Burst Mode
- Major Frame Mode
- FAC Enable

Click the **S** Button to bring up the LS-50P2 Control

Select **File>Recall**, then Double-Click **DEMO.SCS** To load a default DEMO PCM Setup

Load the **DEMO.SCS** and enter format info from previous slide

Click the Value and then to Edit, then update and Click **OK**

Input Range 3 - 16

Enter the Common Word Length

16

Some Entries will toggle through valid settings

Common Word Length: **16 bits**

Words per Minor frame: **249**

Bit Order: **MSB First**

Frame Sync Location: **Leading**

Data Polarity: **NORMAL**

Clock Polarity: **NORMAL**

Subframe Mode: **SFID**

Minor Frame Count Direction: **UP**

First Minor Frame Number: **0**

Number of Minor Frames: **100**

SFID Word Number: **3**

SFID MSB: **14**

*LS-50-P2 (Stream 1) Setup :: SIM_16_EMB1

File

IRIG 036:13:32:00.772	Dump	Load All	Not Loaded	Load Decom
Major Frame LOCK				Load Sim
Minor Frame LOCK				Load Irig
Clock Rate 0.00001 Mbps				Load Bit Sync
Bit Sync LOCK	Flush Frame Buffers			

Decom Simulator Bitsync IRIG

Word Attributes

Major Frame		Frame Sync Brkr	
Common Word Length	16	Pattern Length	32
Words Per Minor Frame	249	Pattern (hex)	FE6B2840
Bit Order	MSB FIRST	Pattern Mask (hex)	FFFFFFFF
Frame Sync Location	LEADS	Slip	
Data Polarity	NORMAL	Window	0
Clock Polarity	NORMAL	Tolerance	1
Subframe Mode	SFID		

Minor Frame		Source / Dest	
Count Direction	UP	Frames Per Interrupt	54
Minor Frame Counts From	0	Data Source	SIMULATOR
Num Minor Frames	100	Output Alignment	RIGHT
SFID Word Number	3	PCM Input Code	NRZL
SFID Msb	14		

Msb Lsb

15
0

Moding

G Mode

Ext Sync

Raw Data Mode

Burst Mode

Major Frame Mode

FAC Enable

Click the Value and then to Edit, then update and Click **OK**

Input Range 3 - 16

Enter the Common Word Length

Some Entries will toggle through valid settings

Frame Sync Length: **32 bits**

Frame Sync Pattern: **0xFE6B2840**

Data Source: **Simulator**

Click the **Load All** button

*LS-50-P2 (Stream 1) Setup :: SIM_16_EMB1

File

IRIG 036:10:41:01.967	<input type="checkbox"/>	Dump	Load All	Not Loaded	Load Decom
Major Frame LOCK	<input type="checkbox"/>	Restart			
Minor Frame LOCK	<input type="checkbox"/>				
Clock Rate 2.369 Mbps					
Bit Sync LOCK	<input type="checkbox"/>	Flush Frame Buffers	Load Sim		
		<input style="width: 100px;" type="button" value="Load Irig"/>			
		<input style="width: 100px;" type="button" value="Load Bit Sync"/>			

Decom Simulator Bitsync IRIG

Word Attributes

Major Frame		Frame Sync Brkr	
Common Word Length	16	Pattern Length	32
Words Per Minor Frame	249	Pattern (hex)	FE6B2840
Bit Order	MSB-FIRST	Pattern Mask (hex)	FFFFFFF
Frame Sync Location	LEADS	Slip	
Data Polarity	NORMAL	Window	0
Clock Polarity	NORMAL	Tolerance	1
Subframe Mode	SFID		

Minor Frame		Source / Dest	
Count Direction	UP	Frames Per Interrupt	54
Minor Frame Counts From	0	Data Source	SIMULATOR
Num Minor Frames	100	Output Alignment	RIGHT
SF ID Word Number	3	PCM Input Code	NRZL
SF ID Msb	14		
Msb Lsb <div style="border: 1px solid gray; width: 100%; height: 15px; position: relative;"> 15 0 </div>			

Moding

G Mode

Ext Sync

Raw Data Mode

Burst Mode

Major Frame Mode

FAC Enable

Fill in the new Simulation format:

Ensure **Track Decom** is Checked

Fill in the **Dynamic Words** as shown:

Fill in the **Unique Words** as shown:

Bit Rate **2.369E6 Mbps**

Input Code: **NRZL**

Track Decom CheckBox must be checked

Then click the **Load Simulator** button

Decom
Simulator
Bitsync
IRIG

Major Frame

Common Word Length: 16

Words Per Minor Frame: 256

Bit Order: MSB FIRST

Frame Sync Location: LEADS

Subframe Mode: SFID

Minor Frame

Count Direction: UP

Minor Frame Counts From: 0

Num Minor Frames: 100

SF ID Word Number: 3

SF ID Msb: 14

Msb Lsb

Output Control

Bit Rate (bps): 2.369 Mbps

Output Code: NRZL

External Clock:

Convolution: NONE

Pre Mod Filter: Pre Mod 0 kHz

BaseBand 0.000 Vpp

Word Attributes

Track Decom

Frame Sync: Brkr Stop

Pattern (hex): FE6B2840

Pattern Length: 32

Dynamic Words

	Wd Start	Wd Intvl	Wave Form
1	4	0	SINE
2	5	0	COSINE
3	6	0	SQUARE
4	7	0	TRIANGLE
5	8	0	RAMPUP

Unique Words

Hex

	Frame	Fr Intvl	Word	Wd Intvl	Value
0	0	0	9	0	48879
1	0	0	10	0	48879
2	0	0	11	0	48879
3	0	0	12	0	48879
4	0	0	13	0	48879
5	0	0	14	0	48879
6	0	0	15	0	48879

7

Note: The asterisk '*' indicates that this configuration hasn't been save yet

Bit Rate: **2.369E6 Mbps**

Using Right-Clicking and fill in the new format:

Bit Sync information

Bit Rate **1.1 Mbps**

Input Source: **SIMULATOR (J1-9)**

Input Code: **NRZL**

Then click the **Load All** Button

*LS-50-P2 (Stream 1) Setup :: SIM_16_EMB1

File

IRIG 036:13:35:35.478	<input type="checkbox"/>	Dump	Load All	Load Decom
Major Frame LOCK	<input type="checkbox"/>		Not Loaded	Load Sim
Minor Frame LOCK	<input type="checkbox"/>			Load Irig
Clock Rate 0.00001 Mbps				Load Bit Sync
Bit Sync LOCK	<input type="checkbox"/>	Flush Frame Buffers	Not Loaded	

Decom Simulator Bitsync IRIG

View Extended Functions

Bit Rate	2.368 Mbps
Input Source	SIMULATOR (J1-9)
Input Code	NRZL
Loop Width	0.2
Filter Method	NONE
Output Code	NRZL
90 Deg Clk Out	<input type="checkbox"/>

Detector Confidence

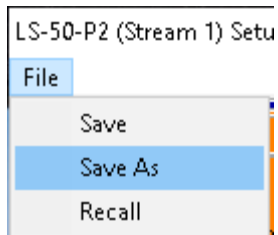
0 %

Transition Density

0 %

Save the new PCM format:
From the Stream 1 Control Window select:

File>Save As:



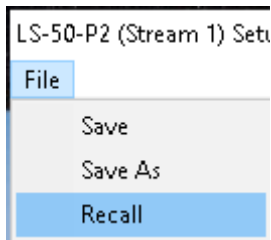
Type **TRAINING.SCS** in the File Name
TextBox,



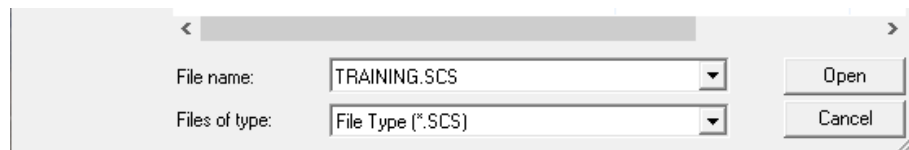
Then Click **SAVE**

Next, **Recall** the **TRAINING.SCS** file just
saved. Go to the **LS-50-P2 (Stream1) Setup**
and select:

File>Recall:

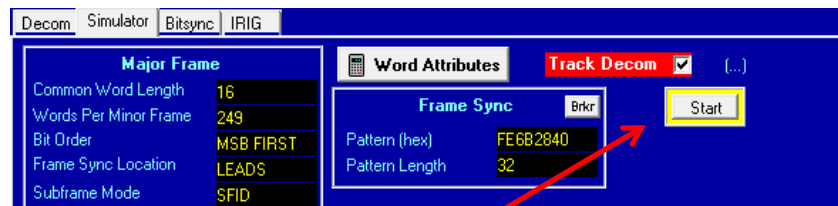


Select the **TRAINING.SCS** configuration file:

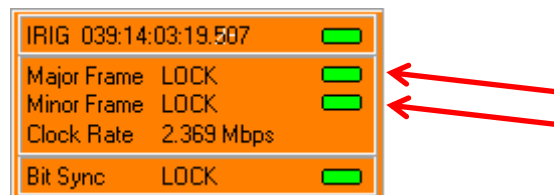


Click the **Open** Button.

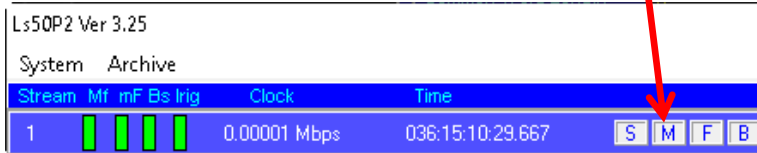
Select the **Simulator** Tab, then Click the **Start**
Button to **Start** the **Simulator**.



You should now see **Major** and **Minor Frame** Locks



Display the LS50P2 CVT by Clicking the **M** Button on the **LS50P2** Control:



We find that configuring for a Frame Rate of ≤ 60 Hz optimal for all OSs. The Rule of thumb is to divide the **Minor Frame Rate** by **60** and round up to the next odd number.

MfDump Ver 2.2 LS50P2 Stream 1 039:15:18:05.969

Hardcopy Snap File

TimeTag Frame Sync SFID Data

Setup Info				Status Info				Analysis Info			
Cwl	16	Sfld Word	3	FPI	32	Data Valid	YES	Minor Fr Rate	594.6	Frames Lost	0x79609DC2
Wpf	249	Sfld Msb	14			Drdy Counter	0x00020920	Major Fr Rate	5.9	<input type="button" value="Reset"/>	<input type="button" value="Analysis"/>
Num Sf	100	Sfld Start	0			Time	039:15:18:06.341246	FPI Rate	18.6		

Hex	Pause	Clear	Hex	Pause	Flush	Reverse Bits									
			Time	Sfld	Mf	mF	Q	1	2	3	4	5	6	7	8
			039:15:18:06.002022	0	1	1	--	FE6B	2840	0000	7FFF	FFFF	4000	0000	0
			039:15:18:06.003708	1	1	1	--	FE6B	2840	0100	8809	FFBF	4000	051E	0
			039:15:18:06.005396	2	1	1	--	FE6B	2840	0200	900A	FEFD	4000	0A3C	0
			039:15:18:06.007082	3	1	1	--	FE6B	2840	0300	97FB	FD8B	4000	0F5A	0
			039:15:18:06.008769	4	1	1	--	FE6B	2840	0400	9FD4	FBFA	4000	1478	1
			039:15:18:06.010455	5	1	1	--	FE6B	2840	0500	A78D	F9BC	4000	1996	1
			039:15:18:06.012141	6	1	1	--	FE6B	2840	0600	AF1E	F702	4000	1EB4	1
			039:15:18:06.013827	7	1	1	--	FE6B	2840	0700	B67F	F3D1	4000	23D2	2
			039:15:18:06.015513	8	1	1	--	FE6B	2840	0800	BDA9	F02A	4000	28F0	2

From the above numbers, we get $594.6/60 = 9.91 \rightarrow 11$.

From the Decom Tab, set **Frames Per Interrupt** to **11**,

Source / Dest	
Frames Per Interrupt	11
Data Source	SIMULATOR
Output Alignment	RIGHT
PCM Input Code	NRZL

Click the **Load All** Button

then **Files>Save AS** to **TRAINING.SCS**

Now the FPI Rate should be below **60 Hz**

MfDump Ver 2.2 LS50P2 Stream 1 039:15:53:20.735

Hardcopy Snap File

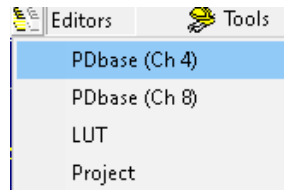
Tim eTag
 Frame Sync
 SFD
 Data

Setup Info				Status Info				Analysis Info			
Cwl	16	Sfld Word	3	Data Valid	YES █	Minor Fr Rate	594.6	Frames Lost	0x7974107B		
Wpf	249	Sfld Msb	14	Drdy Counter	0x000064F1	Major Fr Rate	5.9	<input type="button" value="Reset"/> <input type="button" value="Analysis"/>			
Num Sf	100	Sfld Start	0	Time	039:15:53:20.873886	FPI Rate	54.1				

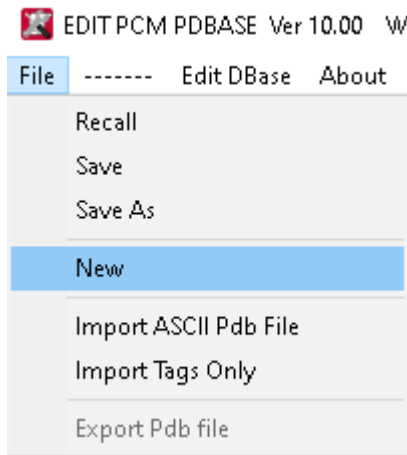
Hex	Pause	Clear	Hex	Pause	Flush	Reverse Bits									
			Time	Sfld	MF	mF	Q	1	2	3	4	5	6	7	8
			039:15:53:20.880613	0	1	1	--	FE6B	2840	0000	7FFF	FFFF	4000	0000	0
			039:15:53:20.882295	1	1	1	--	FE6B	2840	0100	8809	FFBF	4000	051E	0
			039:15:53:20.883977	2	1	1	--	FE6B	2840	0200	900A	FEFD	4000	0A3C	0
			039:15:53:20.885658	3	1	1	--	FE6B	2840	0300	97FB	FDBB	4000	0F5A	0
			039:15:53:20.887340	4	1	1	--	FE6B	2840	0400	9FD4	FBFA	4000	1478	1
			039:15:53:20.889022	5	1	1	--	FE6B	2840	0500	A78D	F9BC	4000	1996	1
			039:15:53:20.890703	6	1	1	--	FE6B	2840	0600	AF1E	F702	4000	1EB4	1
			039:15:53:20.892877	7	1	1	--	FE6B	2840	0700	B67F	F3D1	4000	23D2	2
			039:15:53:20.894559	8	1	1	--	FE6B	2840	0800	BDA9	F02A	4000	28F0	2

We will make a new Parameter Database (PDB) for this PCM Format. To do this we will start with the supplied **DEMO.PRJ** which already has parameters defined in **LDPS_10x_Training_Lesson-1.pdf**.

