Prepared for:

dapu telecom co.,ltd

Failure Analysis Report

Customer Request No.	:
Product Name	: Crystal oscillator
KDS Type Name	: DSA321SDN 20.000MHz
KDS Report No.	: A123A270-9

Date: January 29, 2024

DAISHINKU CORP.
Quality Assurance Department

K.Ohshu / Quality Assurance Manager

D1. Establish The Team　　チーム結成

K. Ohshu / Quality Assurance Manager
M.Abe / Quality Assurance Manager
A. Hirao / Production Department Manager
S.Ueta / Production Department Manager
I.Morita / Quality Assurance Tottori Group Manager
M.Komon / Quality Assurance Tottori Group Engineer

D2. Describe The Problem　　問題描写

Problem Observations by Customer : Aging defect
Location of occurrence : End-user
Date Code : 223(23th week of 2022)
Customer P/N : -
KDS P/N : 1XTV20000CDA
Type Name : DSA321SDN 20.000MHz
Return Quantity : 26pcs

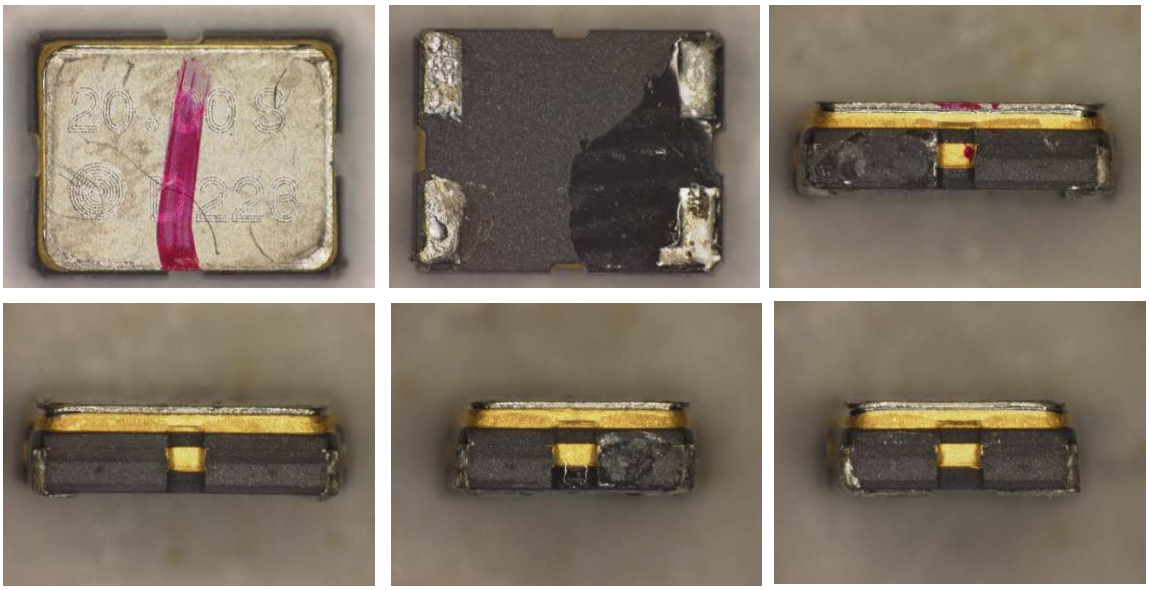
Table1. Information of your company

Customer SN.	KDS No.	Date Code	Problem Observations	Return status
-	1～26	223	Aging defect	Oscillator only

<1> Returned product confirmation result / ご返却品確認結果

1. Appearance / 外観結果

A representative photo showing the appearance of the returned parts is shown below.
No abnormalities were confirmed.
ご返却品の外観を確認した代表写真を下記に示します。異常は確認されませんでした。



Representative photo1. No.1

2. The electrical characteristics / 電気的特性確認結果

The results of investigating the electrical characteristics of the returned parts are shown below.
No. 9, No. 10, and No. 26 were within the specifications and had no problems, but it was confirmed that the frequencies of the others were outside ±1.5 ppm.
ご返却品の電気的特性を調査した結果を下記に示します。No.9 と No.10 及び No.26 は仕様規格内で問題はありませんでしたが、その他は周波数が±1.5ppm を外れている事が確認されました。

Table2. Electric characteristic investigation result

No.	Date Code	Frequency	Output Voltage	Current Consumption	Frequency Control		Judgment
		±1.5ppm	0.8vp-p min	1.5mA max	0.5V	+2.5V	
					-15～-9ppm	+9～+15ppm	
1	223	-2.86	1.01	1.00	-10.63	12.93	No Good
2	223	-2.91	1.01	1.03	-10.75	12.64	No Good
3	223	-2.23	1.01	1.02	-10.82	12.71	No Good
4	223	-1.78	1.01	1.03	-10.94	12.21	No Good
5	223	-1.66	1.01	1.02	-11.45	13.37	No Good
6	223	-2.47	1.00	1.03	-10.34	12.48	No Good
7	223	-1.65	1.01	1.04	-10.31	12.60	No Good
8	223	-2.21	0.99	1.04	-10.89	12.87	No Good
9	223	-1.34	1.00	1.02	-10.87	12.81	Good
10	223	-1.46	1.02	1.05	-10.66	13.13	Good
11	223	-2.00	1.00	1.03	-11.15	13.25	No Good
12	223	-1.65	1.02	1.03	-10.80	12.77	No Good
13	223	-1.94	1.01	1.06	-10.19	12.64	No Good
14	223	-2.05	1.00	1.02	-10.85	12.74	No Good
15	223	-2.12	1.01	1.02	-10.50	12.50	No Good
16	223	-2.08	1.02	1.09	-10.07	12.80	No Good
17	223	-1.70	1.01	1.02	-11.19	13.28	No Good
18	223	-1.90	1.01	1.01	-10.87	12.24	No Good
19	223	-1.62	1.006	1.03	-11.06	13.18	No Good
20	223	-2.20	1.01	1.04	-10.70	12.80	No Good
21	223	-1.72	1.00	1.03	-11.18	13.22	No Good
22	223	-1.58	1.01	1.02	-11.21	13.37	No Good
23	223	-1.81	1.00	1.03	-11.04	13.46	No Good
24	223	-2.28	1.01	1.02	-10.99	13.61	No Good
25	223	-2.05	1.02	1.04	-11.15	13.22	No Good
26	223	-1.32	1.00	1.03	-11.23	13.30	Good

