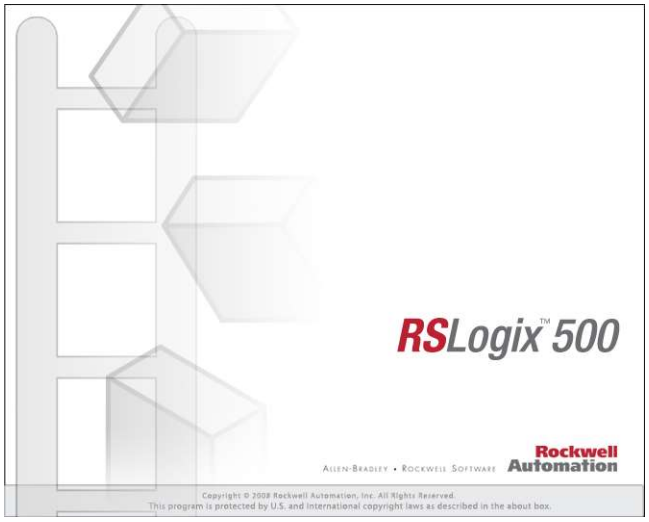
RSLogix Micro Project Report



Processor Information

Processor Type: Bul.1763 MicroLogix 1100 Series A

Processor Name: UNTITLED

Total Memory Used: 938 Instruction Words Used - 574 Data Table Words Used

Total Memory Left: 5718 Instruction Words Left

Program Files: 4

Data Files: 11

Program ID: ae97

I/O Configuration

0	Bul.1763	MicroLogix 1100 Series A
1		
2		
3		
4		

Channel Configuration

CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Edit Resource/Owner Timeout: 60
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Passthru Link ID: 1
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Write Protected: No
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Comms Servicing Selection: Yes
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Message Servicing Selection: Yes
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex 1st AWA Append Character: \d
   CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex 2nd AWA Append Character: \a

   Source ID: 1 (decimal)
   Baud: 19200
   Parity: NONE
   Control Line : No Handshaking
   Error Detection: CRC
   Embedded Responses: Auto Detect
   Duplicate Packet Detect: Yes
   ACK Timeout(x20 ms): 50
   NAK Retries: 3
   ENQ Retries: 3

CHANNEL 1 (SYSTEM) - Driver: Ethernet
   CHANNEL 1 (SYSTEM) - Driver: Ethernet Edit Resource/Owner Timeout: 60
   CHANNEL 1 (SYSTEM) - Driver: Ethernet Passthru Link ID: 1
   CHANNEL 1 (SYSTEM) - Driver: Ethernet Write Protected: No
   CHANNEL 1 (SYSTEM) - Driver: Ethernet Comms Servicing Selection: Yes
   CHANNEL 1 (SYSTEM) - Driver: Ethernet Message Servicing Selection: Yes

   Hardware Address: 00:0F:73:01:72:04
   IP Address: 192.168.1.112
   Subnet Mask: 255.255.255.0
   Gateway Address: 192.168.1.1
   Msg Connection Timeout (x 1mS): 15000
   Msg Reply Timeout (x mS): 3000
   Inactivity Timeout (x Min): 30
   Bootp Enable: No
   Dhcp Enable No
   SNMP Enable: No
   HTTP Enable: Yes
   Auto Negotiate Enable: Yes
   Port Speed Enable: 10/100 Mbps Full Duplex/Half Duplex
   Contact:
   Location:

Program File List

Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
	2	LADDER	2	No	12
ONEDEPTH	255	LADDER	10	No	584

Data File List

Name	Number	Type	Scope	Debug	Words	Elements	Last
OUTPUT	0	O	Global	No	12	4	O:3
INPUT	1	I	Global	No	18	6	I:5
STATUS	2	S	Global	No	0	66	S:65
BINARY	3	B	Global	No	1	1	B3:0
TIMER	4	T	Global	No	3	1	T4:0
COUNTER	5	C	Global	No	3	1	C5:0
CONTROL	6	R	Global	No	3	1	R6:0
INTEGER	7	N	Global	No	20	20	N7:19
FLOAT	8	F	Global	No	2	1	F8:0
	254	F	Global	No	256	128	F254:127
	255	N	Global	No	256	256	N255:255

https://www.plctalk.net/qanda/showthread.php?t=131707

Model the incremental volume at beetween various levels of a cylindrical tank
with its axis of symmetry horizontal using only integer calculations, with rounding