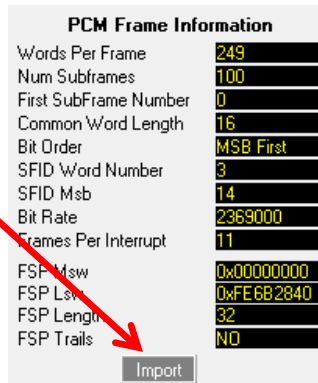
From the **LDPS Server Control Banner**, Select **Editors>Project**:



From the **Edit PCM PDBASE Banner**, Select: **New**

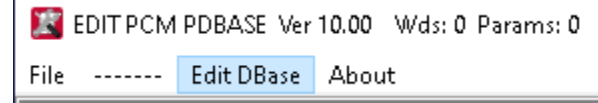


In the **PDM Frame Information Window**, Click the **Import** Button,

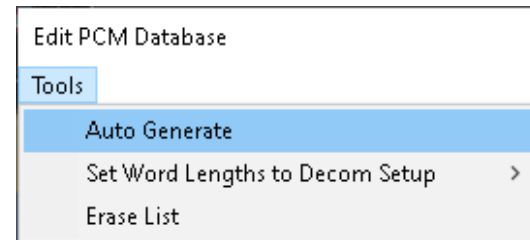


Then Select and Open **TRAINING.SCS**.

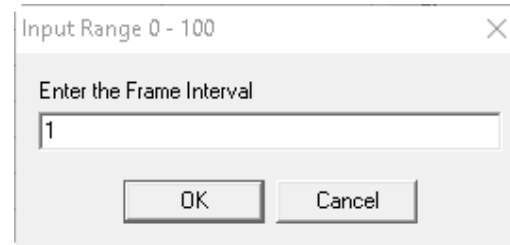
From the **Edit PCM PDBASE Banner** Select **Edit Dbase**:



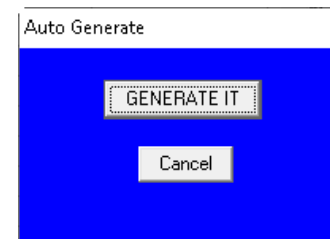
From the **Edit PCM Database Banner**, select **Tools>Auto Generate**:



Set the value to **1**:



Click **OK**



Click **Generate IT**

This has filled the Pdatabase with basic parameters

*Edit PCM Database

Tools

Frame Selected 0 Word Count 249 Param Count 249

Word Selected 1

Word Name Selected

Param Sort Word Sort Hardware Sort

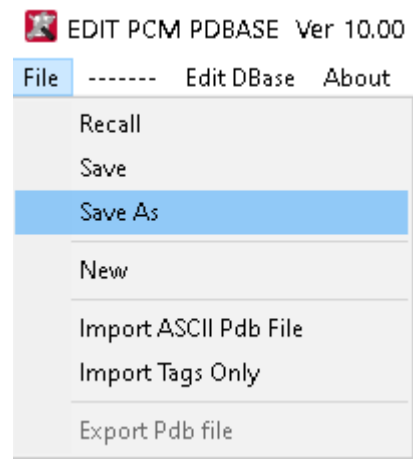
CVT

Frame v	Word >	1	2	3	
0		FR0WD1	FR0WD2	FR0WD3	
1		(0,1)	(0,2)	(0,3)	
2		(0,1)	(0,2)	(0,3)	
3		(0,1)	(0,2)	(0,3)	
4		(0,1)	(0,2)	(0,3)	
5		(0,1)	(0,2)	(0,3)	
6		(0,1)	(0,2)	(0,3)	
7		(0,1)	(0,2)	(0,3)	
8		(0,1)	(0,2)	(0,3)	
9		(0,1)	(0,2)	(0,3)	
10		(0,1)	(0,2)	(0,3)	
11		(0,1)	(0,2)	(0,3)	
12		(0,1)	(0,2)	(0,3)	
13		(0,1)	(0,2)	(0,3)	
14		(0,1)	(0,2)	(0,3)	
15		(0,1)	(0,2)	(0,3)	
16		(0,1)	(0,2)	(0,3)	
17		(0,1)	(0,2)	(0,3)	

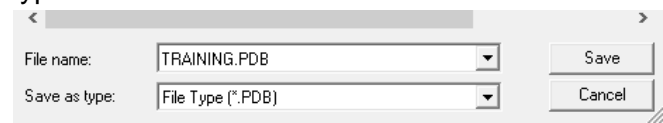
Param Name	Word Name	Frm	Wd	Frnt	WdInt
FR0WD1	FR0WD1	0	1	1	0
FR0WD10	FR0WD10	0	10	1	0
FR0WD100	FR0WD100	0	100	1	0
FR0WD101	FR0WD101	0	101	1	0
FR0WD102	FR0WD102	0	102	1	0
FR0WD103	FR0WD103	0	103	1	0
FR0WD104	FR0WD104	0	104	1	0
FR0WD105	FR0WD105	0	105	1	0
FR0WD106	FR0WD106	0	106	1	0
FR0WD107	FR0WD107	0	107	1	0
FR0WD108	FR0WD108	0	108	1	0
FR0WD109	FR0WD109	0	109	1	0
FR0WD11	FR0WD11	0	11	1	0
FR0WD110	FR0WD110	0	110	1	0
FR0WD111	FR0WD111	0	111	1	0
FR0WD112	FR0WD112	0	112	1	0
FR0WD113	FR0WD113	0	113	1	0
FR0WD114	FR0WD114	0	114	1	0
FR0WD115	FR0WD115	0	115	1	0
FR0WD116	FR0WD116	0	116	1	0
FR0WD117	FR0WD117	0	117	1	0

OK Cancel

From the **EDIT PCM PDBASE** Banner Select **File>Save As**



Type: **TRAINING.PDB**



Then Click OK.

EDIT PCM PDBASE Ver 10.00 TRAINING Wds: 244 Params: 269

File Edit DBase About

PDBase Information	
Type PDBase	PCM
File Name	TRAINING
Num Words	244
Num Parameters	269

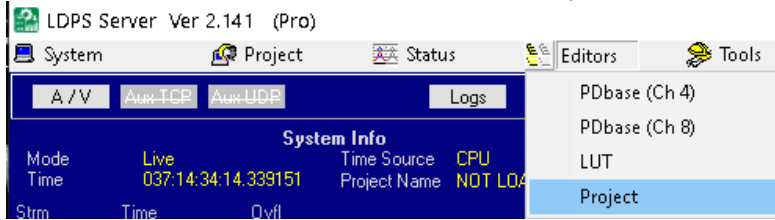
Database Origination Notes

PCM Frame Information	
Words Per Frame	249
Num Subframes	100
First SubFrame Number	0
Common Word Length	16
Bit Order	MSB First
SFID Word Number	3
SFID Msb	14
Bit Rate	2369000
Frames Per Interrupt	11
FSP Msw	0x00000000
FSP Lsw	0xFE6B2840
FSP Length	32
FSP Trails	NO

Import

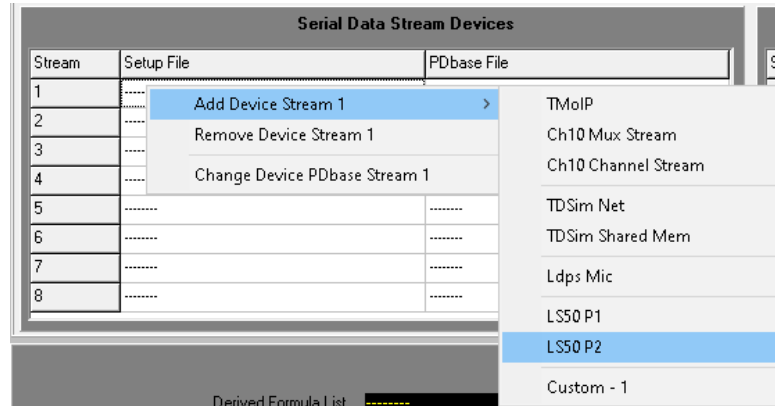
Advanced Stream Information	
Client Soft Decom Name	NOT USED
Client Soft Setup File	NOT USED
	[Edit S/D Setup]
Number of Emb Streams	0
Has Emb Audio	NO
Has Emb Video	NO
Has Emb Time	NO
Lookup Table Name	DEMO
Stale Ref Rate (Hz)	0
CVT Words Per Frame	249
CVT Num Subframes	100
Server Soft Decom Name	NOT USED

In the **Server Banner**, select: **Editors>Project**

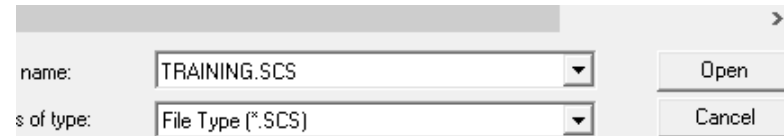


Right-Click in the **Serial Data Stream Cards**

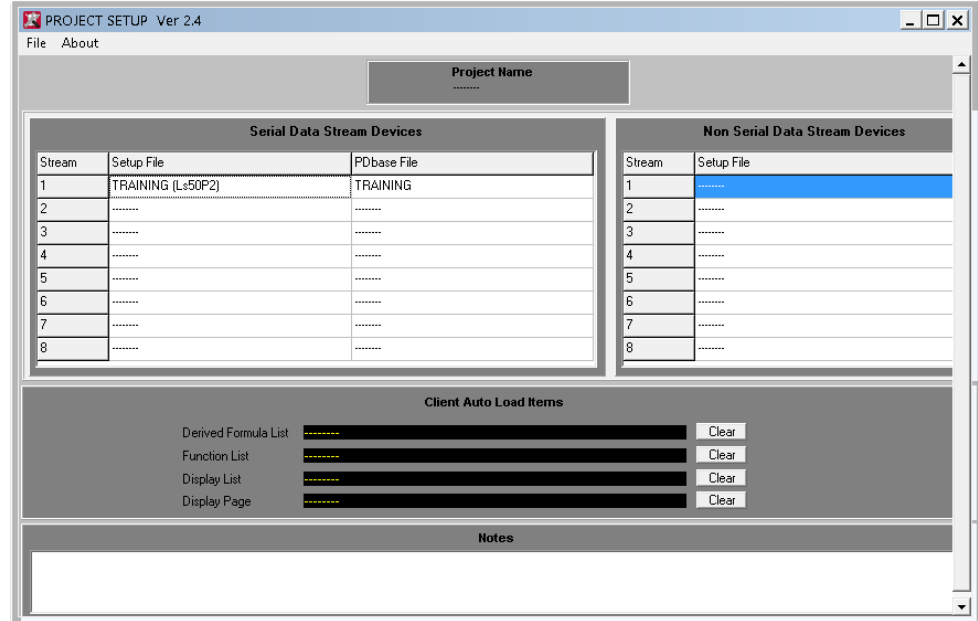
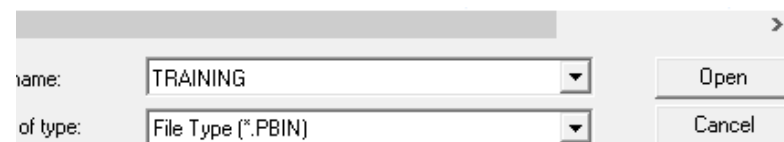
Section for Card 1: Select **Add Card> LS50 P2**



Open **TRAINING.SCS**

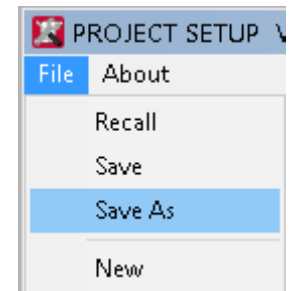


Open **TRAINING.PBIN**



From the **PROJECT SETUP** Banner, Select

File>Save As:



TRAINING.PRJ



At this point, you have enough information to record your basic PCM stream using the onboard Simulator and you can even replay the data:

From the **Server** select **Project>Load: TRAINING.PRJ**

You can now Click **Record** Button to archive some of the simulated data.

The **Data Space Remaining** display will decrease with time

Click the **Record** button again to stop recording.

Close the Loaded Project from the Server
Project>Close



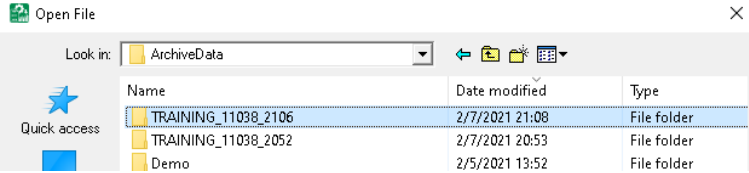
The screenshots show the following steps:

- Initial State:** The interface shows 'Mode: Live', 'Time: 038:20:13:31.217100', 'Time Source: CPU', and 'Project Name: NOT LOADED'. The 'Project' menu is open, and the 'Load' option is highlighted.
- Project Loaded:** After selecting 'Load', the interface shows 'Time: 038:20:52:54.534919', 'Time Source: Ls50P2 Card1', and 'Project Name: TRAINING'. The 'Record' button is highlighted.
- Recording:** The interface shows 'RECORDING' in green. The 'Record' button is highlighted. The 'Archive File Name' is 'TRAINING' and 'Disk Space Remaining' is '279181.4 MB'.
- Project Closed:** After clicking 'Record', the interface shows 'OFF' in green. The 'Record' button is highlighted. The 'Archive File Name' is 'TRAINING' and 'Disk Space Remaining' is '279397.5 MB'.

