

#### Purpose

This note describes how to configure the OMNI-200.

# 1 OMNI-200 Configuration Screen

#### TESTER

Click on the <u>CONFIG</u> button in the acquisition software to display the main OMNI-200 configuration screen shown below.

OMNI-200 1 - bobbin.cfg     File Edit View Probe Tools Util																			×
		HW NU	LL								A	BORT	P0\	WER DOWN	IP Add	ess 19	2.1.6.	42	
Config Options Scope Waveform Freq Sweep Status	_																		
Sample Rate 1,000 Num Chan 8 Trigger Internal			DRIV	ER					CO	IL			_	1					
Continuous ModeGhent UnTimeSt 32-bit ModeHigh Speed RPCEncodersSt Duranic SainArrau Dutruits DnRMS	LOT	DRV	FREQUEN	CY	GÀIN	1	2	3	4	5	6	7	8						
Internal Reference Konce Clock On Gains		1	400.000	KHz	100.00%	1	2	_											
Increment Caps  Auto Stop  Sample Flags	1																		
No Powerdown F Synch Outputs On	_																		
SLOT         DELAY (uS)         INTEG (wave)         TIME (uS)         ENCODER 1 2 3 4 5		1	300.000	KHz	100.00%	3	4						_						
1 54 43 162 2 54 43 198	2																		
	_																		
SLOT 1 2 3 4 5 6 7 8		1	200.000	KHz	100.00%	5	6	_											
2 20 14 3 20 14	3																		
4 20 14 COIL TYP BC HN RFT CAP NAME	_																		
1 DIF B 33 OK 2 ABS A 0 DAVECOIL		1	100.000	KHz	100.00%	7	8												
3	4																		
8																			
707 of 1.000 uS																			
																	OK	Can	cel

# 2 Configuring the OMNI-200 Ethernet Communications

#### 2.1 Setting the Desired IP Address

To set the desired IP address of the tester, type it into the IP address box:

IP Address [192.1.6.42

This is the address the software will attempt to use to communicate with the tester. It must match the IP address physically stored in the tester (see next section).

#### 2.2 Setting the Physical IP Address



Use the *Util* | *IP Setup* menu to display a list of all OMNI-200 testers on the network:

🖈 I	P Li	st																				×
DEV	# SI	ET			M	4C				TCP	ADDR			NET	MASK		0	GATEV	VAY		TYPE	
	1 YI	ΈS	00	14	B3	00	00	4B	192	1	6	41	255	255	255	0	0	0	0	0	OMNI-200	<b>▲</b>
																					ОК	Cancel

The **MAC** column shows the unique Ethernet MAC address of each tester. This is displayed on the OMNI-200 front-panel. The **TCP ADDR** column shows the IP address currently stored in the tester. This must match the desired value entered above. In this case, it is 192.1.6.41 which does not match.

To change it to the desired value, click in each segment of the address as shown below. A left-click will increase by one, a right-click will decrease by one, and a middle-click will set it to one. Use Shift+click and Shift+right-click to change by 10 at a time.

🗚 IP	List																				×
DEV#	SET			MA	чС			I	ICP #	ADDR			NET	MASK	[		GATE	WAY		TYPE	
1	NO	00	14	B3	00	00	4B	192	1	6	42	255	255	255	0	0	0	0	0	OMNI-200	▲ [
									Clichad	ck he ange dres:	ere f the s.	to P									-
																				OK	Cancel

Whenever the IP address is changed, the YES in the **SET** column will change to **NO** as shown below. Click on **NO** to update the IP address stored in the tester.

🗚 IP List															×
DEV# SET	MA	٩C		Т	CP AD	DR	NI	ET MAS	K		GATEW	JAY		TYPE	
1 NO 0	0 14 B3	00 00	) 4B	192	1	6 42	255 2	55 259	5 0	0	0	0	0	OMNI-200	▲
Click the IP in the	here to s addres tester.	set													•
														OK	Cancel

CICAPP-0005 (V1.0) April 4, 2008



When done, click OK to get back to the main OMNI-200 configuration screen.

#### 2.3 Verifying Communications

Once the IP address is configured, click **TEST LINK** to verify communication between the software and the tester. If successful, it will display **Link Good** in the message area. If not, an error message will be displayed.

Common causes for TEST LINK to fail are:

. . . .

### 3 Sample Rate and Trigger Mode



To set the sample rate, click in the arrows in the Sample Rate box. The Trigger mode should be set to Internal which will cause the tester to sample at the desired rate using its internal clock.