Calculate one depth

0000

JSR
Jump To Subroutine
SBR File Number U:255

0001

END

https://www.plctalk.net/qanda/showthread.php?t=131707

Model the incremental volume at beetween various levels of a cylindrical tank
with its axis of symmetry horizontal using only integer calculations, with rounding

This is a proof of concept/exercise that, in 2021, has no practical purpose.

The diameter of the tank is 128; the radius of the tank is 64
Depth is an integer that ranges from 0 at the bottom of the tank to 128 at the top
For any value at or above 128, do nothing

0000

DEPTH

GEQ
Grtr Than or Eql (A>=B)
Source A N7:0 128<
Source B 128 128<

RET
Return

For any value of Depth less than 1, start the calculations from the bottom of the tank:
At Depth = 0 i.e. the bottom of the tank
- Store -64 as the Depth at the bottom of the tank converted to
  radial distance below the mid-point of the tank i.e. Depth_as_radius = Depth - 64
- Half the horizontal dimension (BOT_Y i.e. Y at bottom) at that starting depth will be 0
- Assign 1 to Depth to start the iterative calculations that follow

0001

DEPTH

LES
Less Than (A<B)
Source A N7:0 128<
Source B 1 1<

BOT_DEPTH_AS_RADIUS

MOV
Move
Source -64 -64<
Dest N255:0 -64<

BOT_Y

CLR
Clear
Dest N255:1 0<

DEPTH

MOV
Move
Source 1 1<
Dest N7:0 128<

Prepare to execute 5 iterations of the algorithm
- Assign 0 to value of ITERATOR
- Calculate indices into the array (Data File N255) that will hold the depth-as-radius and Y values at each depth
- Also calculate the index of the previous Y value

0002

ITERATOR

CLR

Clear	
Dest	N7:7 5<

IDX_DEPTH_AS_RADIUS

MUL

Multiply	
Source A	N7:0 128<
Source B	2 2<
Dest	N7:9 254<

IDX_PREVIOUS_Y

SUB

Subtract	
Source A	N7:9 254<
Source B	1 1<
Dest	N7:8 253<

IDX_NEW_Y

ADD

Add	
Source A	N7:9 254<
Source B	1 1<
Dest	N7:10 255<

Calcuate
- Depth-as-radius (depth - 64)
- An initial estimate of the change (delta) in Y from the value Y0 at the previous depth (depth-1) to Y'
  - Use 12 for depth-as-radius == -63
  - Use previous final delta for all other depths

