

To: Customers

NLT Report
Tracking Number: NLT-PP-5156

This report is to inform evaluation results of applicable products whose change has been reported with the document NLT-PP-4992.

1. Product Type #

NL10276BC13-01, NL10276BC13-01C

2. Evaluation Results

The changed products were evaluated and no problems have been found.

Evaluated items are below.

- (1) Power supply current (shown on page 1)
- (2) Optical Characteristics (shown on page 2)
- (3) Reliability (shown on page 3)
- (4) EMI (shown on page 4)

(1) Power supply current

Since the applicable products NL10276BC13-01, and 01C have the same circuit design, NLT measured the power supply current of NL10276BC13-01C as a representative one.

Power supply current evaluation results of NL10276BC13-01C are below.

		Display pattern	Spec	After-changed product	Current
Power supply current	VCC= 3.3V	Checked flag pattern	410 mA (Typ.)	285 mA	425 mA
		Pattern for maximum current	660 mA (Max.)	356 mA	520 mA

(2) Optical Characteristics

- NL10276BC13-01

Parameter		Unit	Criteria	After-changed product	Current
Luminance		cd/m ²	500typ., 300min.	601	528
Contrast ratio		—	500typ., 300min.	831	623
Luminance uniformity		—	1.25typ., 1.4max.	1.26	1.21
Chromaticity (White)	X	—	0.313±0.05	0.304	0.305
	Y	—	0.329±0.05	0.328	0.324
Color gamut		%	36typ., 33min.	41	36
Viewing angle	Right	°	80typ., 70min.	>80	>80
	Left		80typ., 70min.	>80	>80
	Up		80typ., 70min.	>80	>80
	Down		60typ., 50min.	>60	>60

- NL10276BC13-01C

Parameter		Unit	Criteria	After-changed product	Current
Luminance		cd/m ²	650typ., 390min.	787	740
Contrast ratio		—	500typ., 300min.	730	534
Luminance uniformity		—	1.25typ., 1.4max.	1.24	1.21
Chromaticity (White)	X	—	0.313±0.05	0.304	0.305
	Y	—	0.329±0.05	0.331	0.331
Color gamut		%	36typ., 33min.	41	36
Viewing angle	Right	°	80typ., 70min.	>80	>80
	Left		80typ., 70min.	>80	>80
	Up		80typ., 70min.	>80	>80
	Down		60typ., 50min.	>60	>60

(3) Reliability

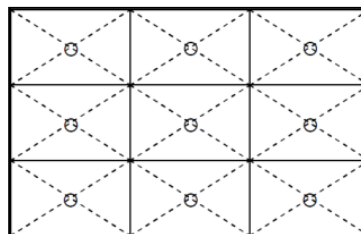
Since the applicable products (NL10276BC13-01 and 01C) have the almost same structure design, NLT tested the reliability of NL10276BC13-01C as a representative one.

Reliability test results of NL10276BC13-01C are below.

Test item	Condition	Judgment	Note1	Results
High temperature and humidity (Operation)	① 60 ± 2°C, RH= 90%, 240hours ② Display data is black.	No display Malfunctions		OK
High temperature (Operation)	① 70 ± 3°C, 240hours ② Display data is black.			OK
Heat cycle (Operation)	① -20 ± 3°C...1hour 70 ± 3°C...1hour ② 50cycles, 4hours/cycle ③ Display data is black.			OK
Thermal shock (Non operation)	① -30 ± 3°C...30minutes 80 ± 3°C...30minutes ② 100cycles, 1hour/cycle ③ Temperature transition time is within 5 minutes.			OK
ESD (Operation)	① 150pF, 150Ω, ±10kV ② 9 places on a panel surface Note2 ③ 10 times each places at 1 sec interval			OK
Dust (Operation)	① Sample dust: No. 15 (by JIS-Z8901) ② 15 seconds stir ③ 8 times repeat at 1 hour interval			OK
Vibration (Non operation)	① 5 to 100Hz, 19.6m/s ² ② 1 minute/cycle ③ X, Y, Z directions ④ 120 times each directions			No display Malfunctions
Mechanical shock (Non operation)	① 539m/s ² , 11ms ② ±X, ±Y, ±Z directions ③ 5 times each directions	No physical Damages	OK	

Note1: Display and appearance are checked under environmental conditions equivalent to the inspection conditions of defect criteria.

