

MATTEL ELECTRONICS

June 21, 1979

Ken Greenberg
General Instrument Corp.
Micro Electronics Group
600 W. John St.
Hicksville, NY 11802

Dear Ken:

Subject: Sync level amplitude evaluation.
Reference our several phone conversations on this subject.

I have evaluated the emulated version of the color ship 8915 I received from you on 6/18/79. I have documented the video input level to the modulator with resistor values of R3=22K, R10=22K, R11=22K, R14=5.6K, R1=2.7K, and R9 18K from video input to B-. I have also documented the RF detected output level. I have enclosed copies of those levels.

Below is a comparison of the results.

	<u>Mattel</u>	<u>Before</u>	<u>After</u>	<u>Fairchild</u>	<u>NTSC</u>
		<u>Change</u>	<u>Change</u>	<u>Game</u>	<u>Spec.</u>
Detected Video Sync	100%		100%	100%	100%
Detected Video Sync %	16%		22%	27%	25% \pm 2.5%
Detected Video Blanking	84%		78%	73%	75% \pm 2.5%
Detected Video Peak					
White	27%		27%	33%	12.5% min.
Detected Video Zero					
Carrier	0%		0%	0%	0%

Please note the sync level with the change is still 05% below NTSC specs. However, most TV sets should function with a 20% minimum sync level.

As I have reported to you, we are having sync failure problems with the present 16% sync level on GE and older Sylvania make TV sets.

It is urgent that we increase the sync level immediately. Mr. A. Secor has directed this change to be a running charge and be coordinated with a required change in color image rendition.



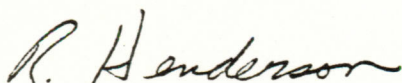
Mattel Toys, a division of

Mattel, Inc. General Offices, 5150 Rosecrans Avenue, Hawthorne, California 90250 Telephone (213) 644-0411 Twx - 910 - 325 - 7162

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Bob Asplund has tested the unit with the increased sync level on his older Sylvania make TV, and had satisfactory results where before it was completely not usable.

Sincerely yours,



Roland Henderson
Manager Sub-contract Reliability
and Quality Assurance

RH/am

cc: Dick Norwood, GI
Bob Asplund, GTE
Al Secor, Mattel ✓
Dave Chandler, Mattel
Cliff Perry, Mattel w/copy of photos

MATTEL ELECTRONICS

June 27, 1979

Mr. Al Secor
MATTEL ELECTRONICS
A Division of Mattel Inc.
5150 Rosecrans Avenue
Hawthorne, Calif. 90250

Dear Al:

Subject: Intellivision problem and status report as of 6-27-79.

1. GI chip sets - Sylvania has 125 sets less RAMs that were previously tested on prototype IMI tester with a known good RAM. The prototype tester only tested to nominal 5 and 12 volt supply lines.
 - a. Testing of chip sets on new IMI tester with switchable $\pm 5\%$ voltage on the 5 and 12 volt supply lines, results in some of the original chip sets now failing the test.
 - b. 54 Rams were received Monday night 6-25. The first six tried, with what was believed to have been a good chip set, one that worked with another RAM, failed all six RAMs.
 - (1) Changing the chip set to another group allowed all six previously failed RAMs to pass.
 - (2) Changing the individual chips from the one that caused failure of the RAMs to the one that now passes the RAMs resulted in the stic chip from the original group as being the malfunctioning chip in the set.
 - c. The previously tested 125 chip sets are to be retested on the new IMI tester as well as the new RAMs. This is the first attempt for us to test to the full voltage tolerance. We must establish complete integrity in this testing. Correlate Sylvania and GI results. I would like to have Nick Sramek assigned to handle the Sylvania on sight control and liaison with GI.
 - d. IMI testers test integrity must be established. Since GI will not provide this service to Mattel, I have the assignment to approve the first completed tester built by Sylvania.



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4. Inlay 2609-4529 and 2609-4519 - Production pieces were put on a top housing and tested for storage temperature requirements of +70°C and -40°C. It was determined that cold storage of 0°F caused the inlay to have severe wrinkles when the unit is returned to 25°C room ambient.
 - a. I have asked to have Mattel plastic experts to test housings with the inlays, that were delivered to Mattel at Hawthorne for die cutting and proper size checkout, to confirm my results and determine a solution to the problem.
 - b. Sylvania inlay supplier is testing the unit to also determine a solution.
5. Hand controller malfunction during temperature cycling, high humidity, and reported failures during normal assembly and use test.
 - a. The 15% failure rate after production assembly is being analyzed by Sylvania to determine what is required to make the rejects function properly.
 - b. The humidity test failures at Sylvania are being analyzed to determine the cause of malfunction and suggested corrective action.
6. The heat sink parts are being procured for the CPU, 12 volt and 5 volt regulators. These will be added for the start of production.
7. UL requirement for .031" wall insulation on the 22 AWG wire on the on/off switch wires and increased thickness of the power supply board fiber barrier will be changed for the start of production.
8. Color chip sync level change has been evaluated and report issued 6-21-79. This change must be made in the color chip as soon as possible.
9. Hot stamped upper housing - 1200 pieces of the first production were received and have serious over run of the hot stamping of approximately 1/8" on the top edge and 1/4" on the ends. No acceptable clean-up of the hot stamp over run has been found at this time.
10. Intellivision master component quality requirements will be issued 6-29 with cover letter to T. Dineen to release to Sylvania as part of the agreement.

Sincerely yours,

Roland Henderson

Roland Henderson
Manager Sub-contract Reliability
and Quality Assurance

RH:mas

cc: Dave Chandler
Cliff Perry
Tom Dineen
D. Bogart