0003

DEPTH_AS_RADIUS

SUB
Subtract
Source A N7:0 128<
Source B 64 64<
Dest N255:[N7:9] 63<

DEPTH_AS_RADIUS

EQU
Equal
Source A N255:[N7:9] 63<
Source B -63 -63<

DELTA

MOV
Move
Source 12 12<
Dest N7:5 -5<

Calculate the quantity

$64^2 - DEPTHar^2 = 4096 - (X*X)$

that will be used in the algorithm, where DEPTHar=X is depth-as-radius

0004

64SQ_LESS_XSQ

MUL
Multiply
Source A N255:[N7:9] 63<
Source B N255:[N7:9] 63<
Dest N7:3 127<

64SQ_LESS_XSQ

SUB
Subtract
Source A 4096 4096<
Source B N7:3 127<
Dest N7:3 127<

Alogrithm to solve for Y' in
$X^2 + Y'^2 = 64$
Start with an estimate for Y, calculate k, the sum of squares X*X + Y*Y = k, so we have
X X + Y' Y' = 4096
X X + Y Y = k
Subtract the latter from the former:
Y' Y' - Y Y = 4096 - k
Assume there is a difference, delta, between Y' and Y:
Y' = Y + delta
Substituting
(Y+delta) (Y+delta) - Y Y = 4096 - k
Y Y + 2 Y delta + delta delta - Y*Y = 4096 - k
2 Y delta + delta delta = 4096 - k
delta (2Y + delta) = 4096 - k
delta = (4096 - k) / (2Y + deltaOLD)
Use successive substitution:
- Start with an estimate of Y as the Y0 from the previous depth,
- Use the previous depth's delta as deltaOLD, so Y' = Y0 + deltaOLD, to calculate an incremental delta:
incrdelta = (4096 - k) / (2Y + deltaOLD)
- Increment deltaOLD by incrdelta to get a new deltaOLD
deltaOLD = deltaOLD + incrdelta = deltaOLD + (4096 - k) / (2Y + deltaOLD)
and repeat for five iterations

0005

Q255:0
LBL

NUMERATOR

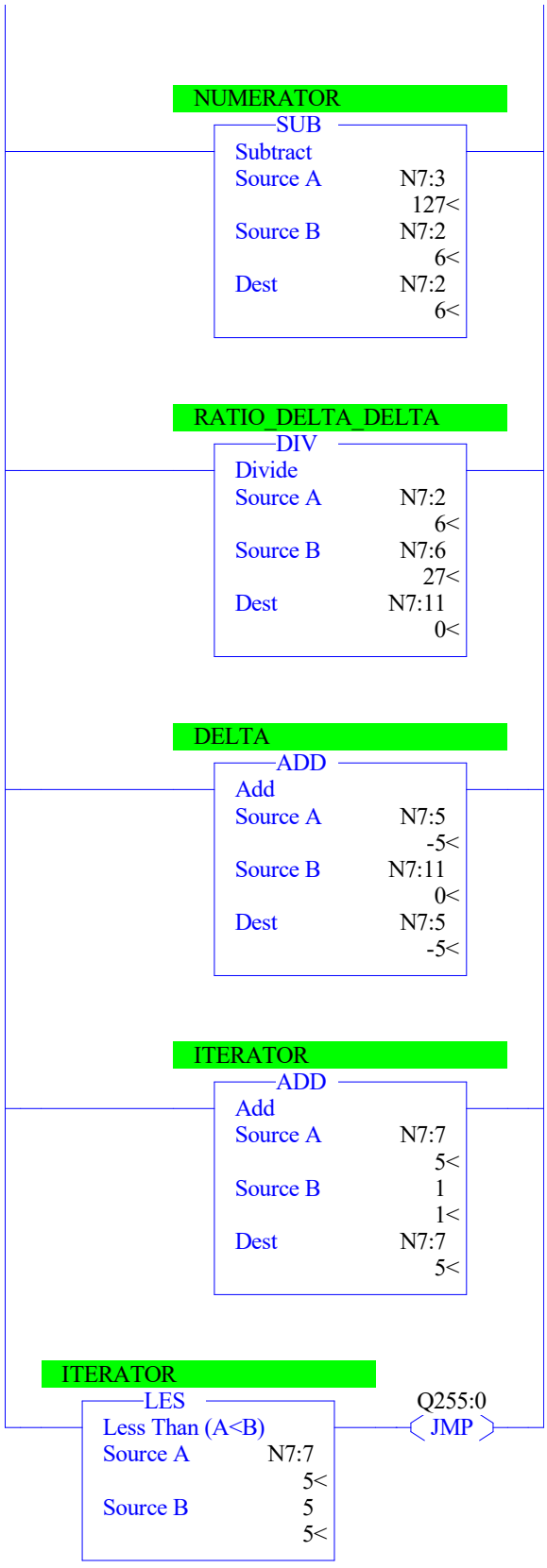
ADD
Add
Source A N255:[N7:8] 16<
Source B N7:5 -5<
Dest N7:2 6<