Put the **Server** in the **Playback** mode:

Select: **System>Mode>Playback**

Select **TRAINING_11038_2106_11038_2106** will differ, then Click **OPEN**:



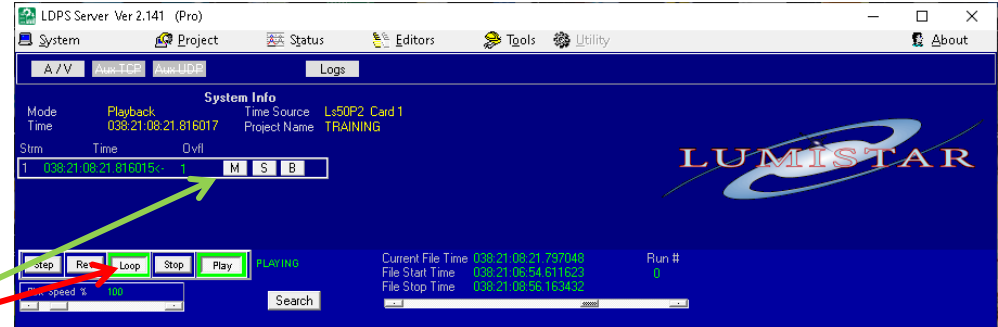
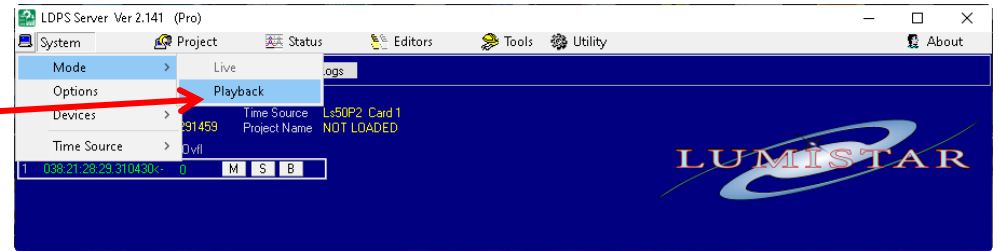
Double-click **TRAINING.PRJ**



Click the **Open** Button

Click the **Loop** Button

To display the Major Frame Buffer (CVT) Click the **M** Button



MF Decom (Ls50P2) Card 1 Serial Data

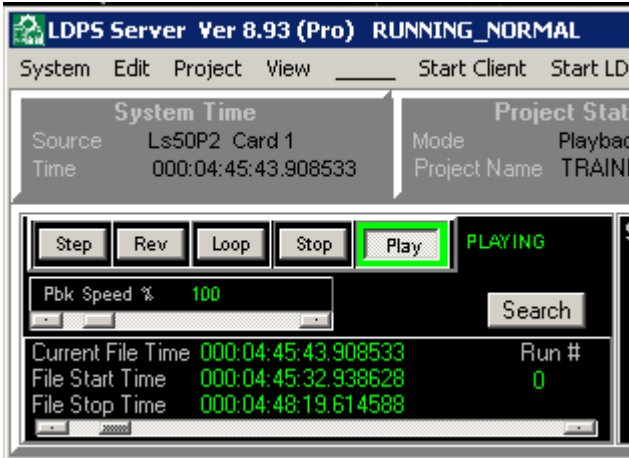
File Frame List Quick List Hardcopy Snap File

Setup info				Status Info			
Cwl	16	Sfld Word	3	Minor Fr Rate	276.1	Data Valid	YES
Wpfl	249	Sfld Msb	14	FPI	5	Dry Counter	0x0002AB89
Num Sf	100	Sfld Start	0	Card Mode	0	Time	000.02:17:10.294910
				Frames Lost	0x00000000	Reset Counter	
				Analysis			

Pause	Flush Buffer					
	T1	T2	T3	T4	S1	
0	0020	1702	3310	7283	7000	FE68 2840 0000 7FFF FFFF 4000
1	0020	1702	3410	9419	7001	FE68 2840 0100 8809 FFBF 4000
2	0020	1702	3410	1656	7002	FE68 2840 0200 900A FEFD 4000
3	0020	1702	9809	5570	7003	FE68 2840 0300 97FB FDBB 4000
4	0020	1702	9909	7706	7004	FE68 2840 0400 9FD4 FBFA 4000
5	0020	1702	9909	9842	7005	FE68 2840 0500 A78D F9BC 4000
6	0020	1702	9909	2079	7006	FE68 2840 0600 AF1E F702 4000
7	0020	1702	0010	4215	7007	FE68 2840 0700 B67F F3D1 4000
8	0020	1702	0010	6451	7008	FE68 2840 0800 BDA9 F02A 4000
9	0020	1702	0010	8687	7009	FE68 2840 0900 C495 EC12 4000
10	0020	1702	0110	0824	700A	FE68 2840 0A00 CB3C E78D 4000
11	0020	1702	0110	2960	700B	FE68 2840 0B00 D196 E2AD 4000
12	0020	1702	0110	5196	700C	FE68 2840 0C00 D79F DD4E 4000
13	0020	1702	0210	7332	700D	FE68 2840 0D00 DD4E D79F 4000
14	0020	1702	0210	9568	700E	FE68 2840 0E00 E29F D196 4000
15	0020	1702	0310	1705	700F	FE68 2840 0F00 E78D CB3C 4000
16	0020	1702	0310	3941	7010	FE68 2840 1000 EC12 C495 4000

Click **Flush Buffer** to clear out stale data

Click the **Play** Button on the **Server Control**

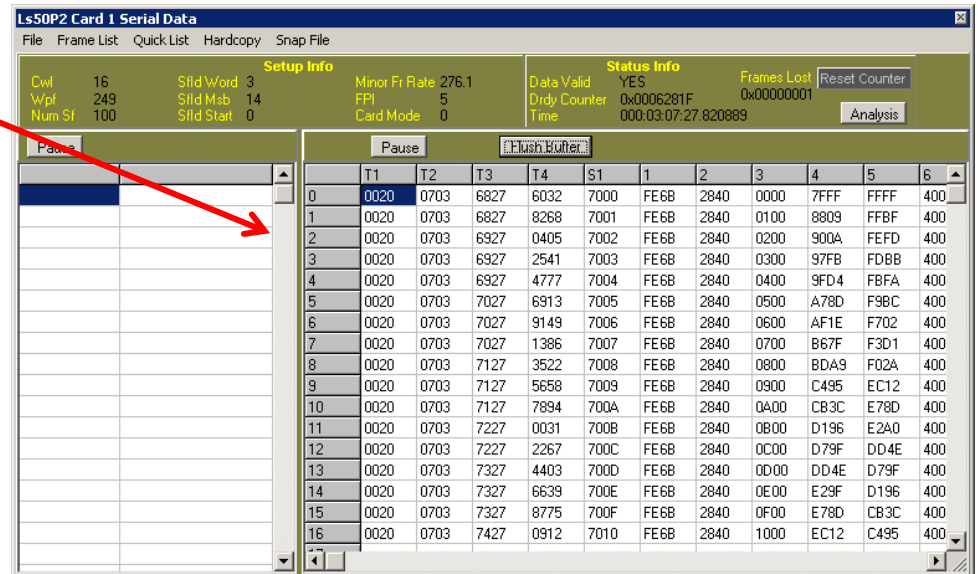
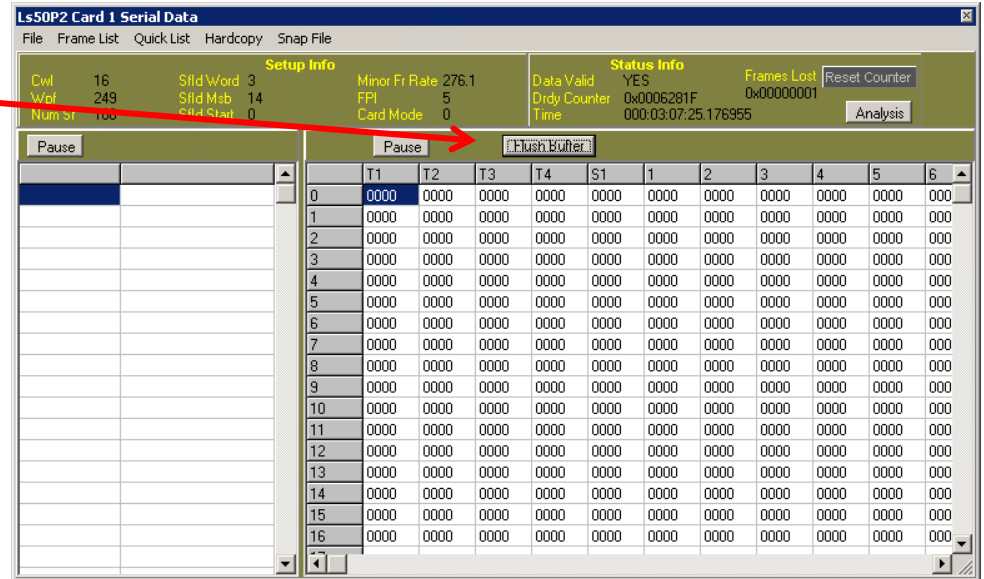


You will see data playing through the Serial Data Frame Buffer.

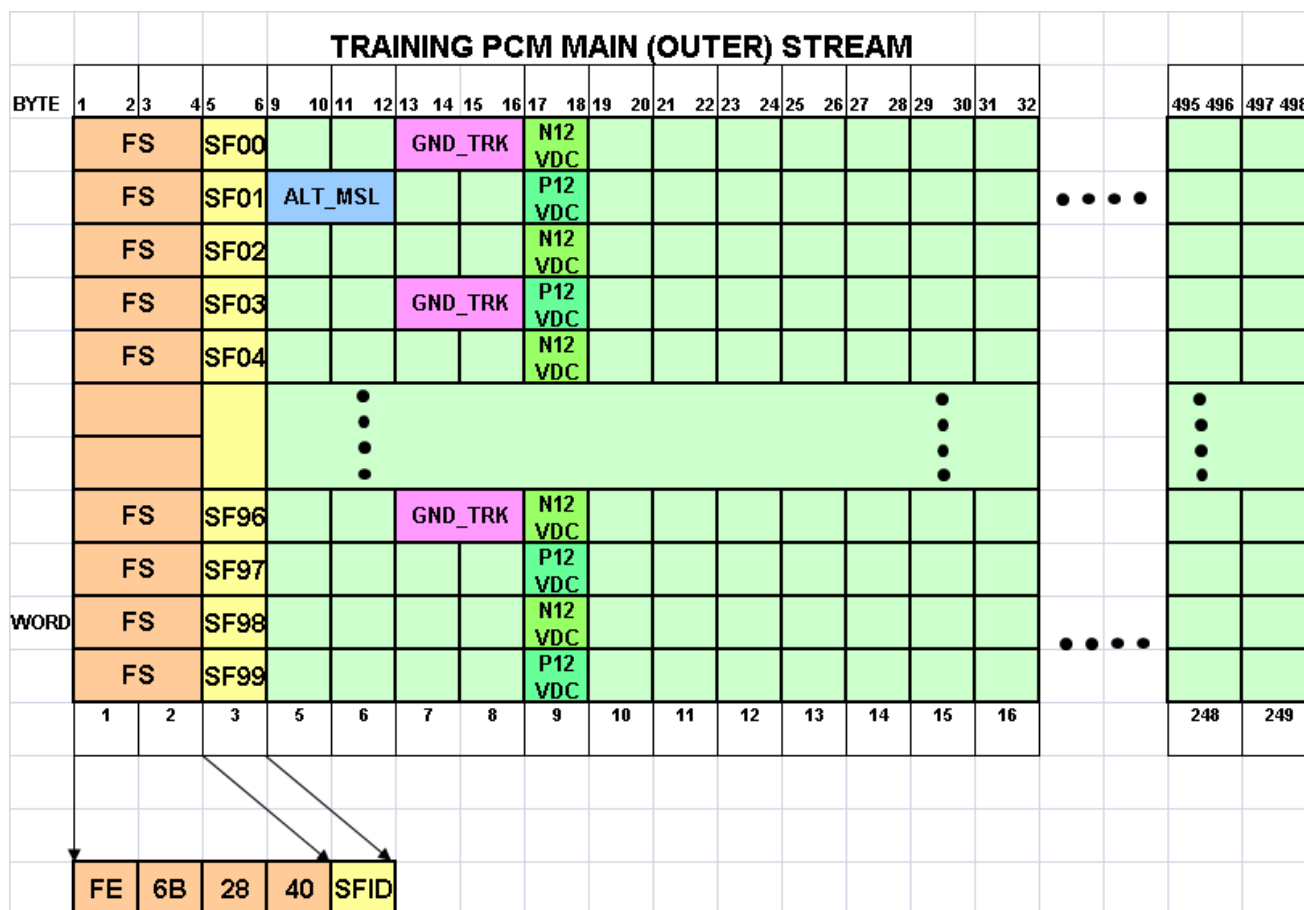
You can **Loop, Stop, Reverse & Stop** the data.

You can Slow it down, speed it up, move through the data with the Scroll control.

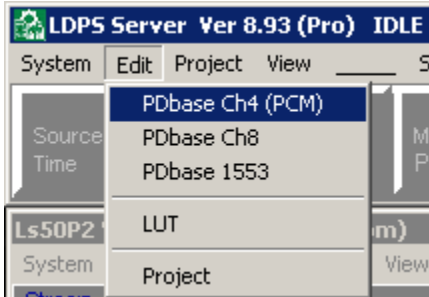
You can search for a time in the data, etc.



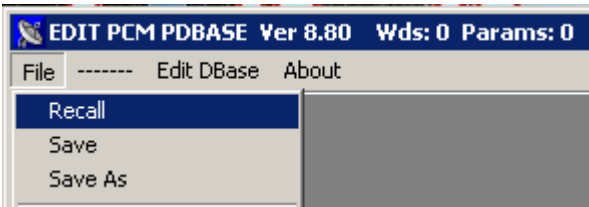
Variable Name	Description	Type (Size)	Bias	Scale	Scale Units	Frame Start	Frame Interval	Word Start	Word Interval	Starting Bit
FS	BARKER CODE	INT_U (32 bits)	0.000000E+00	1.000000E+00		0	1	1	0	15
SFID	SUBFRAME ID	INT_U (8 bits)	0.000000E+00	1.000000E+00		0	1	3	0	15 8
ALT_MSL	ALTITUDE MSL	FLOAT (32 bits)	0.000000E+00	3.280840E+00	FT	2	0	5	0	15
GND_TRK	GROUND TRACK ANGLE	FLOAT (32 bits)	0.000000E+00	5.729578E+01	DEG	0	4	7	0	15
N12VDC	-12VDC	INT_U (8 bits)	0.000000E+00	1.111000E-01	VOLT	0	2	9	0	7 0
P12VDC	+12VDC	INT_U (8 bits)	0.000000E+00	1.111000E-01	VOLT	1	2	9	0	15 8



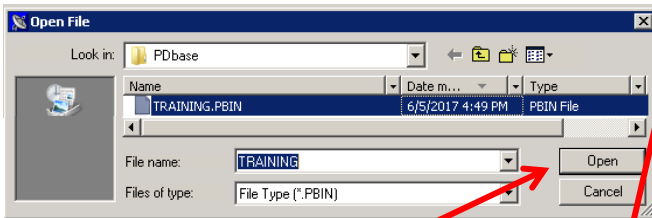
In the **Server Banner**, select: **Edit>PDBase Ch4 (PCM)**



Recall the Training database
Select **File>Recall**,



Select: **TRAINING.PBIN**



Click the **Open Button**

Click **Edit DBase**

EDIT PCM PDBASE Ver 10.00 TRAINING Wds: 244 Params: 269

File ----- Edit DBase About

PDBase Information	
Type PDBase	PCM
File Name	TRAINING
Num Words	244
Num Parameters	269

Database Origination Notes

PCM Frame Information	
Words Per Frame	249
Num Subframes	100
First SubFrame Number	0
Common Word Length	16
Bit Order	MSB First
SFD Word Number	3
SFD Msb	14
Bit Rate	2369000
Frames Per Interrupt	11
FSP Msw	0x00000000
FSP Lsw	0xFE6B2840
FSP Length	32
FSP Trails	NO