Test Condition ： Vcc=+3.3V, Vcont=+1.5V, LOAD=10kohm//10pF

3.Frequency temperature characteristic / 周波数温度特性

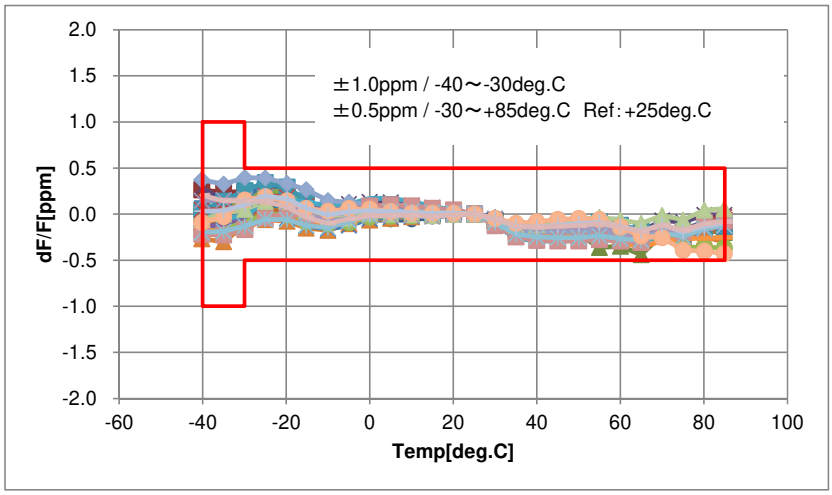
We investigated the frequency temperature characteristics of returned parts.

Test data is shown in the following.

The problem was not confirmed by the Temperature characteristic testing.

ご返却品の周波数温度特性を調査した結果を下記に示します。異常は確認されませんでした。

Graph1. Frequency temperature characteristic test result



TA=-40～+85deg.C　Step=5deg.C , Ref:TA=+25deg.C

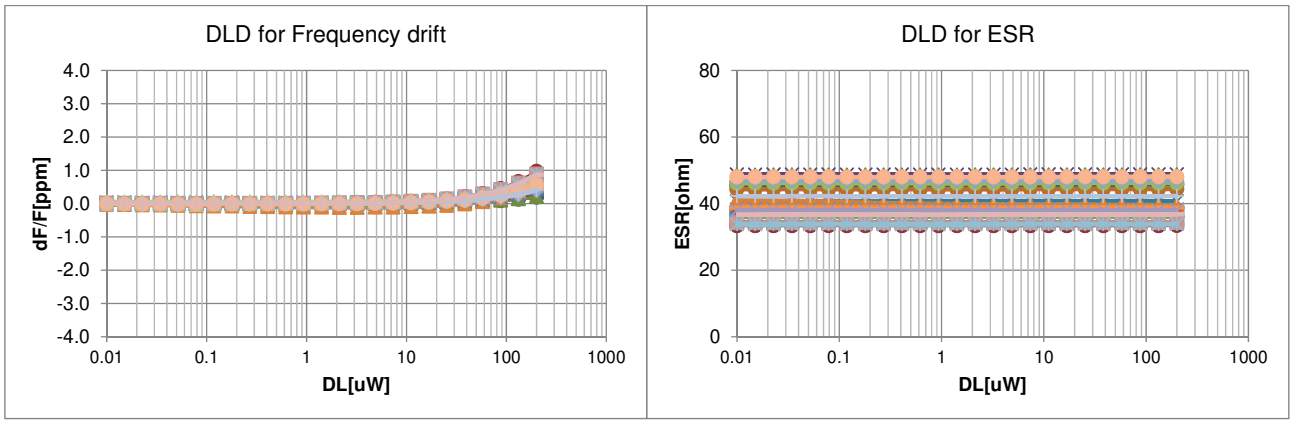
4.DLD characteristic　/ DLD 特性確認結果

We investigated the DLD characteristics of returned parts.

Test data is shown in the following. No abnormalities were confirmed.

ご返却品の DLD 特性を調査した結果を下記に示します。異常は確認されませんでした。

Graph2. DLD characteristic test result



5. About inquiries / お問合せについて

(1) 3 items to be confirmed by your company / 貴社確認依頼 3 項目

1) Is there a change in IC? / IC は変化があるのか？

⇒Answer：Not changed

2) Are there any changes in the adhesive? / 接着剤の変化があるのか？

⇒Answer：Not changed

3) Is there a change in the aging time of mass-produced products? /
量産品のエージング時間の変化があるのか？

⇒Answer：Not changed

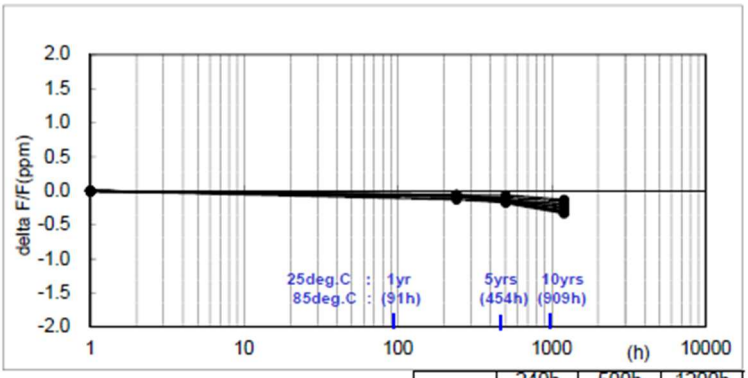
(2) Request for our aging test data / 弊社のエージング試験データ依頼

Our reliability aging test data is shown below, and it is -0.079ppm at 240H.