DENOMINATOR

ADD
Add
Source A N7:2 6<
Source B N255:[N7:8] 16<
Dest N7:6 27<

NUMERATOR

MUL
Multiply
Source A N7:2 6<
Source B N7:2 6<
Dest N7:2 6<


NUMERATOR
SUB
Subtract
Source A N7:3 127<
Source B N7:2 6<
Dest N7:2 6<
RATIO_DELTA_DELTA
DIV
Divide
Source A N7:2 6<
Source B N7:6 27<
Dest N7:11 0<
DELTA
ADD
Add
Source A N7:5 -5<
Source B N7:11 0<
Dest N7:5 -5<
ITERATOR
ADD
Add
Source A N7:7 5<
Source B 1 1<
Dest N7:7 5<
ITERATOR
LES
Less Than (A<B)
Source A N7:7 5<
Source B 5 5<
Q255:0
JMP

Calculate Y' = Y0 + delta, place in data file

0006

NEW_Y

ADD

Add

Source A N255:[N7:8] 16<

Source B N7:5 -5<

Dest N255:[N7:10] 11<

Calculate error in integer Y' using square root

0007

ERROR

SQR

Square Root

Source N7:3 127<

Dest F254:[N7:0] ?<

ERROR

SUB

Subtract

Source A N255:[N7:10] 11<

Source B F254:[N7:0] ?<

Dest F254:[N7:0] ?<

Incement depth for next pass through this routine

0008

DEPTH

ADD

Add

Source A N7:0 128<

Source B 1 1<

Dest N7:0 128<

0009

END

Data File O0 (bin) -- OUTPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
O:0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
O:0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
O:0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
O:0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A

Data File I1 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
I:0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
I:0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
I:0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
I:0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1763	MicroLogix 1100 Series A
I:0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	Bul.1763	MicroLogix 1100 Series A-Analog
I:0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	Bul.1763	MicroLogix 1100 Series A-Analog

Main

Processor Mode S:1/0 - S:1/4 = Remote Run
On Power up Go To Run (Mode Behavior) S:1/12 = 0
First Pass S:1/15 = No
Free Running Clock S:4 = 1001-1010-0110-0000

Proc

OS Catalog Number S:57 = 1100
OS Series S:58 = B
OS FRS S:59 =
Processor Catalog Number S:60 =
Processor Series S:61 = A
Processor FRN S:62 =
User Program Type S:63 = 8001h
Compiler Revision Number S:64 =

Scan Times

Maximum (x10 ms) S:22 = 25
Watchdog (x10 ms) S:3 (high byte) = 10
Last 100 uSec Scan Time S:35 = 16
Scan Toggle Bit S:33/9 = 0

Math

Math Overflow Selected S:2/14 = 1
Overflow Trap S:5/0 = 0
Carry S:0/0 = 0
Overflow S:0/1 = 0
Zero Bit S:0/2 = 0
Sign Bit S:0/3 = 0
Math Register (lo word) S:13 = 49
Math Register (high word) S:14-S:13 = 280
Math Register (32 Bit) S:14-S:13 = 18350129

Chan 0

Processor Mode S:1/0- S:1/4 = Remote Run
Node Address S:15 (low byte) = 0
Baud Rate S:15 (high byte) = ?
Channel Mode S:33/3 = 0
Comms Active S:33/4 = 0
Incoming Cmd Pending S:33/0 = 0
Msg Reply Pending S:33/1 = 0
Outgoing Msg Cmd Pending S:33/2 = 0

Debug

Suspend Code S:7 = 0
Suspend File S:8 = 0

Errors

Fault Override At Power Up S:1/8 = 0
Startup Protection Fault S:1/9 = 0
Major Error Halt S:1/13 = 0
Overflow Trap S:5/0 = 0
Control Register Error S:5/2 = 0
Major Error Executing User Fault Rtn. S:5/3 = 0
Battery Low S:5/11 = 0
Input Filter Selection Modified S:5/13 = 0
ASCII String Manipulation error S:5/15 = 0
Fault Routine S:29 = 0
Major Error S:6 = 0h
Error Description:

Protection

Deny Future Access S:1/14 = No
Data File Overwrite Protection Lost S:36/10 = True

Mem Module

Memory Module Loaded On Boot S:5/8 = 0
Password Mismatch S:5/9 = 0
Load Memory Module On Memory Error S:1/10 = 0
Load Memory Module Always S:1/11 = 0
On Power up Go To Run (Mode Behavior) S:1/12 = 0
Program Compare S:2/9 = 0
Data File Overwrite Protection Lost S:36/10 = 1