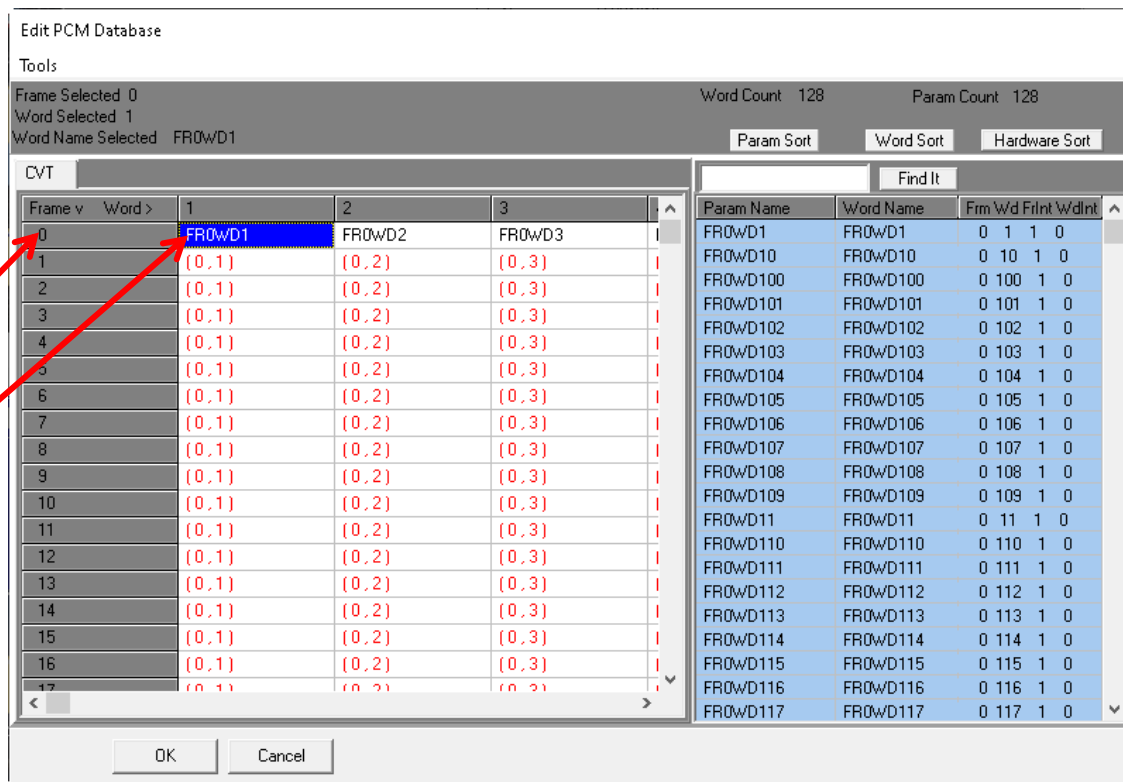
Import

Advanced Stream Information	
Client Soft Decom Name	NOT USED
Client Soft Setup File	NOT USED
	Edit S/D Setup
Number of Emb Streams	0
Has Emb Audio	NO
Has Emb Video	NO
Has Emb Time	NO
Lookup Table Name	DEMO
Stale Ref Rate (Hz)	0
CVT Words Per Frame	249
CVT Num Subframes	100
Server Soft Decom Name	NOT USED

On the **EDIT PCM Database** Window,

Starting with the definition of **FS**

Variable Name	FS
Description	BARKER CODE
Type (Size)	INT_U (32 bits)
Bias	0.000000E+00
Scale	1.000000E+00
Scale Units	
Frame Start	0
Frame Interval	1
Word Start	1
Word Interval	0
Starting Bit	15



Tools

Frame Selected 0 Word Count 128 Param Count 128

Word Selected 1

Word Name Selected FR0WD1

Param Sort Word Sort Hardware Sort

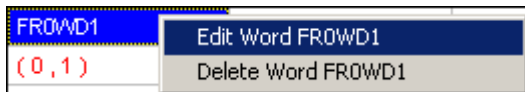
Frame v	Word >	1	2	3
0		FR0WD1	FR0WD2	FR0WD3
1		(0,1)	(0,2)	(0,3)
2		(0,1)	(0,2)	(0,3)
3		(0,1)	(0,2)	(0,3)
4		(0,1)	(0,2)	(0,3)
5		(0,1)	(0,2)	(0,3)
6		(0,1)	(0,2)	(0,3)
7		(0,1)	(0,2)	(0,3)
8		(0,1)	(0,2)	(0,3)
9		(0,1)	(0,2)	(0,3)
10		(0,1)	(0,2)	(0,3)
11		(0,1)	(0,2)	(0,3)
12		(0,1)	(0,2)	(0,3)
13		(0,1)	(0,2)	(0,3)
14		(0,1)	(0,2)	(0,3)
15		(0,1)	(0,2)	(0,3)
16		(0,1)	(0,2)	(0,3)
17		(0,1)	(0,2)	(0,3)

Param Name	Word Name	Frm	W/d	Frnt	W/dInt
FR0WD1	FR0WD1	0	1	1	0
FR0WD10	FR0WD10	0	10	1	0
FR0WD100	FR0WD100	0	100	1	0
FR0WD101	FR0WD101	0	101	1	0
FR0WD102	FR0WD102	0	102	1	0
FR0WD103	FR0WD103	0	103	1	0
FR0WD104	FR0WD104	0	104	1	0
FR0WD105	FR0WD105	0	105	1	0
FR0WD106	FR0WD106	0	106	1	0
FR0WD107	FR0WD107	0	107	1	0
FR0WD108	FR0WD108	0	108	1	0
FR0WD109	FR0WD109	0	109	1	0
FR0WD11	FR0WD11	0	11	1	0
FR0WD110	FR0WD110	0	110	1	0
FR0WD111	FR0WD111	0	111	1	0
FR0WD112	FR0WD112	0	112	1	0
FR0WD113	FR0WD113	0	113	1	0
FR0WD114	FR0WD114	0	114	1	0
FR0WD115	FR0WD115	0	115	1	0
FR0WD116	FR0WD116	0	116	1	0
FR0WD117	FR0WD117	0	117	1	0

OK Cancel

Right-Click in **FR0WD1** and Select:

Edit Word FR0WD1



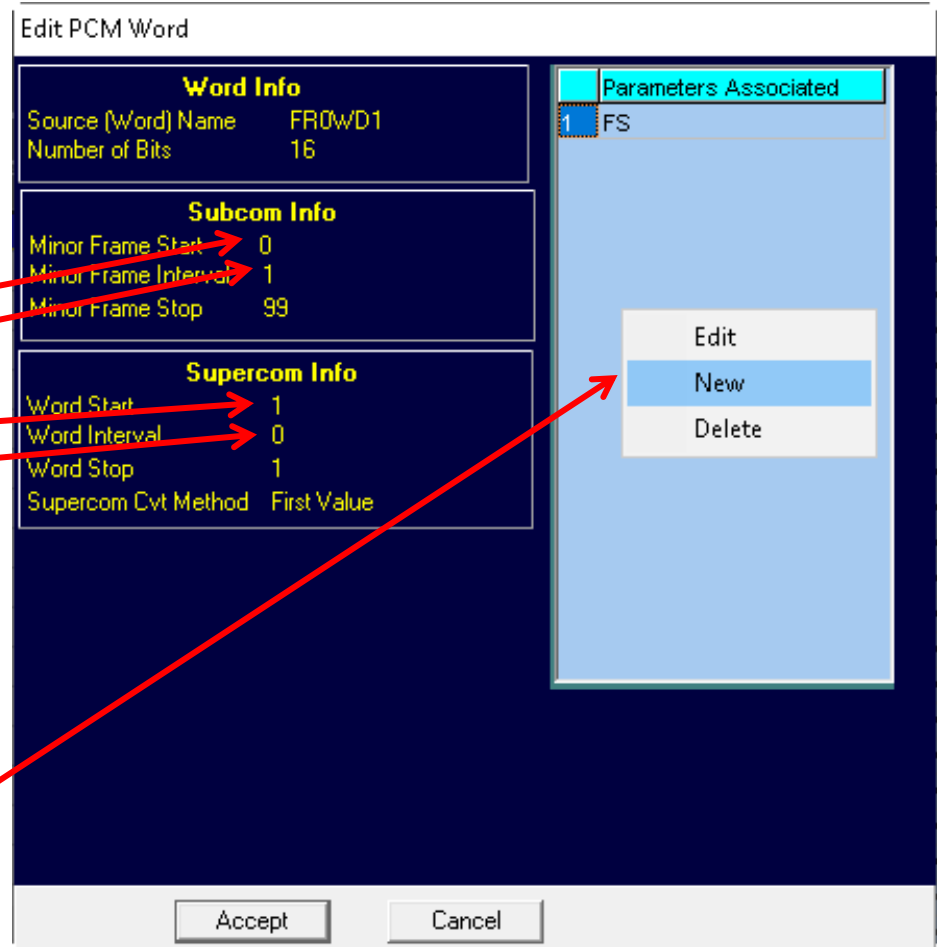
FR0WD1

(0,1)

- Edit Word FR0WD1
- Delete Word FR0WD1

This is a **Prime** Parameter
Right Click in the **Subcom Info** and the
Supercom Info area and verify the
indicated values below:

Variable Name	FS
Description	BARKER CODE
Type (Size)	INT_U (32 bits)
Bias	0.000000E+00
Scale	1.000000E+00
Scale Units	
Frame Start	0
Frame Interval	1
Word Start	1
Word Interval	0
Starting Bit	15



Right-click in the
Parameters Associated Block and
Select **New**

Right-click in the appropriate areas and
Add the information shown

Variable Name	FS
Description	BARKER CODE
Type (Size)	INT_U (32 bits)
Bias	0.000000E+00
Scale	1.000000E+00
Scale Units	
Frame Start	0
Frame Interval	1
Word Start	1
Word Interval	0
Starting Bit	15

Parameter Definition

Parameter ID

Parameter Name: FS
 Unit of Measure: COUNTS
 Description: BARKER CODE
 Classification: NONE
 Stream Frame Part: Main Frame

Process Definition

Number of Bits: 15
 (Msb Lsb)

Number of Bits: 32 (contig bits)
 Type Number: BINARY
 EUC (Scale Factor): 1.0000000000000000
 Offset: 0.0000000000000000
 Special Process: Normal

Advanced Process

2nd Parameter Name: -----
 Time Parameter Name: -----
 Mode Parameter Name: -----
 Mode Variable (hex): 0xFFFF
 Mode Operator: Equals
 LUT Number: 0
 State Ref Rate (Hz): 0

Default Display Settings

Parameter Label: FROWD1
 Max Value: 65535.000
 Min Value: 0.000

Accept Cancel

When complete, Click **Accept** on both
the **Parameter Definition** and the
Edit PCM Word Windows

Note: Entering parameters larger
than 16 bits will show the screen below

Multiple Words Required

Are the bits contiguous across the multiple words

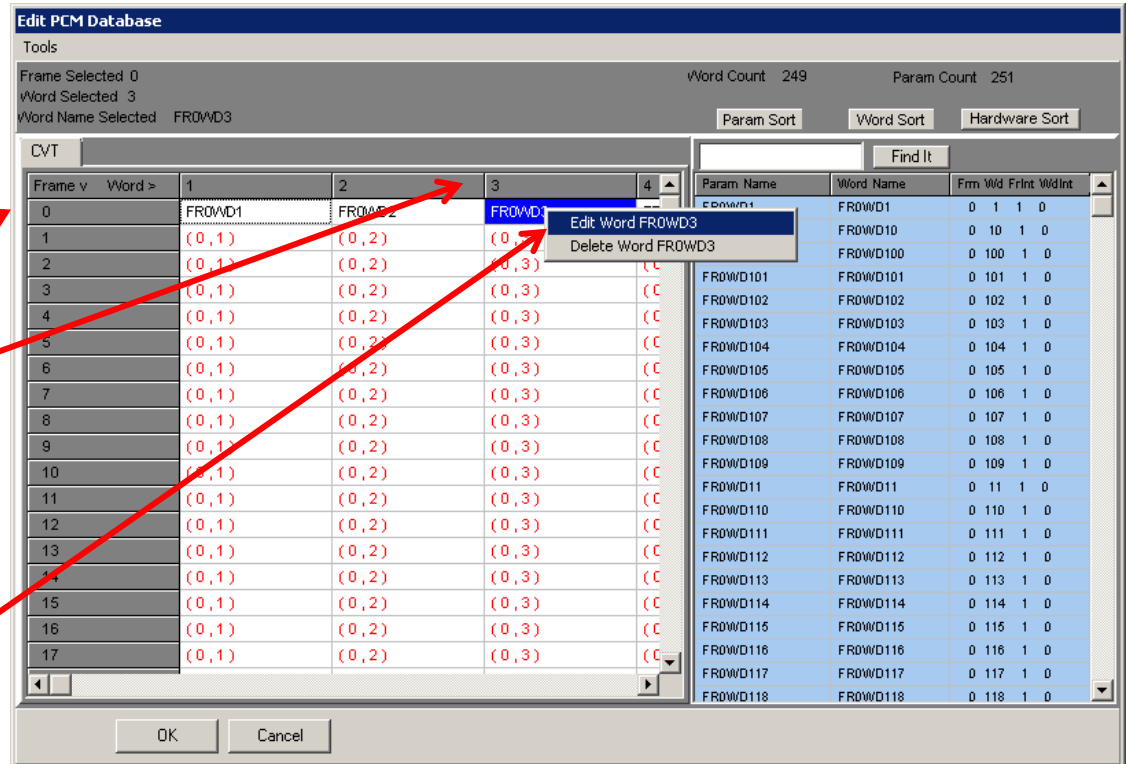
Yes No

Click **Yes**

Enter the **SFID** definition:

Variable Name	SFID
Description	SUBFRAME ID
Type (Size)	INT_U (8 bits)
Bias	0.000000E+00
Scale	1.000000E+00
Scale Units	
Frame Start	0
Frame Interval	1
Word Start	3
Word Interval	0
Starting Bit	15 8

Right-Click in **FR0WD3** and Select:
Edit Word FR0WD3



Edit PCM Database

Tools

Frame Selected 0 Word Count 249 Param Count 251

Word Selected 3

Word Name Selected FR0WD3

Param Sort Word Sort Hardware Sort

CVT

Frame v	Word >	3	4
0	FR0WD1	FR0WD2	FR0WD3
1	(0,1)	(0,2)	(0,3)
2	(0,1)	(0,2)	(0,3)
3	(0,1)	(0,2)	(0,3)
4	(0,1)	(0,2)	(0,3)
5	(0,1)	(0,2)	(0,3)
6	(0,1)	(0,2)	(0,3)
7	(0,1)	(0,2)	(0,3)
8	(0,1)	(0,2)	(0,3)
9	(0,1)	(0,2)	(0,3)
10	(0,1)	(0,2)	(0,3)
11	(0,1)	(0,2)	(0,3)
12	(0,1)	(0,2)	(0,3)
13	(0,1)	(0,2)	(0,3)
14	(0,1)	(0,2)	(0,3)
15	(0,1)	(0,2)	(0,3)
16	(0,1)	(0,2)	(0,3)
17	(0,1)	(0,2)	(0,3)