弊社の信頼性エージング試験データを下記に示しますが、240H で-0.079ppm になります。

Aging Test Data
Product : TCXO
Type : DSA321SDN 20.000MHz
(Test Data On DSB321SDN 19.200MHz substituted for DSA321SDN 20.000MHz)

Type : DSB321SDN 19.200MHz (n=10)
Test Prcedures :
Keep sample(s) at 85 +/- 2 deg.C for 1200 hours.
* It is converted aging data at 85deg.C to aging characteristics at 25deg.C
Result :



	240h	500h	1200h
X-bar	-0.079	-0.137	-0.239
3S	0.061	0.101	0.216
MAX	-0.06	-0.06	-0.13
MIN	-0.13	-0.18	-0.33

6. Additional aging test data / 追加エージング試験データ（240H）

The reliability aging test data for the 26 returned parts is shown below, and it is -0.077ppm at 240H. Also, it is equivalent to 3 of our keep sample products for comparison, and no differences were observed.

240H standard: ±1.0ppm

ご返却品 26 個の信頼性エージング試験データを下記に示しますが、240H で-0.077ppm になります。

また、比較用の弊社キープサンプル品 3 個と同等で差異は確認されませんでした。

240H 規格：±1.0ppm

Aging Test Data

Product : TCXO

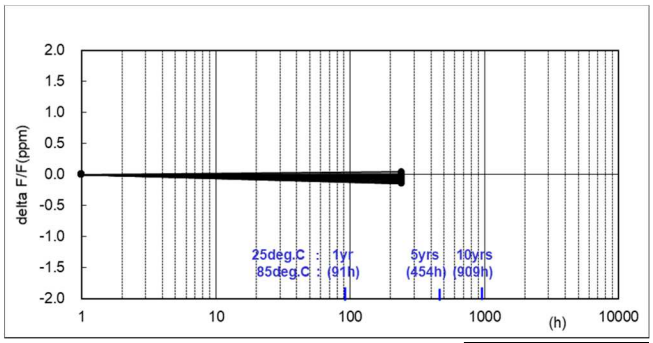
Type : DSA321SDN 20.000MHz

Test Prcedures :

Keep sample(s) at 85 +/- 1 deg.C for 240 hours.

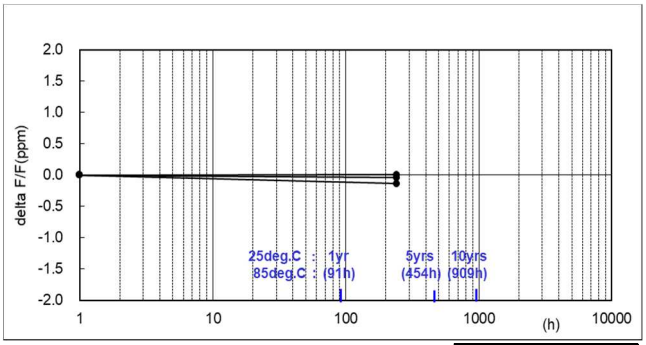
* It is converted aging data at 85deg.C to aging characteristics at 25deg.C

Returned parts（26pcs）



	240h
X-bar	-0.082
3S	0.148
MAX	0.04
MIN	-0.15

Keep sample（3pcs）



	240h
X-bar	-0.057
3S	0.217
MAX	0.01
MIN	-0.14

6-2. Additional aging test data / 追加エージング試験データ（500H）

The reliability aging test data for the 26 returned items is shown below, and it is -0.152ppm at 500H. Also, it is equivalent to 3 of our keep sample products for comparison, and no differences were observed.

1000H standard: ±2.0ppm

ご返却品 26 個の信頼性エージング試験データを下記に示しますが、500H で-0.152ppm になります。
また、比較用の弊社キープサンプル品 3 個と同等で差異は確認されませんでした。

1000H 規格：±1.0ppm

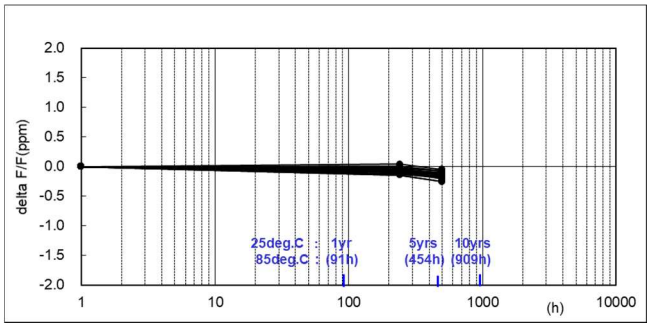
Aging Test Data
Product : TCXO
Type : DSA321SDN 20.000MHz

Test Prcedures :

Keep sample(s) at 85 +/- 1 deg.C for 1000 hours.

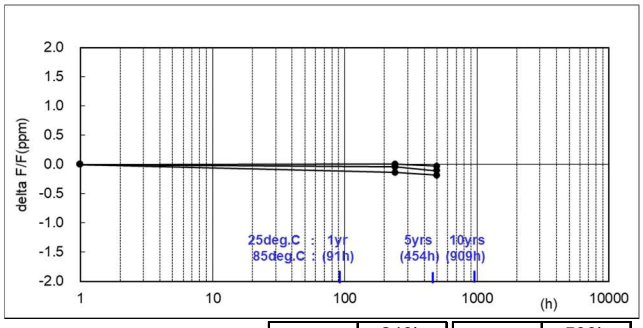
* It is converted aging data at 85deg.C to aging characteristics at 25deg.C

Returned parts（26pcs）



	240h		500h
X-bar	-0.082	X-bar	-0.152
3S	0.148	3S	0.172
MAX	0.04	MAX	-0.05
MIN	-0.15	MIN	-0.26

Keep sample（3pcs）



	240h		500h
X-bar	-0.057	X-bar	-0.110
3S	0.217	3S	0.233
MAX	0.01	MAX	-0.03
MIN	-0.14	MIN	-0.19

In addition, we are continuing to measure 30 additional KEEP samples from lots before and after the defective lot.