Forces

Forces Enabled S:1/5 = Yes
Forces Installed S:1/6 = No

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	

Data File T4 -- TIMER

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T4:0	1	0	1	1.0 sec	0	0		

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol)	Description
C5:0	0	0	0	0	0	0	0	0		

Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol)	Description
R6:0	0	0	0	1	0	0	0	0	0	0		

Data File N7 (dec) -- INTEGER

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	128	0	6	127	0	-5	27	5	253	254
N7:10	255	0	0	0	0	0	0	0	0	0

Data File F8 -- FLOAT

Offset	0	1	2	3	4
F8:0	0				

Data File F254

Offset	0	1	2	3	4
F254:0	0	-0.2694273	0.1254921	-0.3649158	-0.2710571
F254:5	0.2008057	-0.05549812	-0.1032639	0.01613235	0.2738647
F254:10	-0.3511276	0.1252174	-0.3095169	0.3347702	0.05002975
F254:15	-0.1703758	-0.3320198	-0.4396133	0.5028076	0.4917603
F254:20	-0.4757996	-0.4025307	-0.2907867	-0.1426506	0.04001617
F254:25	0.2555428	-0.4975739	-0.2206841	0.08497238	0.4182854
F254:30	-0.2217674	0.1638794	-0.4256248	0.008930206	0.4668236
F254:35	-0.05260849	0.4500198	-0.02585602	-0.4807663	0.08480835
F254:40	-0.329586	0.2756348	-0.09991837	-0.4565964	0.205265
F254:45	-0.1146469	-0.4166107	0.2991104	0.03226471	-0.2173615
F254:50	-0.4499817	0.3342209	0.135067	-0.04759979	-0.2139244
F254:55	-0.3640289	0.5019684	0.3839645	0.2818718	0.19561
F254:60	0.1251221	0.07035065	0.03125763	0.0078125	0
F254:65	0.0078125	0.03125763	0.07035065	0.1251221	0.19561
F254:70	0.2818718	0.3839645	-0.4980316	-0.3640289	-0.2139244
F254:75	-0.04759979	0.135067	0.3342209	-0.4499817	-0.2173615
F254:80	0.03226471	0.2991104	-0.4166107	-0.1146469	0.205265
F254:85	-0.4565964	-0.09991837	0.2756348	-0.329586	0.08480835
F254:90	-0.4807663	-0.02585602	0.4500198	-0.05260849	0.4668236
F254:95	0.008930206	-0.4256248	0.1638794	-0.2217674	0.4182854
F254:100	0.08497238	-0.2206841	-0.4975739	0.2555428	0.04001617
F254:105	-0.1426506	-0.2907867	-0.4025307	-0.4757996	0.4917603
F254:110	0.5028076	-0.4396133	-0.3320198	-0.1703758	0.05002975
F254:115	0.3347702	-0.3095169	0.1252174	-0.3511276	0.2738647
F254:120	0.01613235	-0.1032639	-0.05549812	0.2008057	-0.2710571
F254:125	-0.3649158	0.1254921	-0.2694273		