# 4 Config Options

Config Options	
coming options	
Continuous Mode	
32-bit Mode	
Dynamic Gain	
Internal Reference	
Time Slew	
Increment Caps	
Auto Stop	
No Powerdown	
Synch Outputs On	

OPTION	DEFAULT	DESCRIPTION
Continuous Mode	OFF	In continuous mode, the output drive to the probe is always left on. The advantages of continuous mode are that all of the channels are sampled at the same time and it allows



		for higher sampling rates.
		The disadvantages are that only one time slot can be used and the drive voltage for each frequency is
		reduced since the total drive for all frequencies in the
		timeslot must not exceed 100%
		timesiot must not exceed 100%.
		For most applications, this should be OFF.
32-bit Mode	ON	If enabled, raw eddy current data will be stored as 32-
		bit values instead of the usual 16-bit. The advantage
		of 32-bit mode is that signals are much less likely to
		saturate. The disadvantage is that the data files will be
		twice as large.
Dynamic Gain	ON	This should always be ON.
Internal Reference	ON	This should be OFF if a physical reference probe is
		being used, and ON if the internal reference feature is
		being used.
		When ON, it is important to set one of the coils to
		ABS mode (see XXX).
Time Slew	OFF	Time Slew will cause the raw data values for
		timeslots 2 and above to be interpolated so that they
		are effectively sampled at the same time as timeslot 1.
		The advantage of this is that it will typically greatly
		reduce mix residuals.
Increment Caps	OFF	This should always be OFF.
Auto Stop	OFF	This should always be OFF.
No Powerdown	ON	This should always be ON.
Synch Outputs On	OFF	This should always be OFF.

# 5 Probe Options

Probe Options -	
Ghent On	
High Speed RPC	
Array Outputs On	
X-Probe Clock On	
Smart Probe	

These options should all be OFF unless you are using the given type of probe.

# 6 AUX Chans



AUX Chans							
Time							
Encoders							
RMS							
Gains							
Sample Index							
Status & IO							
Sample Flags							

These options should normally all be OFF since only specialized applications can use them.

# 7 Delay and Encoders

CTOT	DELAY	INTEG	TIME	]	EN	COI	DEF	5
SLUI	(uS)	(wave)	(uS)	1	2	3	4	5
1	54	43	162					
2	54	43	198					
3	54	43	270					
4	54	2	75					

# 8 Input Gains

CTOT		CC	IL I	NPUT	GAI	N (d)	B)	
SLUI	1	2	3	4	5	6	7	8
1	20	14						
2	20	14						
3	20	14						
4	20	14						

# 9 Coil Options

COIL	TYP	BC	HN	RFT	0	CAP	NAME
1	DIF				В	33	OK
2	ABS				A	0	DAVECOIL
3							
4							
5							
6							
7							
8							

# 10 Balance, Ref Null, and Hardware Null

BALANCE	REF NULL	HW NULL
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After the configuration is completely setup, put the probe in a clean section of tubing and click the BALANCE, REF\_NULL, and HW\_NULL buttons in that order.

# **11 Errors**

If the configuration is not valid, values will be displayed in red as shown below:

OMNI-200 1 - bobbin.cfg     File Edit View Probe Tools Util																			×
TEST LINK TESTER ON EXPLAIN BALANCE REF	NULL	HW NU	ш								A	BORT	P0V	VER DOWN	I IP Add	dress 19	2.1.6	. 42	
Config Options Scope Waveform Freq Sweep Status																			
Sample Rate 1,520 Num Chan 8 Trigger Intern Config Options Probe Options AUX Chans Continuous Mode Ghert On Time	TIME SLOT	DRIVER				COIL													
Dynamic Gain Array Outputs On J RMS Internal Reference X-Probe Clock On J Gains Time Slew Smart Probe Sample Index J		1	400.000	KHz	100.00%	1	2		-			-							
Increment Caps Status & IU _ Auto Stop Sample Flags _ No Powerdown Synch Outputs On	1																		
SLOT         DELAY (uS)         INTEG (wave)         TIME (uS)         ENCODER 1         ENCODER 2         A         S           1         54         43         162         4         4         54         43         198         4         3         54         43         200         4         54         2         75         5	2	1	300.000	KHz	100.00%	3	4												
SLOT         COIL INPUT GATN (dB)           1         2         3         4         5         6         7         8           1         20         14         4         5         6         7         8           2         20         14         4<	3	1	200.000	KHz	100.00%	5	6												
COIL     TYP     BC     HN     RFT     CAP     NAME       1     DIF     B     33     0K       2     ABS     A     0     DAVECOIL       3     4     5     6     6	4	1	100.000	KHz	100.00%	7	8												
7 8 707 of 657 uS																			ancel

When this occurs, click the **EXPLAIN** button to see the cause of the error and a set of remedies.

EddyVi	ision 🔀
į)	The total time used is too large starting with slot 4. Decrease the sample rate, delays, or wave counts.
	ОК

In this case, the sample rate is too high.