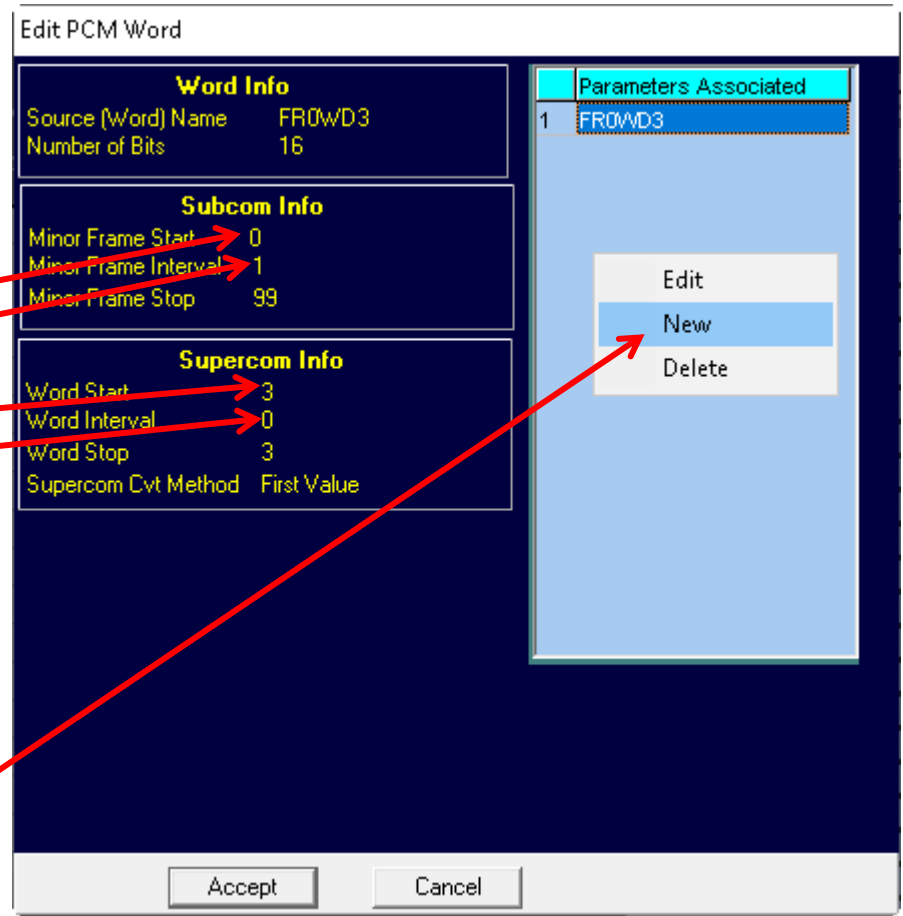
Param Name Word Name Frm Wd Frnt WdInt

FR0WD1	FR0WD1	0 1 1 0
FR0WD10	FR0WD10	0 10 1 0
FR0WD100	FR0WD100	0 100 1 0
FR0WD101	FR0WD101	0 101 1 0
FR0WD102	FR0WD102	0 102 1 0
FR0WD103	FR0WD103	0 103 1 0
FR0WD104	FR0WD104	0 104 1 0
FR0WD105	FR0WD105	0 105 1 0
FR0WD106	FR0WD106	0 106 1 0
FR0WD107	FR0WD107	0 107 1 0
FR0WD108	FR0WD108	0 108 1 0
FR0WD109	FR0WD109	0 109 1 0
FR0WD11	FR0WD11	0 11 1 0
FR0WD110	FR0WD110	0 110 1 0
FR0WD111	FR0WD111	0 111 1 0
FR0WD112	FR0WD112	0 112 1 0
FR0WD113	FR0WD113	0 113 1 0
FR0WD114	FR0WD114	0 114 1 0
FR0WD115	FR0WD115	0 115 1 0
FR0WD116	FR0WD116	0 116 1 0
FR0WD117	FR0WD117	0 117 1 0
FR0WD118	FR0WD118	0 118 1 0

OK Cancel

This is another **Prime** Parameter
Right Click in the **Subcom Info** and the
Supercom Info area and verify the
indicated values below:

Variable Name	SFID
Description	SUBFRAME ID
Type (Size)	INT_U (8 bits)
Bias	0.000000E+00
Scale	1.000000E+00
Scale Units	
Frame Start	0
Frame Interval	1
Word Start	3
Word Interval	0
Starting Bit	15 8



Right-click in the
Parameters Associated Block and
Select **New**

Right-click in the appropriate areas and
Add the information shown

Variable Name	SFID
Description	SUBFRAME ID
Type (Size)	INT_U (8 bits)
Bias	0.000000E+00
Scale	1.000000E+00
Scale Units	
Frame Start	0
Frame Interval	1
Word Start	3
Word Interval	0
Starting Bit	15 8

Parameter Definition

Parameter ID

Parameter Name: SFID
 Unit of Measure: COUNTS
 Description: SUBFRAME ID
 Classification: NONE
 Stream Frame Part: Main Frame

Process Definition

15 0
 (Msb Lsb)

Msb: 15
 Number of bits: 8
 SP Number: BINARY
 EUC (Scale Factor): 1.0000000000000000
 Offset: 0.0000000000000000
 Special Process: Normal

Advanced Process

2nd Parameter Name: -----
 Time Parameter Name: -----
 Mode Parameter Name: -----
 Mode Variable (hex): 0xFFFF
 Mode Operator: Equals
 LUT Number: 0
 Stale Ref Rate (Hz): 0

Default Display Settings

Parameter Label: FROWD3
 Max Value: 65535.000
 Min Value: 0.000

Accept Cancel

When complete, Click **Accept** on both
the **Parameter Definition** and the
Edit PCM Word Windows

The definition of **ALT_MSL** is **Subcommutated**, Delete existing **Prime** word

Right - click on **FR0WD5** and Select: **Delete Word FR0WD5**

Click **FR0WD6** then back to **FR0WD5**

Right - click on **FR2WD5** and Select: **Add New Word**

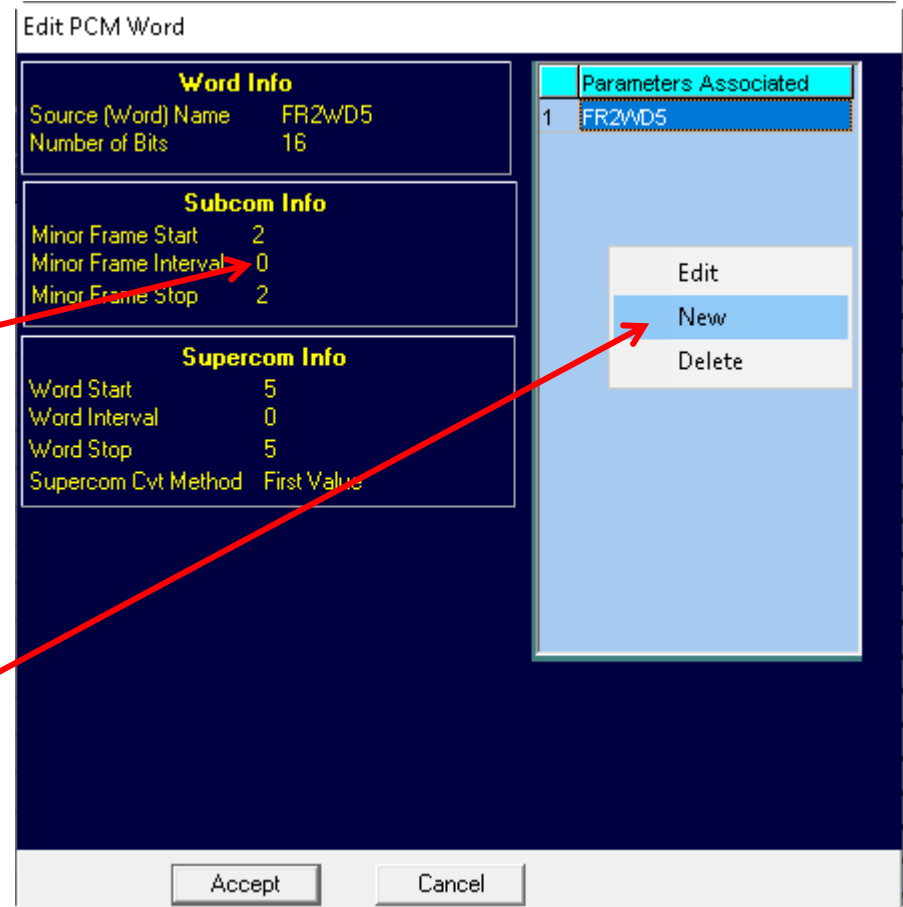
Variable Name	ALT_MSL
Description	ALTITUDE MSL
Type (Size)	FLOAT (32 bits)
Bias	0.000000E+00
Scale	3.280840E+00
Scale Units	FT
Frame Start	2
Frame Interval	0
Word Start	5
Word Interval	0
Starting Bit	15

Right Click in the **Subcom Info** and **Supercom Info** area set up the proper PCM Word values:

Variable Name	ALT_MSL
Description	ALTITUDE MSL
Type (Size)	FLOAT (32 bits)
Bias	0.000000E+00
Scale	3.280840E+00
Scale Units	FT
Frame Start	2
Frame Interval	0
Word Start	5
Word Interval	0
Starting Bit	15

Now that we have proper commutation, we need to add our new parameter

Right-click in the **Parameters Associated** Block and Select **New**



Edit PCM Word

Word Info
Source (Word) Name: FR2WD5
Number of Bits: 16

Subcom Info
Minor Frame Start: 2
Minor Frame Interval: 0
Minor Frame Stop: 2

Supercom Info
Word Start: 5
Word Interval: 0
Word Stop: 5
Supercom Cvt Method: First Value

Parameters Associated

1	FR2WD5
---	--------

Edit
New
Delete

Accept Cancel

Right Click in the **Subcom Info** and **Supercom Info** area and fill in the indicated values:

Variable Name	ALT_MSL
Description	ALTITUDE MSL
Type (Size)	FLOAT (32 bits)
Bias	0.000000E+00
Scale	3.280840E+00
Scale Units	FT
Frame Start	2
Frame Interval	0
Word Start	5
Word Interval	0
Starting Bit	15

Parameter Definition

Parameter ID

Parameter Name: ALTMSL

Unit of Measure: FT

Description: ALTITUDE MSL

Classification: NONE

Stream Frame Part: Main Frame

Process Definition

15 0

(Hsb.....Lsb)

Msb: 15

Number of Bits: 32 (contig bits)

Type Number: BINARY

EBP (Scale Factor): 3.2808400000000000

Offset: 0.0000000000000000

Special Process: Normal

Advanced Process

2nd Parameter Name:

Time Parameter Name:

Mode Parameter Name:

Mode Variable (hex): 0xFFFF

Mode Operator: Equals

LUT Number: 0

State Ref Rate (Hz): 0

Default Display Settings

Parameter Label: FR2WD5

Max Value: 65535.000

Min Value: 0.000

Input Range 1 - 64

Enter the number of bits the parameter uses

32

OK Cancel

Multiple Words Required

Are the bits contiguous across the multiple words

Yes No

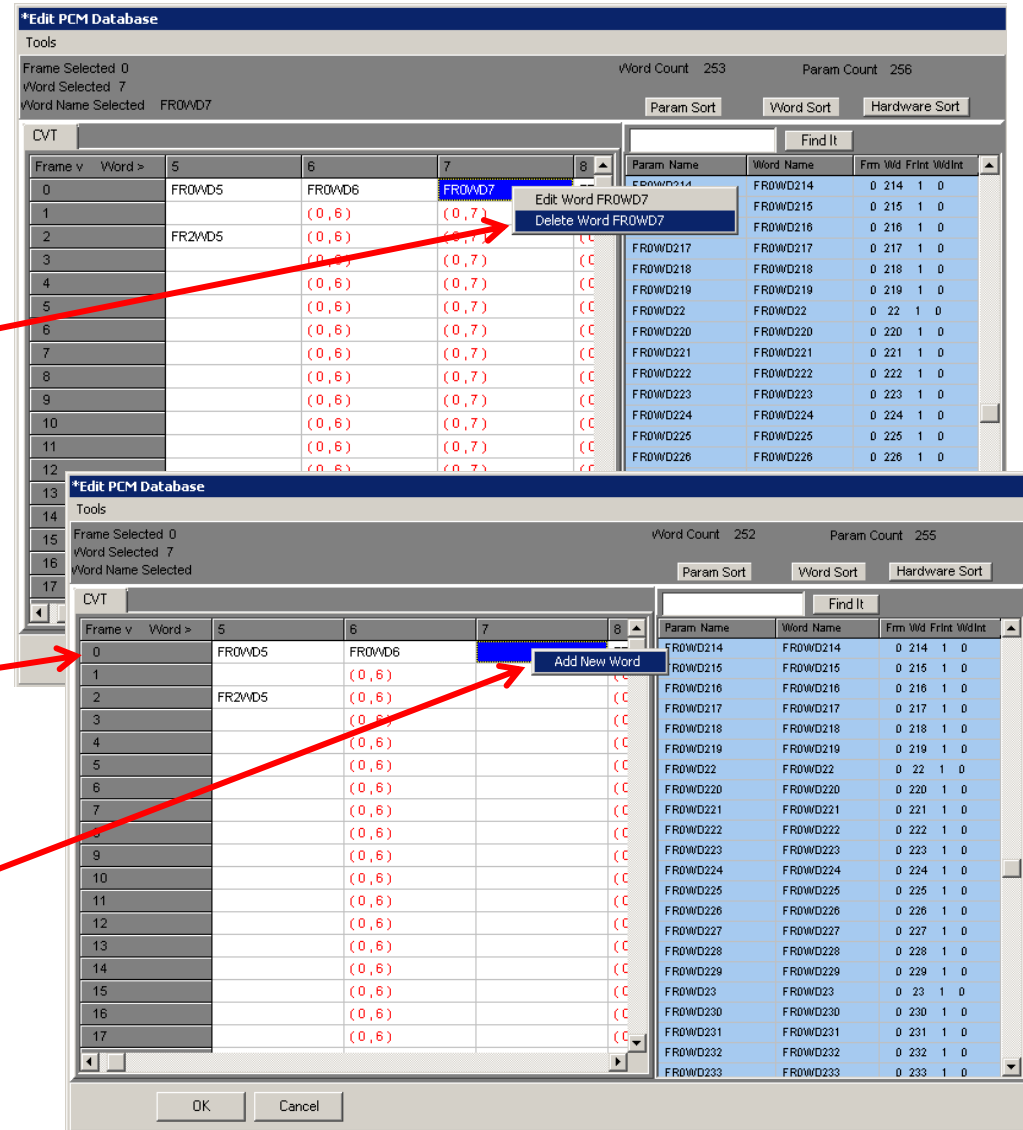
When complete, Click **Accept** on both the **Parameter Definition** and the **Edit PCM Word** Windows

The definition of **GND_TRK** is **Subcommutated**, need to Delete existing **Prime** word **FR0WD7**.

Click **FR0WD6** then **FR0WD7**.