尚、引き続き、キープサンプル品は追加で不具合ロットの前後ロットの KEEP サンプル 30pcs 測定を実施しております。

7. Content of inquiry / お問い合わせ内容

(1). It is necessary to check whether there have been any changes to the production process, production materials, etc. /
今までの生産工程、生産材料などが変更したことがあるかどうかを確認必要。
<4. Need to check whether the adhesive of the blank has been changed. 5. Need to check whether the base wants to be changed.>
<(4).ブランクの接着剤を変更したかどうかを確認必要。(5).ベースが変更したいかどうかを確認必要。>
<Answer / 回答>
Regarding the 4M change point, it has been confirmed from the parameters written in the ICs of returned products No. 1 to No. 26 that they are production lot No. 89779002 (products to be launched in May 2022).
As a result of investigating the changes in each process from the vapor deposition process to the shipping process for production before and after production of applicable lot No. 89779002 from April to June 2022, no change history was confirmed.
4M 変化点に関し、ご返却品 No.1～No.26 の IC に書き込まれているパラメーターから製造ロット No. 89779002（2022 年 5 月投入開始品）である事が確認されました。
該当ロット No. 89779002 の前後の製造付 2022 年 4 月～6 月生産の蒸着工程から出荷工程までの各工程変化点調査をおこなった結果、変更履歴は確認されませんでした。

Table3. 4M change point　4M 変化点

Process name	Man	Machine	Material	Method
Base plating	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
Blank bonding/ Adhesive curing	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
Frequency adjustment	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
Seam sealing	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
OVERDRIVE	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method

Process name	Man	Machine	Material	Method
REFLOW(1)	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
AGING	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
LEAK INSPECTION	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
DLD INSPECTION	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
TEMPERATURE CHARACTERISTIC ADJUSTMENT INSPECTION	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
REFLOW(2)	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
AGING(2)	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
STORAGE	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
ELECTRICAL CHARACTERISTICS INSPECTION/MARKING/ APPEARANCE INSPECTION	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method

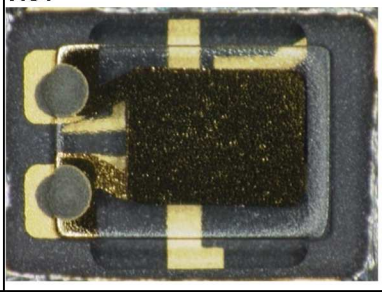
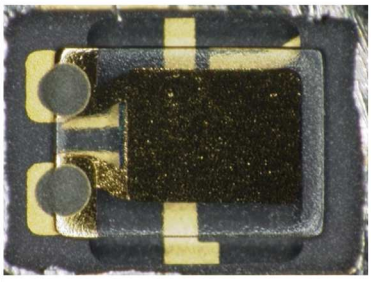
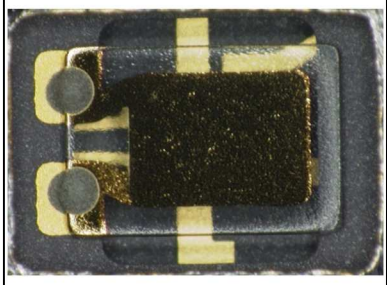
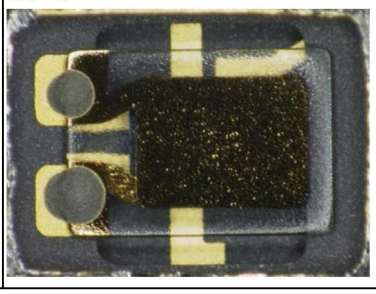
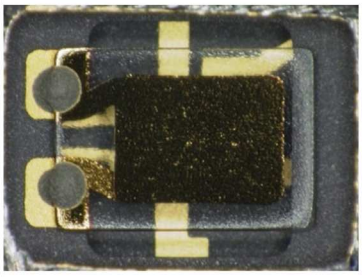
Process name	Man	Machine	Material	Method
OUTGOING INSPECTION	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
TAPING	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method
OUTGOING・PACKING	No change history for worker	The existing equipment will be used, and no new or obsolete equipment will be used.	No change in material	No change in working method

(2). Other factors that affect aging also need to be checked. /
エージングに影響与える他の要因もチェック必要。

< FTA report that affects aging / エージングに影響する FTA 報告書>
In order to confirm the contents of the FTA report that affect aging, we conducted an internal investigation of 5 returned items with your company's permission.
(Reported on December 29, 2023) ＊ See attached document
エージングに影響する FTA 報告書内容を確認するため、貴社のご許可を頂きご返却品 5 個の内部調査を実施報告。(2023 年 12 月 29 日報告) ＊別紙資料参照

(2)-2. Internal opening investigation / 内部開封調査
With your company's permission, we sorted the 26 returned items by frequency deviation value and verified that they had been opened.
The results were within our adhesive mounting standards and no abnormalities were found.
We will continue to compare the product with our quality sample products.
(Non-defective product comparison result report: January 9, 2024)
貴社よりご許可を頂き、ご返却品 26 個の中から周波数偏差値毎に分類し、開封確認をおこないました。
結果、弊社接着搭載規格内であり異常は確認されませんでした。

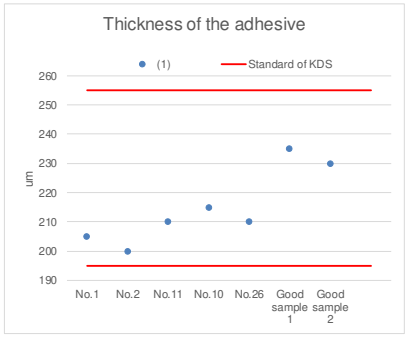
Evaluation product details
(Group A) Frequency deviation approximately -3ppm: No.1, No.2
(Group B) Frequency deviation approximately -2ppm: No.11
(Group C) Frequency deviation approximately -1.5ppm: No.10, No.26
(Group D) Good product sample printing 223: Aging 500H product
評価品詳細
(グループ A)周波数ずれ約-3ppm：No.1、No.2
(グループ B)周波数ずれ約-2ppm：No.11
(グループ C)周波数ずれ約-1.5ppm:No.10、No.26
(グループ D)良品サンプル印字 223：エージング 500H 品

