PRODUCT ADVISORY NOTICE

KEEPING YOU INFORMED OF PRODUCT CHANGES

To: **All Customers, Sales Representatives and Distributors**

Date: **September 25, 2009**

Subject: **SMT Optics added to 62H Manufacturing Process**

Grayhill has recently completed qualification of the 62H Series encoder utilizing surface mount technology optics. Currently, Grayhill uses die and wire bond optics in the manufacturing of all standard 62H, 62HN, 62HR, and 62HS part numbers. Because of the opportunity to increase capacity, Grayhill will introduce surface mount optics in its production process on October 19, 2009.

The initial test reports are complete and available on the www.grayhill.com/about/PAN.aspx. As additional tests are completed, reports will be housed in the same place.

Samples of the 62H series with the surface mount optics are available upon request.

The following part numbers have been affected:

62HN22-H9-P	62HS22-H9-080C	62H2222-H9-030C
62HN22-H9-020C	62HS22-H9-100S	62H2222-H9-040C
62HN22-H9-040C	62HS30-H0-040C	62H2222-H9-040S
62HN22-H9-060S	62HS30-H9-P	62H2222-H9-050C
62HN30-H9-P	62HS30-H9-020C	62H2222-H9-060S
62HN30-H9-040C	62HS30-H9-030C	62H2222-H9-140C
62HN30-H9-040S	62HS30-H9-040C	62H3030-H0-040C
62HN30-H9-100C	62HS30-H9-050S	62H3030-H0-040S
62HS22-H0-P	62HS45-H0-P	62H3030-H0-080S
62HS22-H0-020C	62HS45-H9-P	62H3030-H9-P
62HS22-H0-050S	62HS45-H9-020C	62H3030-H9-020C
62HS22-H0-060S	62HS45-H9-040C	62H3030-H9-040C
62HS22-H0-150S	62H2222-H0-P	62H3030-H9-040S
62HS22-H9-P	62H2222-H0-015C	62H3045-H9-P
62HS22-H9-020C	62H2222-H0-015S	62H4530-H0-020C
62HS22-H9-020S	62H2222-H0-020C	62H4530-H0-060S
62HS22-H9-030C	62H2222-H0-020S	62H4530-H9-020C
62HS22-H9-035C	62H2222-H0-035C	62H4545-H0-040S
62HS22-H9-040C	62H2222-H0-060S	62H4545-H9-020C
62HS22-H9-050C	62H2222-H9-P	62H4545-H9-120S
62HS22-H9-050S	62H2222-H9-020C	

Please contact your Grayhill, Inc. sales associate for further information.

Summary Table

TEST DESCRIPTION	Test Results	Testing Notes
LED Degradation Encoder # 61 –80	Pass	1000 Hours, 85°C, Powered 2.2k Pull-Ups, Low-Low State
Vibration Encoder # 16 –17- 18 19 –20	Pass	Per MIL-STD-202, Method 204
Mechanical Shock Encoder # 16 –17- 18 19 –20	Pass	Per MIL-STD-202, Method 213 100g, Half-Sine, 6ms 100g, Sawtooth, 6ms
Humidity Encoder # 21 –22 – 23 24 –25	Pass	Per MIL-STD-202, Method 103B 90-95% Humidity
Thermal Shock Encoder # 26 –27 – 28 29 –30	Pass	Per MIL-STD 202 Method 107

LED Degradation

Periodic readings in mV		
Low states A and B outputs		
Supply = 5.0V, 2.2K pull-up resistors		
Test Duration:	1000 hours	
Completion:	8/7/09	

Encoder	Channel A	Channel B
61	23	21
62	22	20
63	22	20
64	22	20
65	22	20
66	23	21
67	22	20
68	22	20
69	22	20
70	23	21
71	22	20
72	22	20
73	23	20
74	22	20
75	22	20
76	23	20
77	23	21
78	23	20
79	23	21
80	22	20

Vibration & Shock Testing

Initial Output Code
05-15-2009

Logic High (Vout >=3.8V) Logic Low (Vout <=0.8V)