Data File N255 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N255:0	-64	0	-63	11	-62	16	-61	19	-60	22
N255:10	-59	25	-58	27	-57	29	-56	31	-55	33
N255:20	-54	34	-53	36	-52	37	-51	39	-50	40
N255:30	-49	41	-48	42	-47	43	-46	45	-45	46
N255:40	-44	46	-43	47	-42	48	-41	49	-40	50
N255:50	-39	51	-38	51	-37	52	-36	53	-35	54
N255:60	-34	54	-33	55	-32	55	-31	56	-30	57
N255:70	-29	57	-28	58	-27	58	-26	58	-25	59
N255:80	-24	59	-23	60	-22	60	-21	60	-20	61
N255:90	-19	61	-18	61	-17	62	-16	62	-15	62
N255:100	-14	62	-13	63	-12	63	-11	63	-10	63
N255:110	-9	63	-8	64	-7	64	-6	64	-5	64
N255:120	-4	64	-3	64	-2	64	-1	64	0	64
N255:130	1	64	2	64	3	64	4	64	5	64
N255:140	6	64	7	64	8	63	9	63	10	63
N255:150	11	63	12	63	13	63	14	62	15	62
N255:160	16	62	17	62	18	61	19	61	20	61
N255:170	21	60	22	60	23	60	24	59	25	59
N255:180	26	58	27	58	28	58	29	57	30	57
N255:190	31	56	32	55	33	55	34	54	35	54
N255:200	36	53	37	52	38	51	39	51	40	50
N255:210	41	49	42	48	43	47	44	46	45	46
N255:220	46	45	47	43	48	42	49	41	50	40
N255:230	51	39	52	37	53	36	54	34	55	33
N255:240	56	31	57	29	58	27	59	25	60	22
N255:250	61	19	62	16	63	11				

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	AB
B3:0/0						
F254:[N7:0]	ERROR	Global				
N7:0	DEPTH	Global				
N7:2	NUMERATOR	Global				
N7:3	64SQ_LESS_XSQ	Global				
N7:4	RADIUS	Global				
N7:5	DELTA	Global				
N7:6	DENOMINATOR	Global				
N7:7	ITERATOR	Global				
N7:8	IDX_PREVIOUS_Y	Global				
N7:9	IDX_DEPTH_AS_RADIUS	Global				
N7:10	IDX_NEW_Y	Global				
N7:11	RATIO_DELTA_DELTA	Global				
N255:0	BOT_DEPTH_AS_RADIUS	Global				
N255:1	BOT_Y	Global				
N255:[N7:8]	PREVIOUS_Y	Global				
N255:[N7:9]	DEPTH_AS_RADIUS	Global				
N255:[N7:10]	NEW_Y	Global				
S:0			Arithmetic Flags			
S:0/0			Processor Arithmetic Carry Flag			
S:0/1			Processor Arithmetic Underflow/ Overflow Flag			
S:0/2			Processor Arithmetic Zero Flag			
S:0/3			Processor Arithmetic Sign Flag			
S:1			Processor Mode Status/ Control			
S:1/0			Processor Mode Bit 0			
S:1/1			Processor Mode Bit 1			
S:1/2			Processor Mode Bit 2			
S:1/3			Processor Mode Bit 3			
S:1/4			Processor Mode Bit 4			
S:1/5			Forces Enabled			
S:1/6			Forces Present			
S:1/7			Comms Active			
S:1/8			Fault Override at Powerup			
S:1/9			Startup Protection Fault			
S:1/10			Load Memory Module on Memory Error			
S:1/11			Load Memory Module Always			
S:1/12			Load Memory Module and RUN			
S:1/13			Major Error Halted			
S:1/14			Access Denied			
S:1/15			First Pass			
S:2/0			STI Pending			
S:2/1			STI Enabled			
S:2/2			STI Executing			
S:2/3			Index Addressing File Range			
S:2/4			Saved with Debug Single Step			
S:2/5			DH-485 Incoming Command Pending			
S:2/6			DH-485 Message Reply Pending			
S:2/7			DH-485 Outgoing Message Command Pending			
S:2/15			Comms Servicing Selection			
S:3			Current Scan Time/ Watchdog Scan Time			
S:4			Time Base			
S:5/0			Overflow Trap			
S:5/2			Control Register Error			
S:5/3			Major Err Detected Executing UserFault Routine			
S:5/4			M0-M1 Referenced on Disabled Slot			
S:5/8			Memory Module Boot			
S:5/9			Memory Module Password Mismatch			
S:5/10			STI Overflow			
S:5/11			Battery Low			
S:6			Major Error Fault Code			
S:7			Suspend Code			
S:8			Suspend File			
S:9			Active Nodes			
S:10			Active Nodes			
S:11			I/O Slot Enables			
S:12			I/O Slot Enables			
S:13			Math Register			
S:14			Math Register			
S:15			Node Address/ Baud Rate			
S:16			Debug Single Step Rung			
S:17			Debug Single Step File			
S:18			Debug Single Step Breakpoint Rung			
S:19			Debug Single Step Breakpoint File			
S:20			Debug Fault/ Powerdown Rung			
S:21			Debug Fault/ Powerdown File			
S:22			Maximum Observed Scan Time			
S:23			Average Scan Time			
S:24			Index Register			
S:25			I/O Interrupt Pending			
S:26			I/O Interrupt Pending			
S:27			I/O Interrupt Enabled			
S:28			I/O Interrupt Enabled			
S:29			User Fault Routine File Number			
S:30			STI Setpoint			