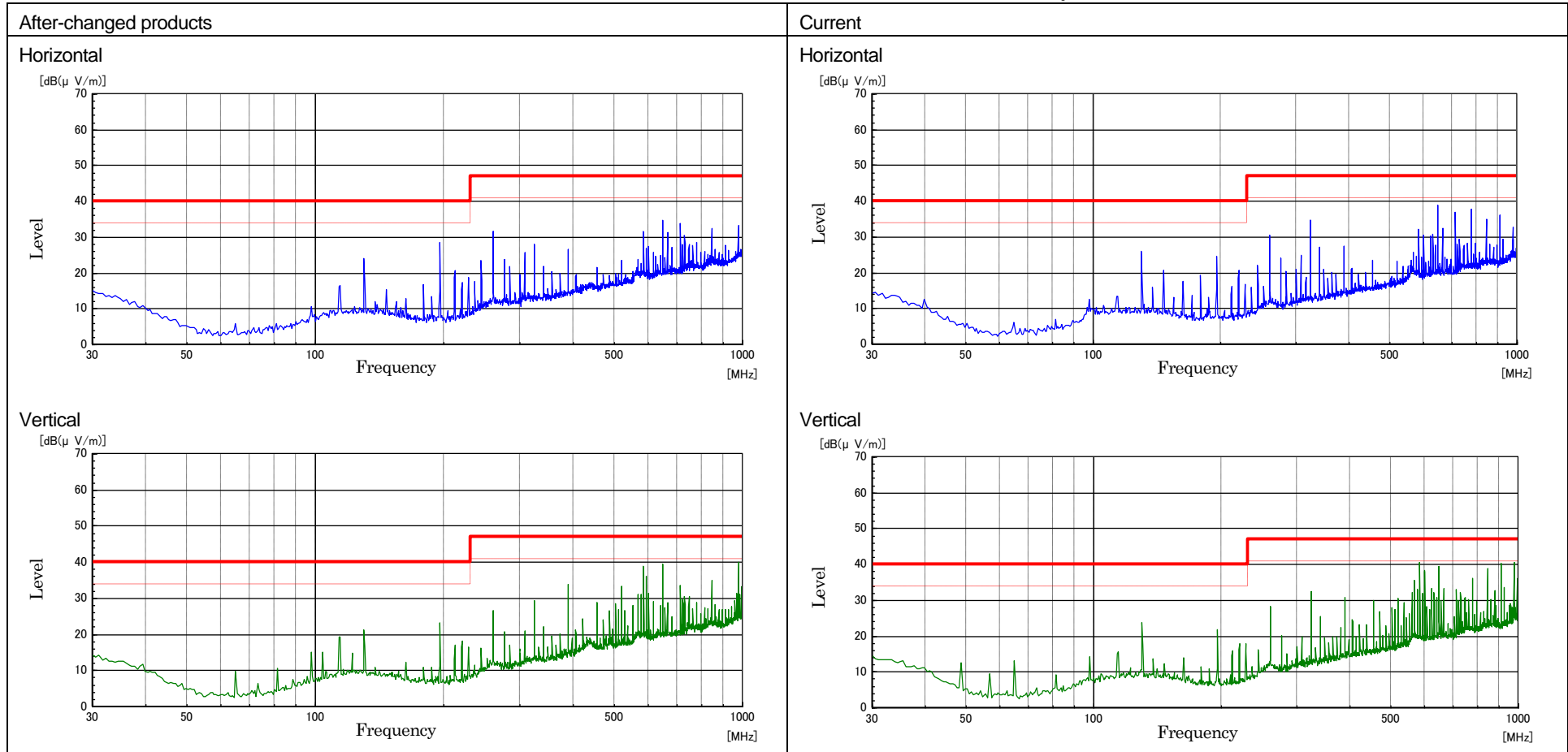
Note2: See the following figure for discharge points.



(4)EMI

Since the applicable two products NL10276BC13-01 and 01C have the almost same structure and same circuit design, NLT measured the EMI of NL10276BC13-01C as a representative one.

EMI data of NL10276BC13-01C at VCC= 3.3V, CLK= 65.0 MHz, 3m method. Those data are for reference only.



In case there are any questions, please feel free to contact sales or sales representative of NLT.



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