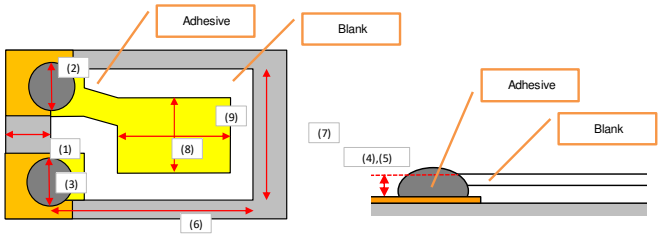
Group A Approximately −3ppm	No1 	No2 
Group B Approximately −2ppm	No11 	–
Group C Approximately −1.5ppm	No10 	No26 

We measured the dimensions of all parts.
It was confirmed that the company satisfied KDS standards.
However, as a result of comparing the adhesive mounting position of the five returned products (No. 1, No. 2, No. 11, No. 10, No. 26) and the non-defective sample, we found that the blank mounting position was on the lower limit of the blank mounting position standard.
各部寸法の測定を調査しました。社内規格を満足している事が確認。
しかしながらご返却品の開封品 5 個（No.1、No.2、No.11、No.10、No.26）と良品サンプルの接着搭載位置を比較した結果、ブランク搭載位置規格の下限側に推移している傾向でした。

Table4.

Standard of KDS		195～255um	310～390um	310～390um	280～360um	280～360um
		Mounting position 搭載位置 (1)	Diameter of the adhesive 下塗布 直径 (2)	Diameter of the adhesive 下塗布 直径 (3)	Diameter of the adhesive 上塗布 直径 (2)	Diameter of the adhesive 上塗布 直径 (3)
No.1	Group A(-3ppm)	205	324	327	326	313
No.2		200	338	375	312	307
No.11	Group B(-2ppm)	210	361	372	320	303
No.10	Group C(-1.5ppm)	215	361	351	304	337
No.26		210	329	335	313	302
Good sample 1	-	235	336	385	315	325
Good sample 2	-	230	335	342	324	301





(3) Mechanism of frequency shifts to the minus / 周波数がマイナスになるメカニズム

If the mounting position is closer to the lower limit, the holding stress on the crystal blank will increase. When conductive adhesive is affected by heat, stress is applied that causes it to expand at high temperatures, so the frequency shifts to the negative side, and when it returns to room temperature, the stress is released and the frequency shifts to the positive side, but eventually Compressive stress remains in the crystal, and the frequency tends to shift toward the negative.

In the Good sample product, the crystal mounting position is from the end of the electrode pad to the tab electrode end a, but in this case, the A side of the target product is closer to the end of the electrode pad, and the adhesive and application position is shifted, resulting in a large holding stress on the crystal blank. Because of this, it is thought that the frequency was shifted to the negative side when new thermal stress was applied because the product was shipped with residual stress remaining in the bonded part.

搭載位置が下限寄りになる事で水晶ブランクへの保持応力が大きくなります。

熱による影響で高温時には膨張する応力が加わるので周波数はマイナスにシフトして、

常温に戻る時は、応力が開放されるので周波数はプラスにシフトしますが、最終的に水晶には、圧縮応力が残留し、周波数はマイナスへシフトする傾向があります。

Good sample 品で水晶搭載位置が電極パット端からタブ電極端 a に対して、今回の対象品 A 側は電極パット端寄りになっており接着剤と塗布位置がずれ水晶ブランクへの保持応力が大きくなった事で、接着部の残留応力が残った状態で出荷した為、新たに熱ストレスが加わった際に周波数がマイナスにシフトしたものと考えられます。

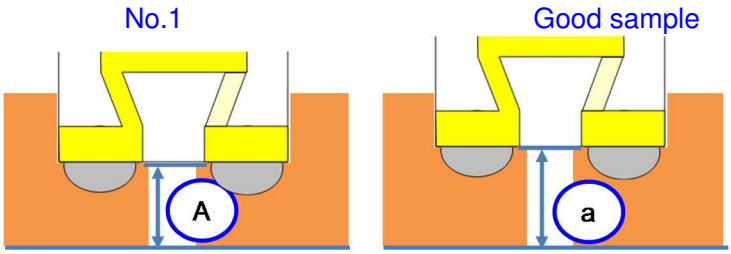


Fig1. Image diagram

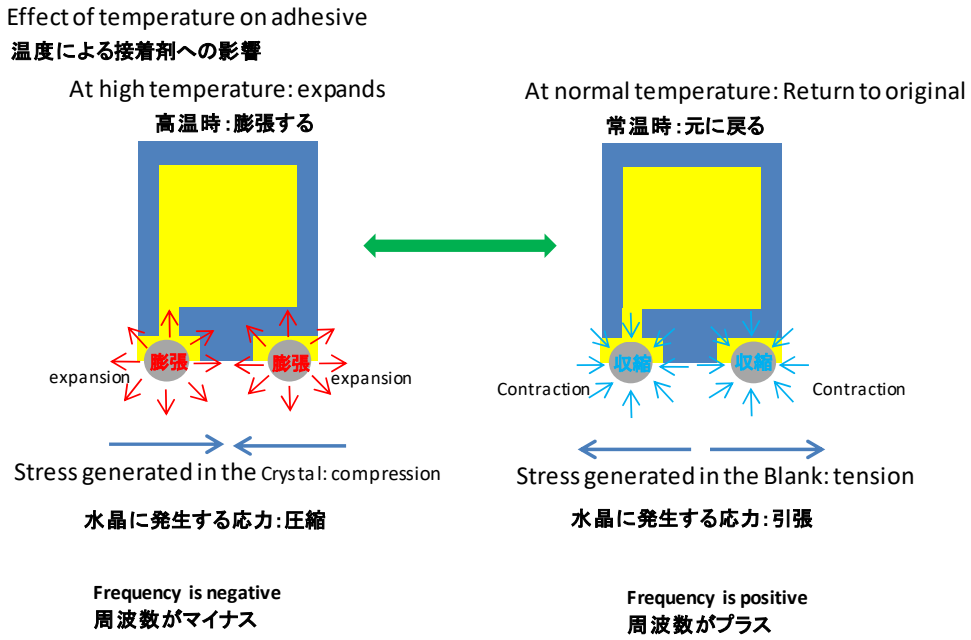


Fig2. Image diagram

Continuing with the reproduction test, the results of the 3-condition reproduction test of the evaluation sample are shown below.