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	AB
S:31			STI File Number			
S:32			I/O Interrupt Executing			
S:33			Extended Proc Status Control Word			
S:33/0			Incoming Command Pending			
S:33/1			Message Reply Pending			
S:33/2			Outgoing Message Command Pending			
S:33/3			Selection Status User/DF1			
S:33/4			Communicat Active			
S:33/5			Communicat Servicing Selection			
S:33/6			Message Servicing Selection Channel 0			
S:33/7			Message Servicing Selection Channel 1			
S:33/8			Interrupt Latency Control Flag			
S:33/9			Scan Toggle Flag			
S:33/10			Discrete Input Interrupt Reconfigur Flag			
S:33/11			Online Edit Status			
S:33/12			Online Edit Status			
S:33/13			Scan Time Timebase Selection			
S:33/14			DTR Control Bit			
S:33/15			DTR Force Bit			
S:34			Pass-thru Disabled			
S:34/0			Pass-Thru Disabled Flag			
S:34/1			DH+ Active Node Table Enable Flag			
S:34/2			Floating Point Math Flag Disable,Fl			
S:35			Last 1 ms Scan Time			
S:36			Extended Minor Error Bits			
S:36/8			DII Lost			
S:36/9			STI Lost			
S:36/10			Memory Module Data File Overwrite Protection			
S:37			Clock Calendar Year			
S:38			Clock Calendar Month			
S:39			Clock Calendar Day			
S:40			Clock Calendar Hours			
S:41			Clock Calendar Minutes			
S:42			Clock Calendar Seconds			
S:43			STI Interrupt Time			
S:44			I/O Event Interrupt Time			
S:45			DII Interrupt Time			
S:46			Discrete Input Interrupt- File Number			
S:47			Discrete Input Interrupt- Slot Number			
S:48			Discrete Input Interrupt- Bit Mask			
S:49			Discrete Input Interrupt- Compare Value			
S:50			Processor Catalog Number			
S:51			Discrete Input Interrupt- Return Number			
S:52			Discrete Input Interrupt- Accumulat			
S:53			Reserved/ Clock Calendar Day of the Week			
S:55			Last DII Scan Time			
S:56			Maximum Observed DII Scan Time			
S:57			Operating System Catalog Number			
S:58			Operating System Series			
S:59			Operating System FRN			
S:61			Processor Series			
S:62			Processor Revision			
S:63			User Program Type			
S:64			User Program Functional Index			
S:65			User RAM Size			
S:66			Flash EEPROM Size			
S:67			Channel 0 Active Nodes			
S:68			Channel 0 Active Nodes			
S:69			Channel 0 Active Nodes			
S:70			Channel 0 Active Nodes			
S:71			Channel 0 Active Nodes			
S:72			Channel 0 Active Nodes			
S:73			Channel 0 Active Nodes			
S:74			Channel 0 Active Nodes			
S:75			Channel 0 Active Nodes			
S:76			Channel 0 Active Nodes			
S:77			Channel 0 Active Nodes			
S:78			Channel 0 Active Nodes			
S:79			Channel 0 Active Nodes			
S:80			Channel 0 Active Nodes			
S:81			Channel 0 Active Nodes			
S:82			Channel 0 Active Nodes			
S:83			DH+ Active Nodes			
S:84			DH+ Active Nodes			
S:85			DH+ Active Nodes			
S:86			DH+ Active Nodes			
U:255			Calculate one depth			

Instruction Comment Database

Address	Instruction	Description

Symbol Group Database

Group_Name Description