Switch # 16 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

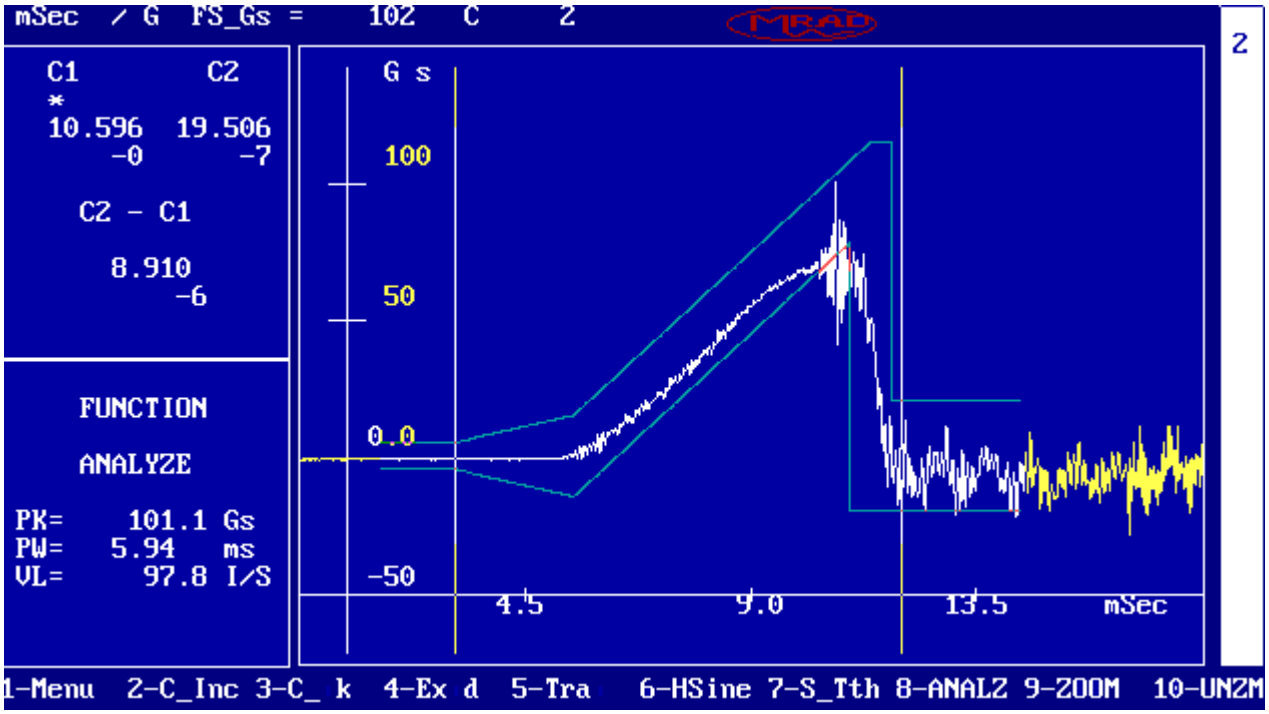
Switch # 17 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

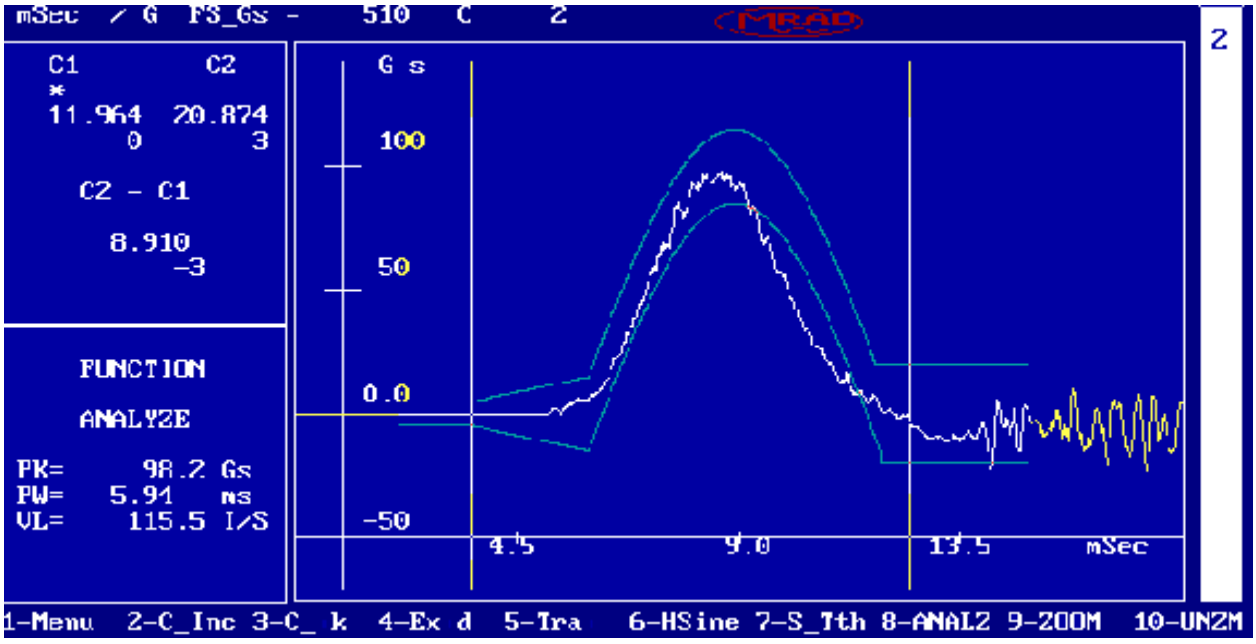
Switch # 18 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.12	.13
2	4.94	.11		4.93	.12
3	4.91	4.92		4.92	4.92
4	.11	4.92		.11	4.93