<Sample conditions>

①180µm n=30pcs *Lower limit product with adhesive mounting

②200µm n=30pcs *Lower limit product of mounting standard similar to this complaint

③235µm n=30pcs *Average value product of installed standard

*Aging test at 85℃ for 240 hours

引き続き、再現試験として、評価サンプル 3 条件再現試験結果を下記に示します。

〈サンプル条件〉

①180µm　n=30pcs *接着搭載規格下限品

②200µm　n=30pcs *今回のクレームと同様の搭載規格下限品

③235µm　n=30pcs *搭載規格の平均値品

＊エージング 85℃240 時間の試験

Based on the results of this sample mounting position condition, the frequency fluctuation was within the acceptable range for all three conditions, and no abnormalities were observed.

We apologize for the inconvenience, but we would like to confirm the aging characteristics of the evaluation sample again under your company's aging conditions, so please provide us with the evaluation conditions.

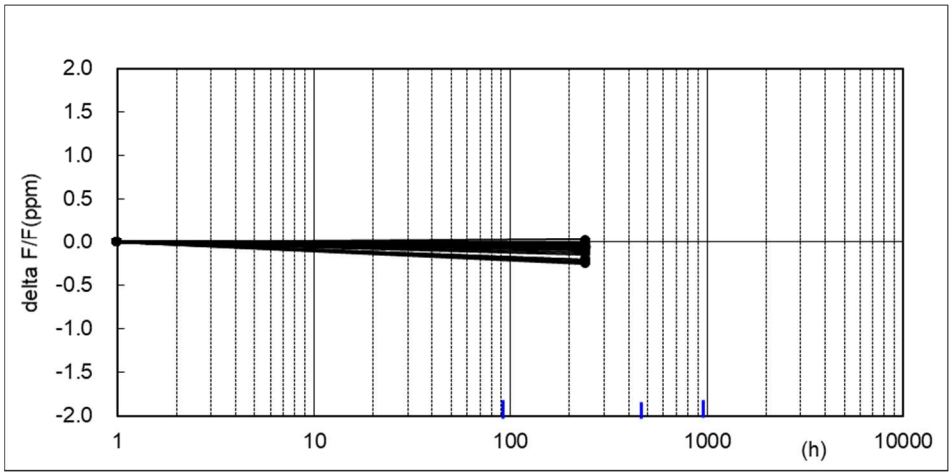
今回のサンプル搭載位置条件結果より、3 条件とも周波数変動は良品範囲内で異常は確認されませんでした。

恐れ入りますが、再度貴社のエージング条件で評価サンプルエージング特性確認を行いたく、評価条件のご提示をお願いいたします。

〈サンプル条件①～③結果/Sample conditions ① results〉

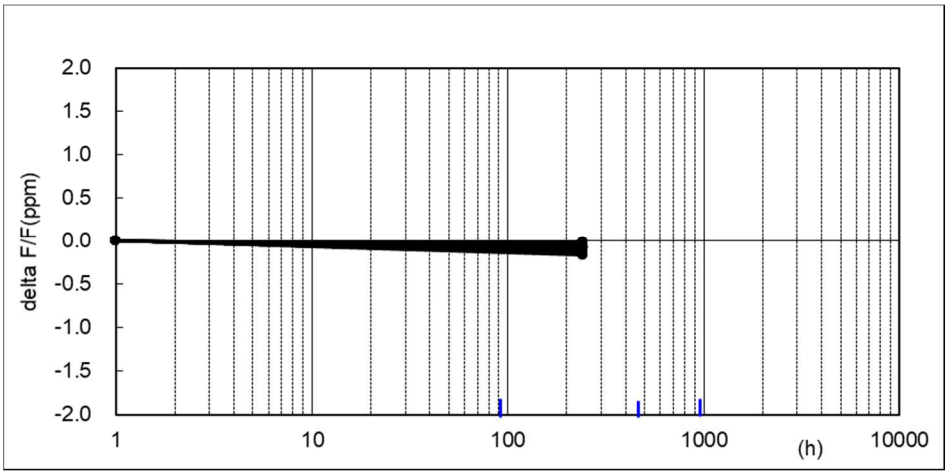
①180µm n=30pcs *Lower limit product with adhesive mounting /

180µm　n=30pcs *接着搭載規格下限品



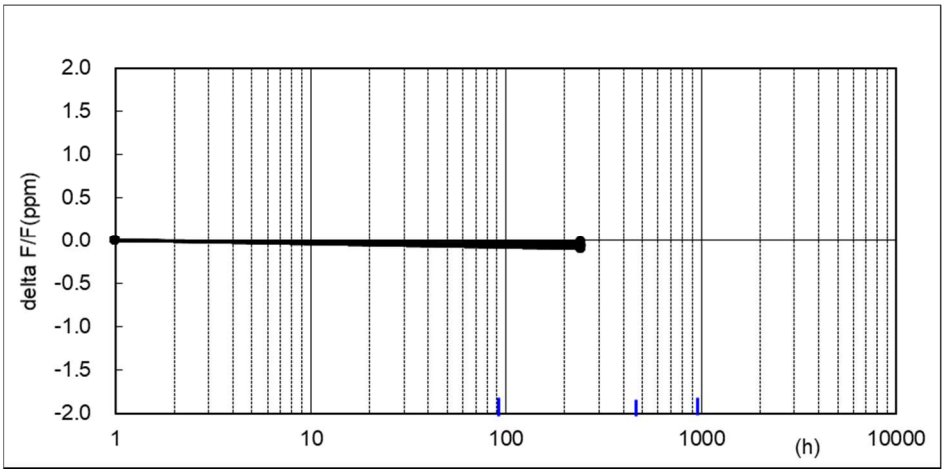
	240h
X-bar	-0.089
3S	0.203
MAX	0.03
MIN	-0.25

②200µm n=30pcs *Lower limit product of mounting standard similar to this complaint /
200µm n=30pcs *今回のクレームと同様の搭載規格下限品



	240h
X-bar	-0.074
3S	0.143
MAX	-0.02
MIN	-0.16

③235µm n=30pcs *Average value product of installed standard /
235µm n=30pcs *搭載規格の平均値品