Right - click on **FR0WD7** and Select:
Delete Word FR0WD7

Variable Name	GND_TRK
Description	GROUND TRACK ANGLE
Type (Size)	FLOAT (32 bits)
Bias	0.000000E+00
Scale	5.729878E+01
Scale Units	DEG
Frame Start	0
Frame Interval	4
Word Start	7
Word Interval	0
Starting Bit	15



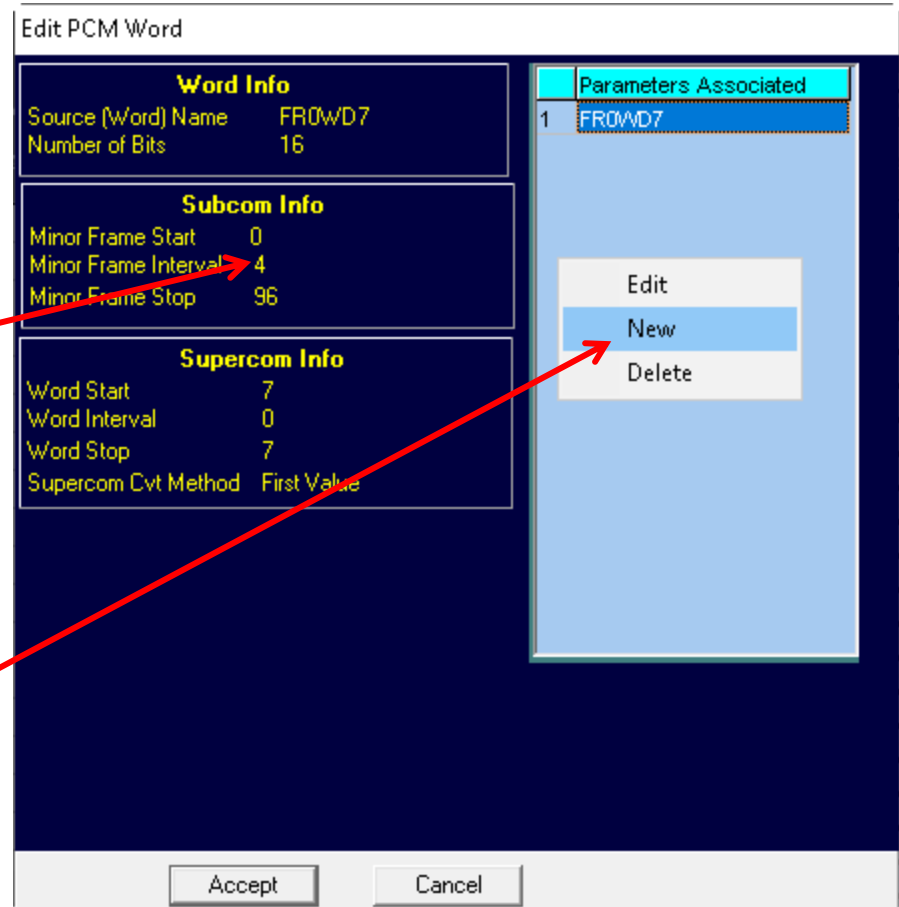
Right - click on **FR3WD7** and Select:
Add New Word

Right Click in the **Subcom Info** and **Supercom Info** area set up the proper PCM Word values:

Variable Name	GND_TRK
Description	GROUND TRACK ANGLE
Type (Size)	FLOAT (32 bits)
Bias	0.000000E+00
Scale	5.729578E+01
Scale Units	DEG
Frame Start	0
Frame Interval	4
Word Start	7
Word Interval	0
Starting Bit	15

Now that we have proper commutation, we need to add our new parameter

Right-click in the **Parameters Associated** Block and Select **New**



Edit PCM Word

Word Info
Source (Word) Name FROWD7
Number of Bits 16

Subcom Info
Minor Frame Start 0
Minor Frame Interval 4
Minor Frame Stop 96

Supercom Info
Word Start 7
Word Interval 0
Word Stop 7
Supercom Cvt Method First Value

Parameters Associated

1	FROWD7
---	--------

Edit
New
Delete

Accept Cancel

Right Click in the **Subcom Info** and **Supercom Info** area and fill in the indicated values:

Variable Name	GND_TRK
Description	GROUND TRACK ANGLE
Type (Size)	FLOAT (32 bits)
Bias	0.000000E+00
Scale	5.729578E+01
Scale Units	DEG
Frame Start	0
Frame Interval	4
Word Start	7
Word Interval	0
Starting Bit	15

Parameter Definition

Parameter ID

Parameter Name: GND_TRK

Unit of Measure: DEG

Description: GROUND TRACK ANGLE

Classification: NONE

Stream Frame Part: Main Frame

Process Definition

15 | 0

(Msb Lsb)

Msb: 15

Number of Bits: 32 (contig bits)

IEEE Number: IEEE SINGLE

EUC (Scale Factor): 57.2957800000000000

Offset: 0.0000000000000000

Special Process: Normal

Advanced Process

2nd Parameter Name:

Time Parameter Name:

Mode Parameter Name:

Mode Variable (hex): 0xFFFF

Mode Operator: Equals

LUT Number: 0

State Ref Rate (Hz): 0

Default Display Settings

Parameter Label: FROWD7

Max Value: 65535.000

Min Value: 0.000

Input Range 1 - 64

Enter the number of bits the parameter uses

32

OK Cancel

Multiple Words Required

Are the bits contiguous across the multiple words

Yes No

When complete, Click **Accept** on both the **Parameter Definition** and the **Edit PCM Word** Windows

The definition of **N12VDC** is **Subcommutated**, Delete existing **Prime** word

Right - click on **FR0WD9** and Select:
Delete Word FR0WD9

Click **FR0WD10** then **FR0WD9**.

Variable Name	N12VDC
Description	-12VDC
Type (Size)	INT_U (8 bits)
Bias	0.0000000E+00
Scale	1.1110000E-01
Scale Units	VOLT
Frame Start	0
Frame Interval	2
Word Start	9
Word Interval	0
Starting Bit	7 0

Right - click on **FR0WD9** and Select:
Add New Word

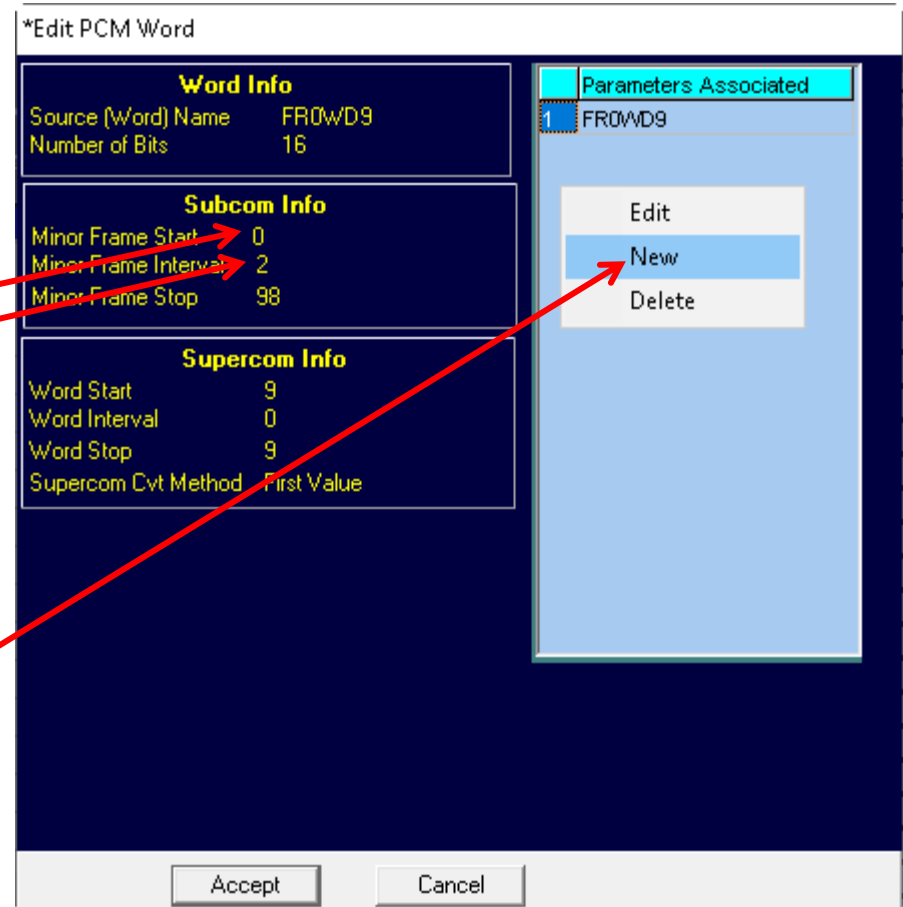
The screenshots show the 'Edit PCM Database' application. The top screenshot shows the CVT table with 'FR0WD9' selected and a context menu open, highlighting 'Delete Word FR0WD9'. The bottom screenshot shows the same CVT table with 'FR0WD9' selected and a context menu open, highlighting 'Add New Word'. Both screenshots show a list of words on the right side of the window, including 'FR0WD1' through 'FR0WD11'.

Right Click in the **Subcom Info** and **Supercom Info** area set up the proper PCM Word values:

Variable Name	N12VDC
Description	-12VDC
Type (Size)	INT_U (8 bits)
Bias	0.0000000E+00
Scale	1.1110000E-01
Scale Units	VOLT
Frame Start	0
Frame Interval	2
Word Start	9
Word Interval	0
Starting Bit	7 0

Now that we have proper commutation, we need to add our new parameter

Right-click in the **Parameters Associated** Block and Select **New**



***Edit PCM Word**

Word Info
Source (Word) Name: FR0WD9
Number of Bits: 16

Subcom Info
Minor Frame Start: 0
Minor Frame Interval: 2
Minor Frame Stop: 98

Supercom Info
Word Start: 9
Word Interval: 0
Word Stop: 9
Supercom Cvt Method: First Value

Parameters Associated

1	FR0WD9
---	--------

Edit
New
Delete

Accept Cancel

Right Click in the **Subcom Info** and **Supercom Info** area and fill in the indicated values:

Variable Name	N12VDC
Description	-12VDC
Type (Size)	INT_U (8 bits)
Bias	0.0000000E+00
Scale	1.1110000E-01
Scale Units	VOLT
Frame Start	2
Frame Interval	0
Word Start	9
Word Interval	0
Starting Bit	7 0

Parameter Definition

Parameter ID

Parameter Name: N12VDC
 Unit of Measure: VOLT
 Description: -12VDC
 Classification: NONE
 Stream Frame Part: Main Frame

Process Definition

15 |-----| 0
 (Msb |-----| Lsb)

MSB: 7
 Number of Bits: 8
 Type Number: BINARY
 EDC (Scale Factor): 0.1111000000000000
 Offset: 0.0000000000000000
 Special Process: Normal

Advanced Process

2nd Parameter Name: -----
 Time Parameter Name: -----
 Mode Parameter Name: -----
 Mode Variable (hex): 0xFFFF
 Mode Operator: Equals
 LUT Number: 0
 Stale Ref Rate (Hz): 0

Default Display Settings

Parameter Label: FROWD9
 Max Value: 65535.000
 Min Value: 0.000

Accept Cancel

When complete, Click **Accept** on both the **Parameter Definition** and **Edit PCM Definition** Form.

The definition of **P12VDC** is **Subcommutated**.

Right - click on **FR1WD9** and Select: **Add New Word**

Variable Name	P12VDC
Description	+12VDC
Type (Size)	INT_U (8 bits)
Bias	0.0000000E+00
Scale	1.1110000E-01
Scale Units	VOLT
Frame Start	1
Frame Interval	2
Word Start	9
Word Interval	0
Starting Bit	15 8

***Edit PCM Database**

Tools

Frame Selected 1 Word Count 249 Param Count 255

Word Selected 9

Word Name Selected

Param Sort Word Sort Hardware Sort

CVT

Frame	Word	9	10	11
0		FR0WD9	FR0WD10	FR0WD11
1		(0.9)	(0.10)	(0.11)
2		(0.9)	(0.10)	(0.11)
3		(0.9)	(0.10)	(0.11)
4		(0.9)	(0.10)	(0.11)
5		(0.9)	(0.10)	(0.11)
6		(0.9)	(0.10)	(0.11)
7		(0.9)	(0.10)	(0.11)
8		(0.9)	(0.10)	(0.11)
9		(0.9)	(0.10)	(0.11)
10		(0.9)	(0.10)	(0.11)
11		(0.9)	(0.10)	(0.11)
12		(0.9)	(0.10)	(0.11)
13		(0.9)	(0.10)	(0.11)
14		(0.9)	(0.10)	(0.11)
15		(0.9)	(0.10)	(0.11)
16		(0.9)	(0.10)	(0.11)
17		(0.9)	(0.10)	(0.11)

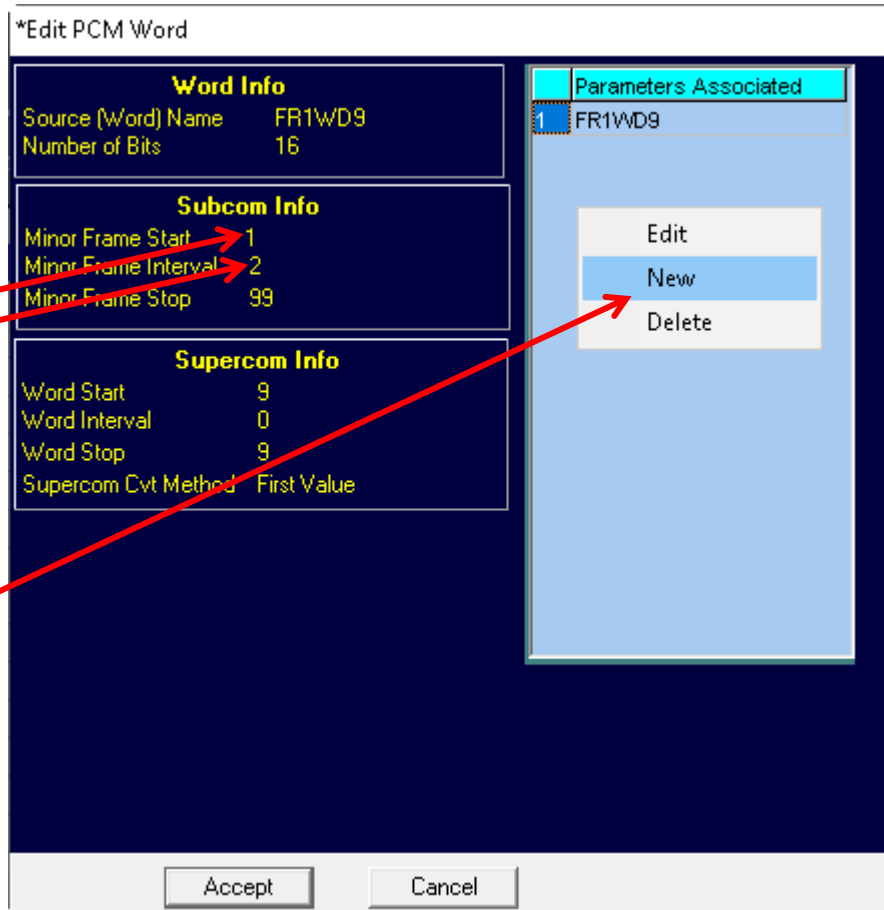
Add New Word

Param Name	Word Name	Frm	Wd	Frnt	WdInt
FR0WD1	FR0WD1	0	1	1	0
FS	FR0WD1	0	1	1	0
FR0WD10	FR0WD10	0	10	1	0
FR0WD100	FR0WD100	0	100	1	0
FR0WD101	FR0WD101	0	101	1	0
FR0WD102	FR0WD102	0	102	1	0
FR0WD103	FR0WD103	0	103	1	0
FR0WD104	FR0WD104	0	104	1	0
FR0WD105	FR0WD105	0	105	1	0
FR0WD106	FR0WD106	0	106	1	0
FR0WD107	FR0WD107	0	107	1	0
FR0WD108	FR0WD108	0	108	1	0
FR0WD109	FR0WD109	0	109	1	0
FR0WD11	FR0WD11	0	11	1	0
FR0WD110	FR0WD110	0	110	1	0
FR0WD111	FR0WD111	0	111	1	0
FR0WD112	FR0WD112	0	112	1	0
FR0WD113	FR0WD113	0	113	1	0
FR0WD114	FR0WD114	0	114	1	0
FR0WD115	FR0WD115	0	115	1	0
FR0WD116	FR0WD116	0	116	1	0

OK Cancel

Right Click in the **Subcom Info** and **Supercom Info** area set up the proper PCM Word values:

Variable Name	P12VDC
Description	+12VDC
Type (Size)	INT_U (8 bits)
Bias	0.0000000E+00
Scale	1.1110000E-01
Scale Units	VOLT
Frame Start	1
Frame Interval	2
Word Start	9
Word Interval	0
Starting Bit	15 8



Right-click in the **Parameters Associated** Block and Select **New**

Right Click in the **Subcom Info** and **Supercom Info** area and fill in the indicated values:

Variable Name	P12VDC
Description	+12VDC
Type (Size)	INT_LL(8 bits)
Bias	0.0000000E+00
Scale	1.1110000E-01
Scale Units	VOLT
Frame Start	1
Frame Interval	2
Word Start	9
Word Interval	0
Starting Bit	15 8

Parameter Definition

Parameter ID

Parameter Name: P12VDC
 Unit of Measure: VOLT
 Description: +12VDC
 Classification: NONE
 Stream Frame Part: Main Frame

Process Definition

15 |-----| 0
 (Hsb-----Lsb)

MSB: 15
 Number of Bits: 8
 Type Number: BINARY
 EUC (Scale Factor): 0.1111000000000000
 Difset: 0.0000000000000000
 Special Process: Normal

Advanced Process

2nd Parameter Name: -----
 Time Parameter Name: -----
 Mode Parameter Name: -----
 Mode Variable (hex): 0xFFFF
 Mode Operator: Equals
 LUT Number: 0
 Stale Ref Rate (Hz): 0

Default Display Settings

Parameter Label: FROWD9
 Max Value: 65535.000
 Min Value: 0.000

Accept Cancel

When complete, Click **Accept** on both the **Parameter Definition** and **Edit PCM Definition Form**.