Switch # 19 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.10	.12		.12	.13
2	4.92	.11		4.92	.12
3	4.91	4.91		4.91	4.91
4	.12	4.93		.13	4.92

Switch # 20 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.12		.13	.12
2	4.94	4.93		4.93	.11
3	4.91	4.92		4.92	4.92
4	.13	.10		.12	4.93

Vibration & Shock Profiles
05-15-2009





Output Code After Vibration & Mechanical Shock
08-05-2009

Logic High (Vout >=3.8V) Logic Low (Vout <=0.8V)

Switch # 16 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.12	.13
2	4.6	.14		4.7	.12
3	4.7	4.8		4.8	4.7
4	.14	4.8		.13	.14

Switch # 17 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.14	.13		.13	.14
2	4.7	.12		4.9	.14
3	4.8	4.7		4.8	4.7
4	.13	.14		.14	.13

Switch # 18 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.12	.13		.14	.13
2	4.7	.14		4.8	.14
3	4.8	4.7		4.8	4.9
4	.14	.13		.14	.14

Switch # 19 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.12	.13		.13	.14
2	4.7	.12		4.6	.14
3	4.8	4.7		4.7	4.8
4	.13	.14		.14	4.8

Switch # 20 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.14	.13		.14	.13
2	4.8	.13		4.9	.14
3	4.9	4.9		4.9	4.8
4	.14	4.8		.14	4.8

Humidity Testing

Initial Output Code
05/15/2009

Logic High (Vout >=3.8V) Logic Low (Vout <=0.8V)

Switch # 21 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

Switch # 22 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

Switch # 23 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.12	.13
2	4.93	.11		4.93	.12
3	4.91	4.92		4.92	4.94
4	.11	4.92		.11	4.93

Switch # 24 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.10	.12		.12	.13
2	4.92	.11		4.92	.12
3	4.91	4.91		4.91	4.91
4	.12	4.93		.13	4.92

Switch # 25 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.12		.13	.12
2	4.94	.13		4.93	.14
3	4.91	4.92		4.92	4.92
4	.13	4.94		.12	4.93

Output Code After Humidity
05/15/2009

Logic High (Vout >=3.8V) Logic Low (Vout <=0.8V)

Switch # 21 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.14	.14		.12	.10
2	4.8	.14		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

Switch # 22 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

Switch # 23 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.12	.13
2	4.93	.11		4.93	.12
3	4.91	4.92		4.92	4.94
4	.11	4.92		.11	4.93

Switch # 24 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.10	.12		.12	.13
2	4.92	.11		4.92	.12
3	4.91	4.91		4.91	4.91
4	.12	4.93		.13	4.92

Switch # 25 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.12		.13	.12
2	4.94	.13		4.93	.14
3	4.91	4.92		4.92	4.92
4	.13	4.94		.12	4.93

Thermal Shock (Environmental) Testing

Initial Output Code
04/27/2009

Logic High (Vout >=3.8V) Logic Low (Vout <=0.8V)

04/27/2009

Switch # 26 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

Switch # 27 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.11	.12		.12	.10
2	4.93	.11		4.93	.11
3	4.91	4.92		4.92	4.91
4	.10	4.93		.10	4.92

Switch # 28 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.12	.13
2	4.94	.11		4.93	.12
3	4.91	4.92		4.92	4.92
4	.11	4.92		.11	4.93

Switch # 29 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.10	.12		.12	.13
2	4.92	.11		4.92	.12
3	4.91	4.91		4.91	4.91
4	.12	4.93		.13	4.92

Switch # 30 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.12		.13	.12
2	4.94	.13		4.93	.13
3	4.91	4.92		4.92	4.92
4	.13	4.93		.12	4.93

OutPut Code After Thermal Shock
05/11/2009

Logic High (Vout >=3.8V) Logic Low (Vout <=0.8V)

Switch # 26 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.13	.14
2	4.93	.14		4.93	.14
3	4.91	4.92		4.91	4.92
4	.13	4.93		.13	4.93

Switch # 27 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.14		.13	.14
2	4.93	.14		4.93	.14
3	4.91	4.92		4.91	4.92
4	.13	4.93		.13	4.93

Switch # 28 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.10	.12		.12	.13
2	4.92	.11		4.92	.12
3	4.91	4.91		4.91	4.91
4	.12	4.93		.13	4.92

Switch # 29 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.13	.12		.13	.12
2	4.94	.13		4.93	.13
3	4.91	4.92		4.92	4.92
4	.13	4.93		.12	4.93

Switch # 30 Position	Channel A Lead Output	Channel A Lag Output		Channel B Lead Output	Channel B Lag Output
1	.12	.13		.13	.12
2	4.92	.12		4.93	.13
3	4.91	4.91		4.92	4.92
4	.13	4.92		.12	4.93