	240h
X-bar	-0.066
3S	0.056
MAX	-0.01
MIN	-0.10

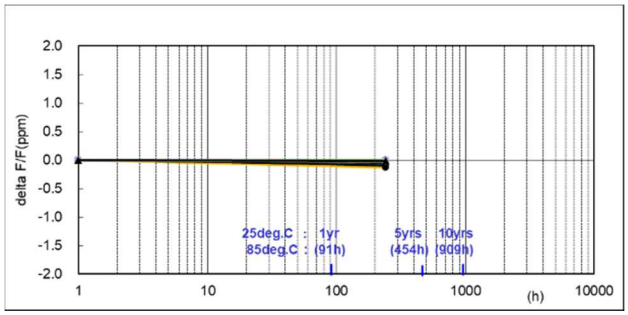
(3) Keep sample 3pcs of report is small. Approximately 30 pieces of KEEP samples from lots before and after the defective lot should be taken for aging measurement.
報告の keep sample 3pcs は少ないです。不具合ロットの前後ロットの KEEP サンプルを 30pcs ほど取って、エージング測定必要。

< KEEP samples 30 pieces aging data / KEEP サンプル 30 個のエージングデータ>

In addition, we will conduct an 85℃ 240H aging test on the following keep samples, including the lots before and after the defects.
①Product manufactured in May 2022 (3 lots x 5 pieces) = 15 pieces
②Product manufactured in June 2022 (3 lots x 5 pieces) = 15 pieces
30 total
追加で不具合の前後ロット含めた下記キープサンプルで 85℃240Hエージング試験実施します。
①2022 年 5 月製造品（3 ロット×5 個）＝15 個
②2022 年 6 月製造品（3 ロット×5 個）＝15 個
計 30 個

< Aging data results for 30 KEEP samples / KEEP サンプル 30 個のエージングデータ結果>

The aging test data for 30pcs of keep samples is shown below, and it is -0.065ppm at 240H.
No abnormality was confirmed.
1000H standard: ±1.0ppm
キープサンプル 30pcs エージング試験データを下記に示しますが、240H で-0.065ppm になります。
異常は確認されませんでした。
1000H 規格：±1.0ppm



	240h
X-bar	-0.065
3S	0.116
MAX	-0.005
MIN	-0.131

(6). For shipping inspection of defective lots, it is necessary to check the history to see if reflow was performed twice. / 不具合ロットの出荷検査に、2 回のリフローはしたかを履歴確認必要。

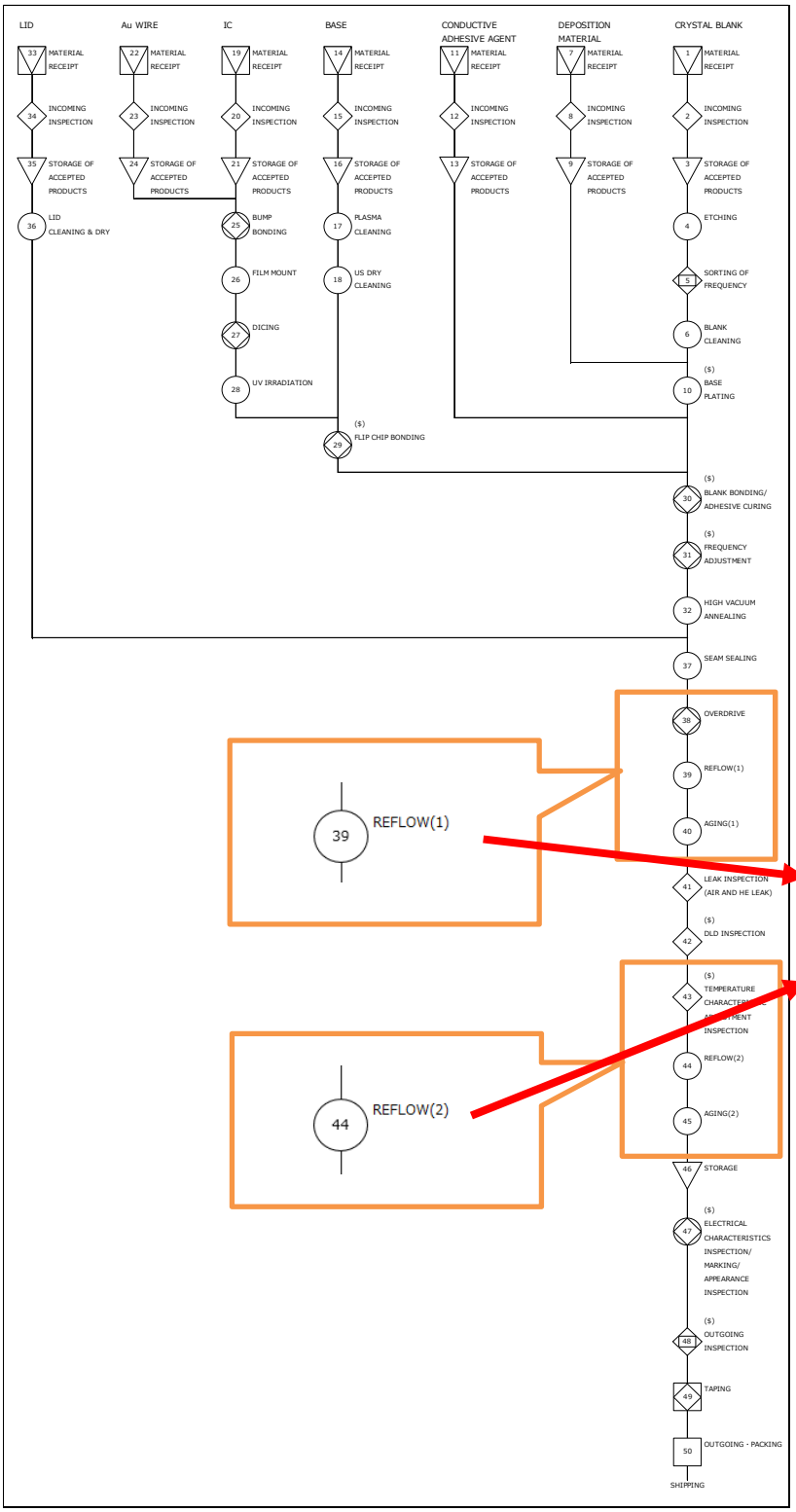
<Answer / 回答>

The process flow of DSA321SDN is shown below.