Click **OK**

*Edit PCM Database

Tools

Frame Selected 1 Word Count 250 Param Count 257

Word Selected 9

Word Name Selected FR1WD9 Param Sort Word Sort Hardware Sort

CVT

Frame v	Word >	7	8	9
0		FR0wD7	FR0wD8	FR0wD9
1			(0,8)	FR1wD9
2			(0,8)	(0,9)
3			(0,8)	(1,9)
4		(0,7)	(0,8)	(0,9)
5			(0,8)	(1,9)
6			(0,8)	(0,9)
7			(0,8)	(1,9)
8		(0,7)	(0,8)	(0,9)
9			(0,8)	(1,9)
10			(0,8)	(0,9)
11			(0,8)	(1,9)
12		(0,7)	(0,8)	(0,9)
13			(0,8)	(1,9)
14			(0,8)	(0,9)
15			(0,8)	(1,9)
16		(0,7)	(0,8)	(0,9)
17			(0,8)	(1,9)

Param Name	Word Name	Frm	Wd	Frlnt	WdInt
FS	FR0wD1	0	1	1	0
FR0wD1	FR0wD1	0	1	1	0
FR0wD10	FR0wD10	0	10	1	0
FR0wD100	FR0wD100	0	100	1	0
FR0wD101	FR0wD101	0	101	1	0
FR0wD102	FR0wD102	0	102	1	0
FR0wD103	FR0wD103	0	103	1	0
FR0wD104	FR0wD104	0	104	1	0
FR0wD105	FR0wD105	0	105	1	0
FR0wD106	FR0wD106	0	106	1	0
FR0wD107	FR0wD107	0	107	1	0
FR0wD108	FR0wD108	0	108	1	0
FR0wD109	FR0wD109	0	109	1	0
FR0wD11	FR0wD11	0	11	1	0
FR0wD110	FR0wD110	0	110	1	0
FR0wD111	FR0wD111	0	111	1	0
FR0wD112	FR0wD112	0	112	1	0
FR0wD113	FR0wD113	0	113	1	0
FR0wD114	FR0wD114	0	114	1	0
FR0wD115	FR0wD115	0	115	1	0
FR0wD116	FR0wD116	0	116	1	0

Find It

OK Cancel


You can add a comment in this Field

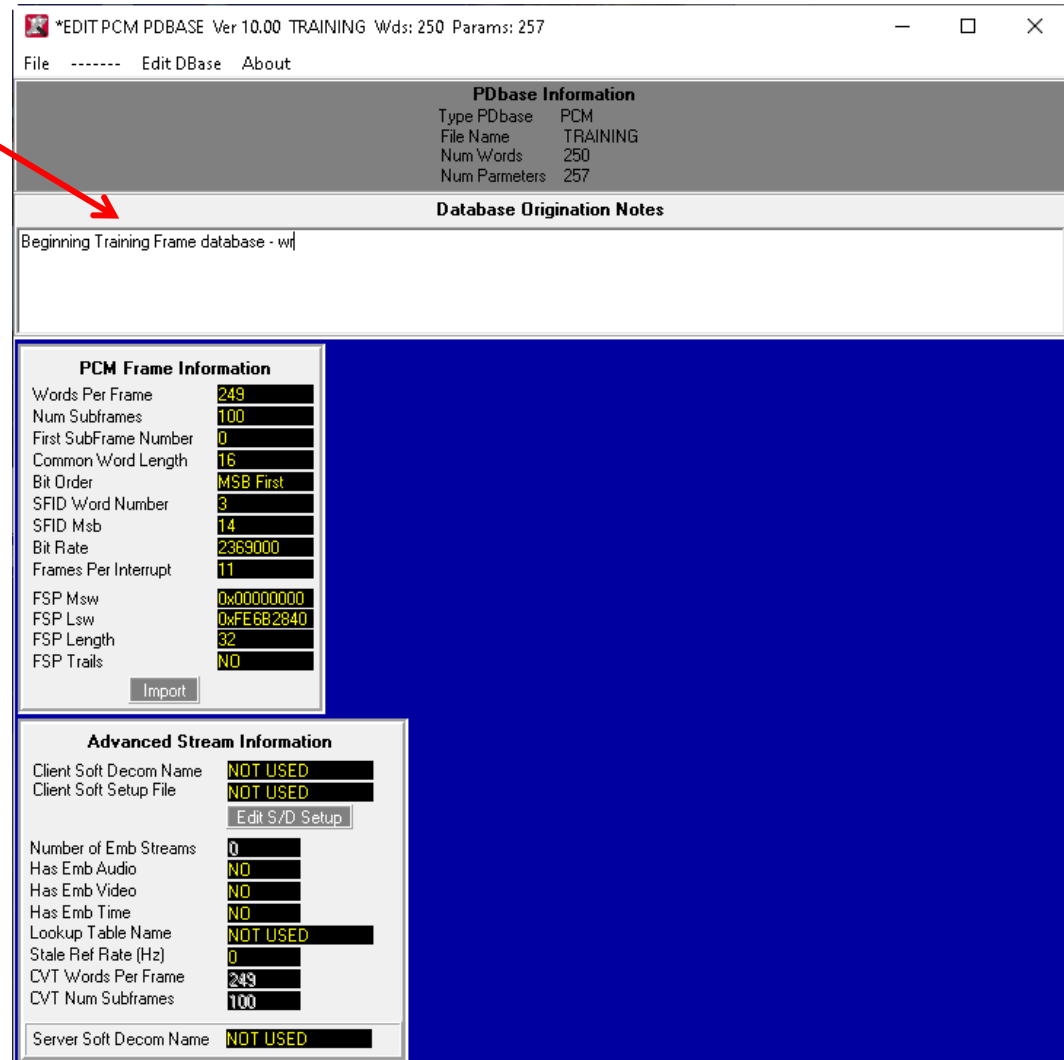
Select **File>Save**

This saves the Updated **TRAINING.PBIN** and **TRAINING.PDB**.

This updated .PBIN will be called by your previous **TRAINING.PRJ** Project.

Note: The .PDB file is a Human Readable version of the .PBIN binary File. With a bit of effort you can import this Text file into EXCEL using Tab delimitation

Close the EDITPCMDATABASE application by clicking the  Button.



*EDITPCM PDBASE Ver 10.00 TRAINING Wds: 250 Params: 257

File Edit DBase About

PDBase Information	
Type PDBase	PCM
File Name	TRAINING
Num Words	250
Num Parameters	257

Database Origination Notes

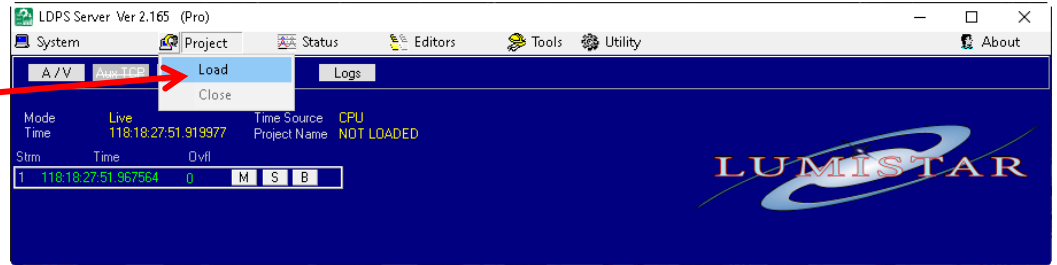
Beginning Training Frame database - wj

PCM Frame Information	
Words Per Frame	249
Num Subframes	100
First SubFrame Number	0
Common Word Length	16
Bit Order	MSB First
SFID Word Number	3
SFID Msb	14
Bit Rate	2369000
Frames Per Interrupt	11
FSP Msw	0x00000000
FSP Lsw	0xFE6B2840
FSP Length	32
FSP Trails	NO

Import

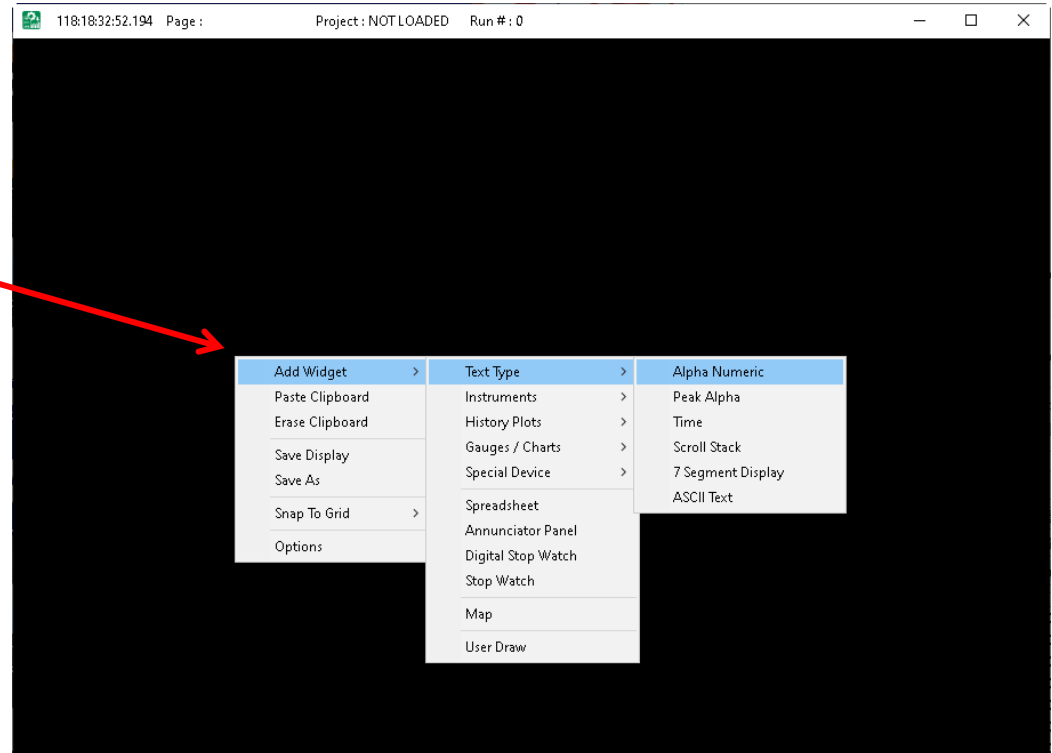
Advanced Stream Information	
Client Soft Decom Name	NOT USED
Client Soft Setup File	NOT USED
Edit S/D Setup	
Number of Emb Streams	0
Has Emb Audio	NO
Has Emb Video	NO
Has Emb Time	NO
Lookup Table Name	NOT USED
Stale Ref Rate (Hz)	0
CVT Words Per Frame	249
CVT Num Subframes	100
Server Soft Decom Name	NOT USED

Load the **TRAINING.PRJ** using the **Server Selecting Project>Load**



On the **Client** Click the **New Pg** Button
Display>New Page

Right – click in the **Page** and Select
**Add Widget>Text Type>Alpha
Numeric**



You populate your Widget finding your parameter possibly using the **Search Windows**, then left-click the parameter (a circle with a slash indicates you have selected the parameter and may drag it to the Widget **Parameter Name** CheckBox). My choice is **FS**.

Param Info : FS (Fr 0 Wd 1 Fr Int 1 Wd Int 0)

FS | Find It | Quick View Mode

Tag Name	Description
Stream 1	
FS	BARKER CODE
GND_TRK	GROUND TRACK ANGLE
M12VDC	-12VDC
P12VDC	+12VDC
SFID	SUBFRAME ID

*Widget Editor for Alpha-Numeric

Param 1 Param 2 Param 3 Param 4 Param 5 Param 6 Param 7 P

Enable Parameter

Stream Source **Stream 1**

Parameter Name **FS**

Data Solve Algorithm **Mx + b**

Parameter Label **Frame Sync**

Unit of Measure Label **COUNTS**

Enum Filename

Display Event Log

Value	Text

Global Presentation

Data Color

Label Color

Display Radix **Base 16 (hex)**

Value Width **8**

Decimal Places **0**

Accept Cancel

- Click in the **Parameter Label** TextBox to change the Widget Label
- Select the type of **Display Radix** and **Value Width**
- Finish by clicking the **Accept** Button

AlphaNumList

Frame Sync	FE6B2840	COL
------------	----------	-----

Hover your cursor in the Banner of the **Display Page** to access its Options

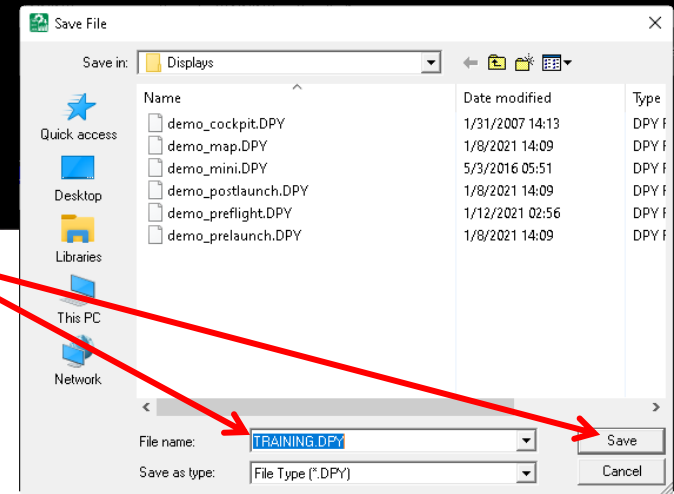
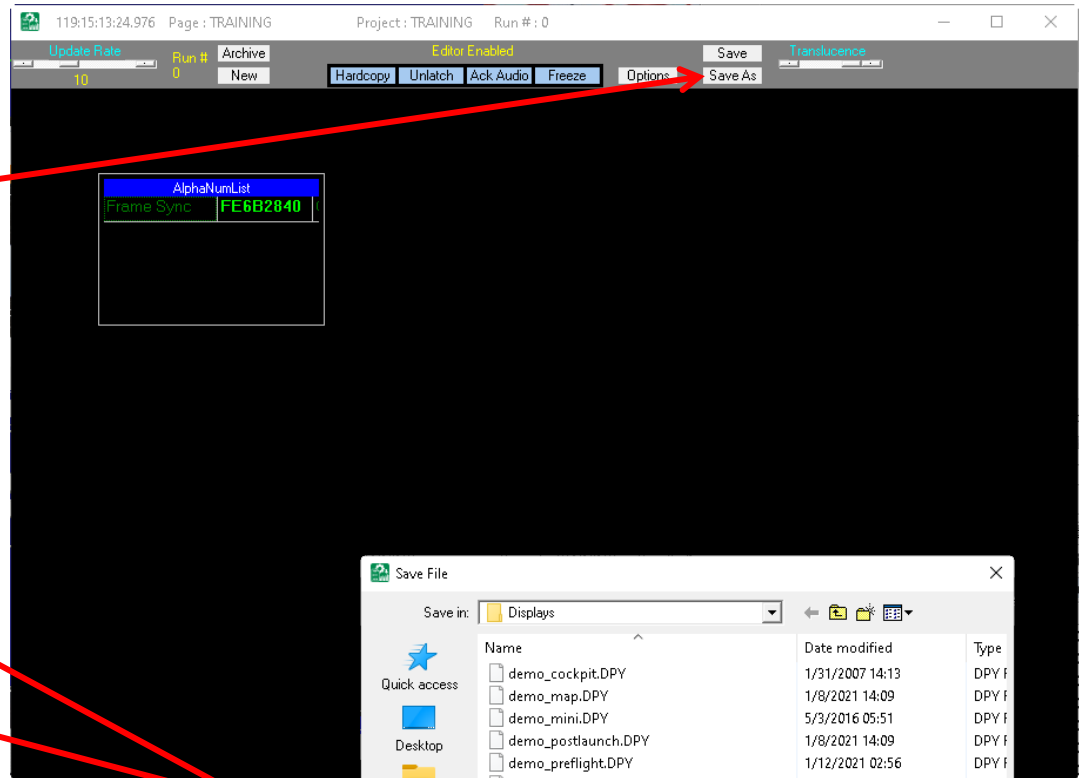
Click the **Save As** Button to save this new **Display Page**