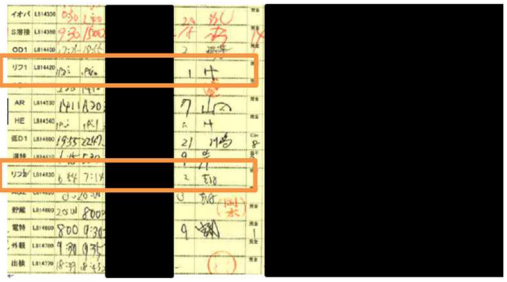
We have performed reflow twice and have confirmed that there are no problems based on the work history.

下記に DSA321SDN の工程フローを示します。

リフローを 2 回実施し作業履歴より、問題ないことを確認しております。



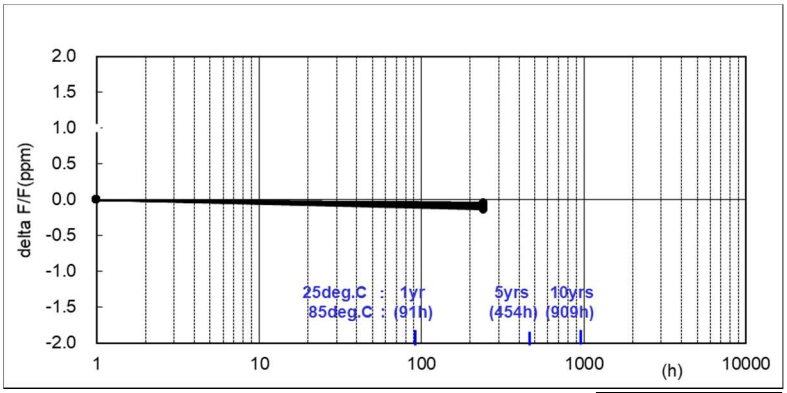
■Work history / 作業履歴



(7). 1XTV20000CDA We prepared 200 pieces of samples with the same specifications and conducted an aging test at 85℃ for 240 hours on 200 pieces of newly introduced products. /
1XTV20000CDA 同仕様のサンプルを 200pcs 用意して、新規投入品 200pcs の 85℃ 240h の エージング試験実施

< Aging data results for 200 new samples / 新規サンプル 200 個のエージングデータ結果>
The aging test results for 200 newly introduced products at 85℃ for 240 hours are shown below, and the result is -0.074ppm for 240 hours.No abnormality was confirmed.
(Data summary: ~January 22, 2024)
新規投入 200 個のエージング 85℃ 240h のエージング試験実施結果を下記に示しますが、240H で -0.074ppm になります。異常は確認されませんでした。
(データまとめ:～2024 年 1 月 22 日)

1000H 規格:±1.0ppm



	240h
X-bar	-0.074
3S	0.143
MAX	-0.02
MIN	-0.16

We would like to continue to evaluate the defects on your company's board and evaluate the aging characteristics and temperature conditions for the three sample mounting positions, so we kindly request that you lend us the board and provide us with your aging characteristics and temperature conditions.
引き続き、貴社基板での不具合評価とサンプル搭載位置 3 条件の貴社エージング特性温度条件評価を行いたく、恐れ入りますが基板貸出と貴社エージング特性温度条件提供をお願いいたします。

●**Report Schedule　報告スケジュール**

Reporting items ご報告事項	Report date ご報告日
Appearance confirmation result Electrical characteristics check Frequency temperature characteristic check DLD characteristic check 外観確認結果 電気的特性確認 周波数温度特性 DLD特性	October 20, 2023. Report No. A1230270-1
About inquiries お問合せについて	October 25, 2023. Report No. A1230270-2
Additional aging test data 追加エージング試験データ(240h)	December 13, 2023. Report No. A1230270-3
Inquiry content answer/お問合せ内容回答 4M change point survey /4M変化点調査（1,4,5,6）	December 25, 2023. Report No. A1230270-4
Additional aging test data (500h) (2). FTAs that affect aging 追加エージング試験データ(500h) エージングに影響与えるFTA	December 28, 2023. Report No. A1230270-5
Internal opening investigation/Improvement report 内部開封調査/改善日程報告	December 29, 2023. Report No. A1230270-6
Internal opening investigation results 内部開封調査結果 (3). Additional 20 pieces 85℃ 240H aging 追加30個85℃240Hエージング	January 10, 2024. Report No. A1230270-7
(7). Aging test of 200pcs of newly introduced products at 85℃ for 240 hours 新規投入品200pcsの85℃ 240hのエージング試験	January 22, 2024. Report No. A1230270-8
(3)We conducted an aging test at 85°C for 240 hours On the evaluation sample under three conditions as a reproduction test. 再度規格の厳格を行い、再現試験として、 評価サンプル3条件品の85℃ 240hのエージング試験	January 26, 2024. Report No. A1230270-9

D3. Develop Interim Containment Actions (ICAs)　暫定対策

D4. DEFINE AND VERIFY ROOT CAUSE　根本原因分析

D5. VERYFY PERMANENT CORRECTIVE ACTIONS (PCAs)　是正処置の策定

D6. IMPLEMENT AND VALIDATE PCAs　是正処置の実施と効果確認

D7. PREVENT RECURRENCE　再発防止（標準化）

Feedback to Design :	☐ No	☐ Yes	_____
Feedback to P-FMEA :	☐ No	☐ Yes	_____
Feedback to Control Plan :	☐ No	☐ Yes	_____
Feed back to WI/SOP :	☐ No	☐ Yes	_____
Feedback to other standard :	☐ No	☐ Yes	_____
Analysis chart Risks and Opportunities:	☐ No	☐ Yes	_____
Impact on similar NC, processes and products:	☐ No	☐ Yes	_____

D8. RECOGNIZE TEAM AND INDIVIDUAL CONTRIBUTIONS　報告まとめ

End of report.