Enter the name, **Training** for this new **Display Page**

Click the **Save** Button To save this new **Display Page**

Close the **Display Page** by Clicking the  Button

From the **LDPS_10x** Banner close currently loaded **Training.PRJ** by selecting in the Banner **Project>Close**



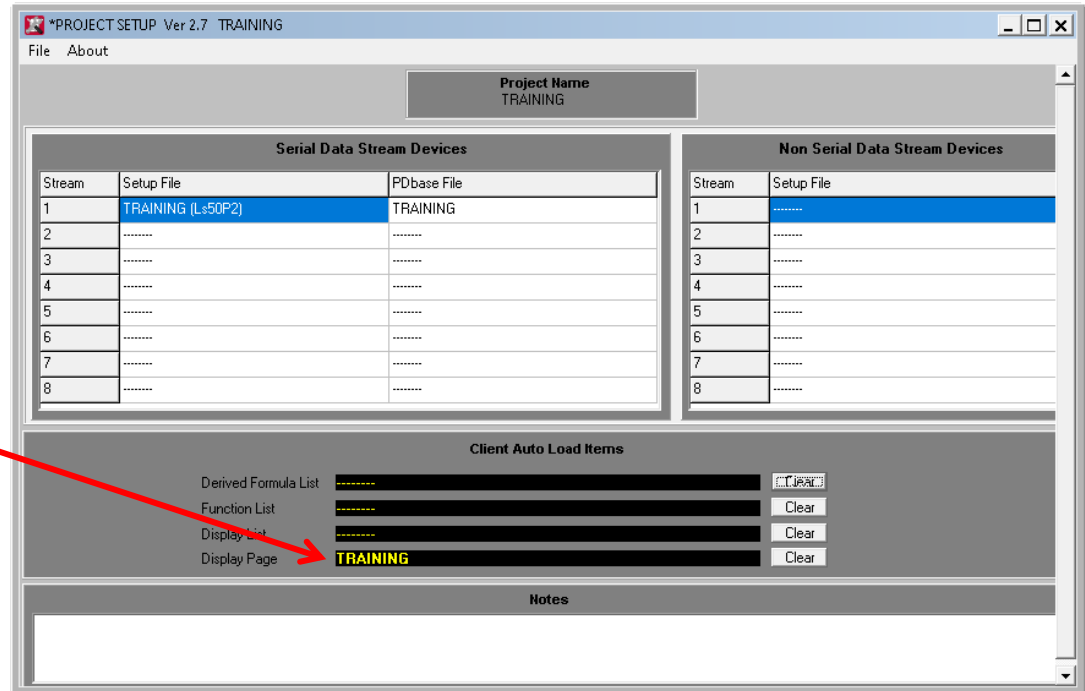
Open the **Project Editor**,
Recall the **TRAINING.PRJ**

Left-click in the **Display Page** area and
steer to the recently saved
TRAINING.DPY


Select: **File>Save**

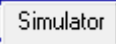
Now when you load the Training
Project you will see the Training Display
also


Close the **Project Setup** application by
Clicking the  Button



Load the **TRAINING.PRJ** for Test.


On the **Ls50P2** Control, click the  Button to bring up the Decom control windows.

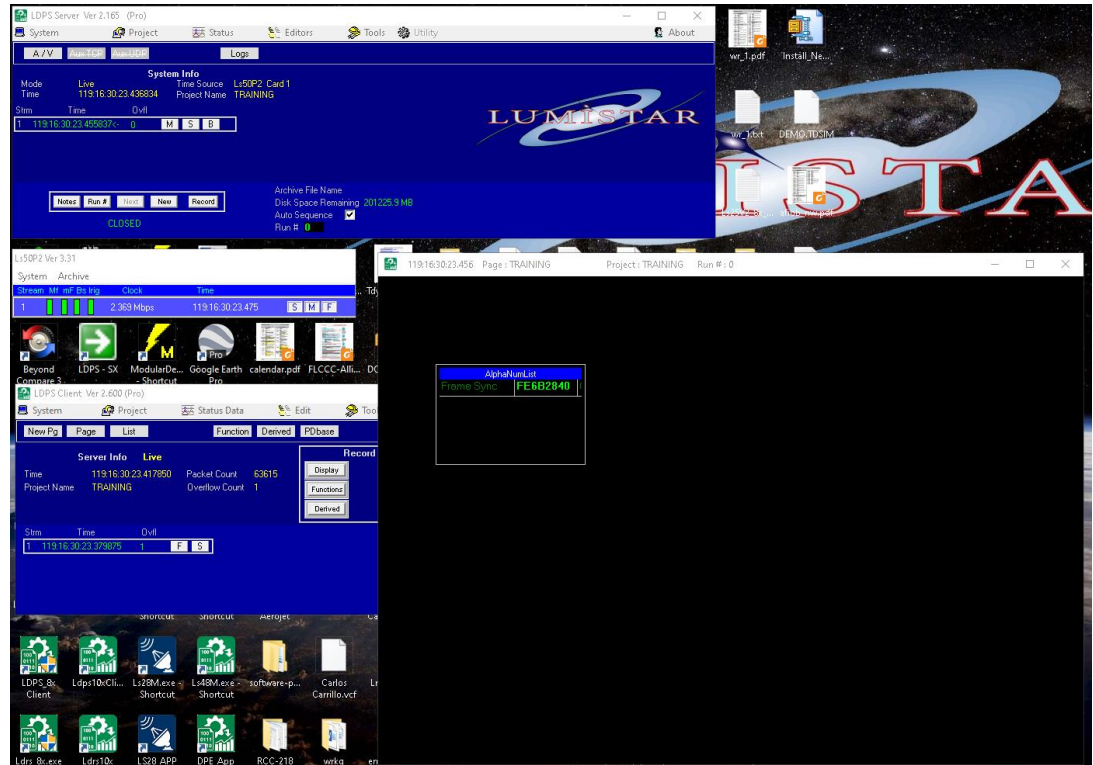
Click the  Button.

Stop the Simulator by Clicking the  Button.

Notice the display indicates Stale Data:



Restart the Simulator by Clicking the  Button.

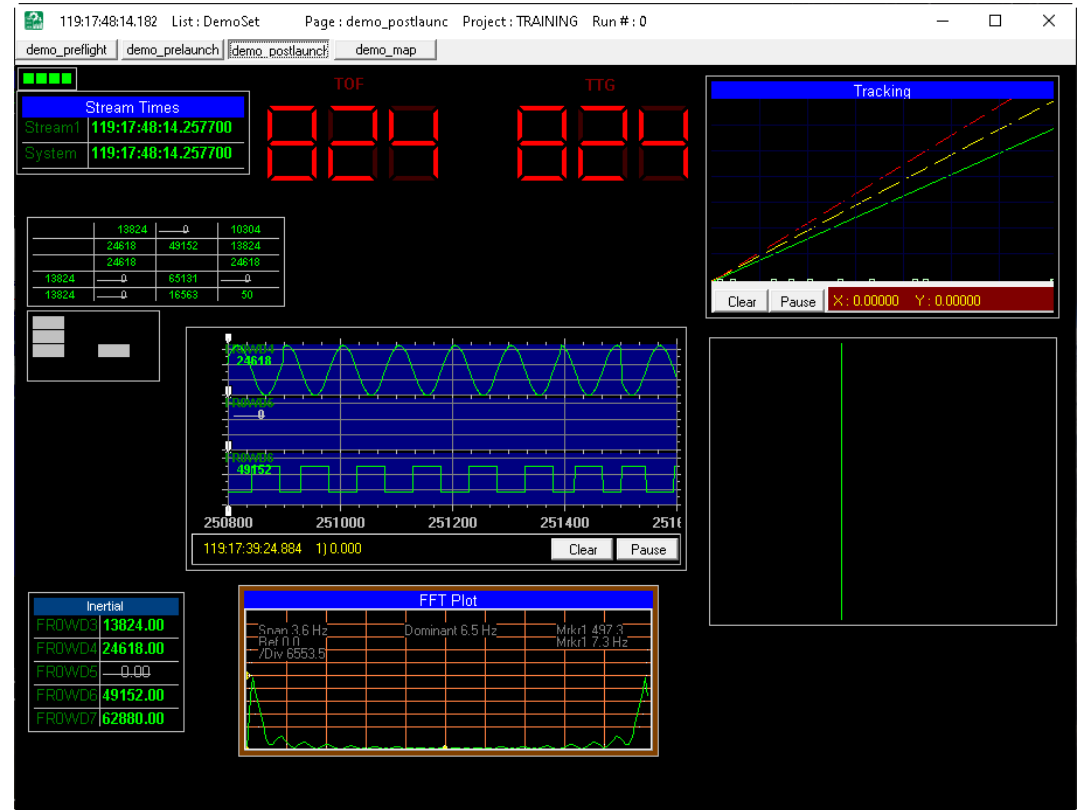


Since the Simulated on-board LS-50P2 Simulator has inherited the DEMO simulations, you can load the **DemoSet.DPS** and see how those Display Pages and Widgets are configured.

On the LDPS_10x **Client** click the **List** Button and load the **DemoSet.DPS**.

You can click through the Tabs to see each **DEMO** display.

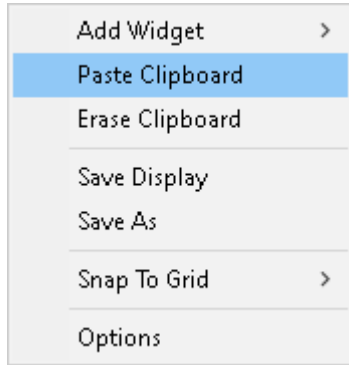
The **demo_postlaunch.DPY** Tab includes a Sample Based Strip Chart Refer to the Training document: **LDPS_10x_Training_Lesson-1.pdf** to understand the **DEMO.PRJ** Displays, etc.



You can copy any of these **DEMO** Display Widgets by right-clicking in the Widget to copy and selecting the **Copy To Clipboard** option

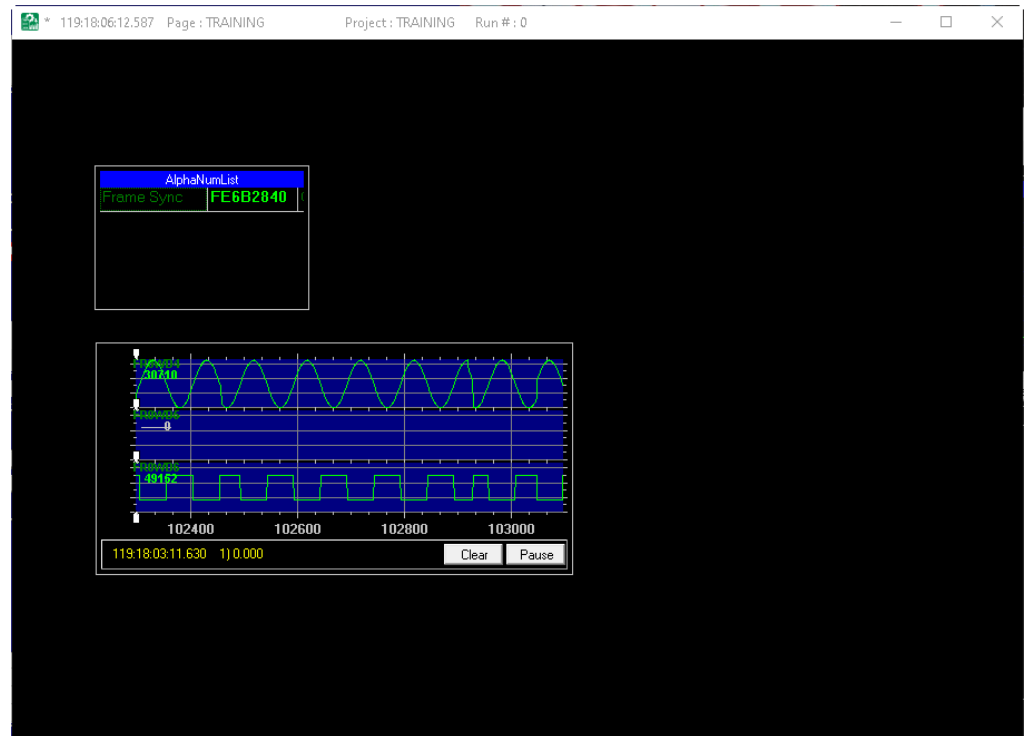
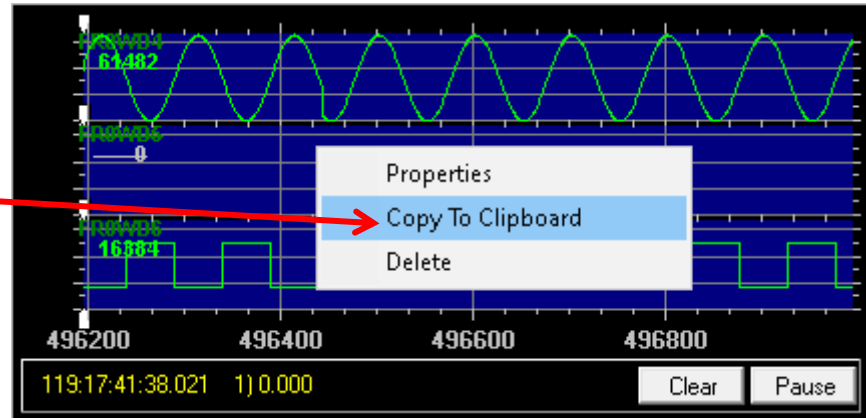
Select the **Training** Display. Place the cursor to where you want the Widget placed. Right-click

And select the **Paste Clipboard** To paste the Widget.



Save the updated **TRAINING.DPY**.

The next time you load **TRAINING.PRJ**, The Strip Chart will be included.



**IT IS LEFT FOR THE CLASS TO COMPLETE
THE REST OF THE TRAINING FRAME
DISPLAYS**