**RoHS Compliant**

# APPROVAL SHEET

Issued No. : SLOT141123

**DESCRIPTION** : SMD 7050 XO LVPECL TEWELL 156.253906

**NOMINAL FREQ.** : 156.253906 MHz

**TAITIEN P/N** :

**TAITIEN MODEL** : OTEWELLANF-156.253906MHz

**REVISION** : 1

**DATE** : 11/25/2014

| QA | Checked | Prepared |
|---|---|---|
| Jc Wong | C.H. Chien | Roy Lin |

**CUSTOMER** :

**CUSTOMER P/N** :

| Customer Signature |
|---|
| Approved: |
| Date: |

# REVISION HISTORY

| Rev. | Revised Page | Revision Content | Date | Ref. No. | Reviser |
|---|---|---|---|---|---|
| 01 | N/A | Initial Released | 04/12/2013 | N/A | Ray Liu |

# CONTENT



# ATTACHMENT

# ELECTRICAL CHARACTERISTICS

## FREQUENCY

| | Parameter | Min. | Typ. | Max. | Units | Test Condition |
|---|---|---|---|---|---|---|
| 1-1 | Nominal Frequency | | 156.253906 | | MHz | |
| 1-2 | Frequency stability (Overall) | -25 | | +25 | ppm | Frequency stability includes frequency tolerance@25℃ and frequency stability vs. operating temperature range and voltage variance and first year aging. |
| 1-3 | Aging | -3.0 | | +3.0 | ppm | Frequency drift in first year |
| 1-4 | Operating Temperature range | -40 | | +85 | °C | The operating temperature range over which the frequency stability is measured. |
| 1-5 | Storage Temperature range | -55 | | +125 | °C | |

## POWER SUPPLY

| | Parameter | Min. | Typ. | Max. | Units | Test Condition |
|---|---|---|---|---|---|---|
| 2-1 | Supply voltage | 3.135 | 3.3 | 3.465 | V | |
| 2-2 | Current | | | 75 | mA | At maximum supply voltage |

## OUTPUT

| | Parameter | | Min. | Typ. | Max. | Units | Test Condition |
|---|---|---|---|---|---|---|---|
| 3-1 | Output waveform | | | LVPECL | | | |
| 3-2 | Duty Cycle | | 45 | 50 | 55 | % | |
| 3-3 | Start Time | | | | 3.0 | mSec | |
| 3-4 | Transition Time : Rise/Fall Time | | | | 1.0 | nSec | |
| 3-5 | Output Level | Output High(Logic “1”) | 2.275 | | | V | |
| 3-6 | | Output Low(Logic “0”) | | | 1.68 | V | |
| 3-7 | Output Load | | | 50Ω-2V | | | |
| 3-8 | Tri-State | Output Active | 2.31 or Floating | | | V | Pin 1 Tri-state Enable High |
| 3-9 | | Output in High-Impedance state | | | 0.99 | V | |

## JITTER

| | Parameter | Min. | Typ. | Max. | Units | Test Condition |
|---|---|---|---|---|---|---|
| 4-1 | RMS Phase Jitter | | | 0.2 | pSec | (12KHz - 20MHz) |

## PHASE NOISE

| | Parameter | Min. | Typ. | Max. | Units | Test Condition |
|---|---|---|---|---|---|---|
| 5-1 | 100Hz offset | | | -90 | dBc/Hz | |
| 5-2 | 1KHz offset | | | -115 | dBc/Hz | |
| 5-3 | 10KHz offset | | | -140 | dBc/Hz | |
| 5-4 | 100KHz offset | | | -145 | dBc/Hz | |

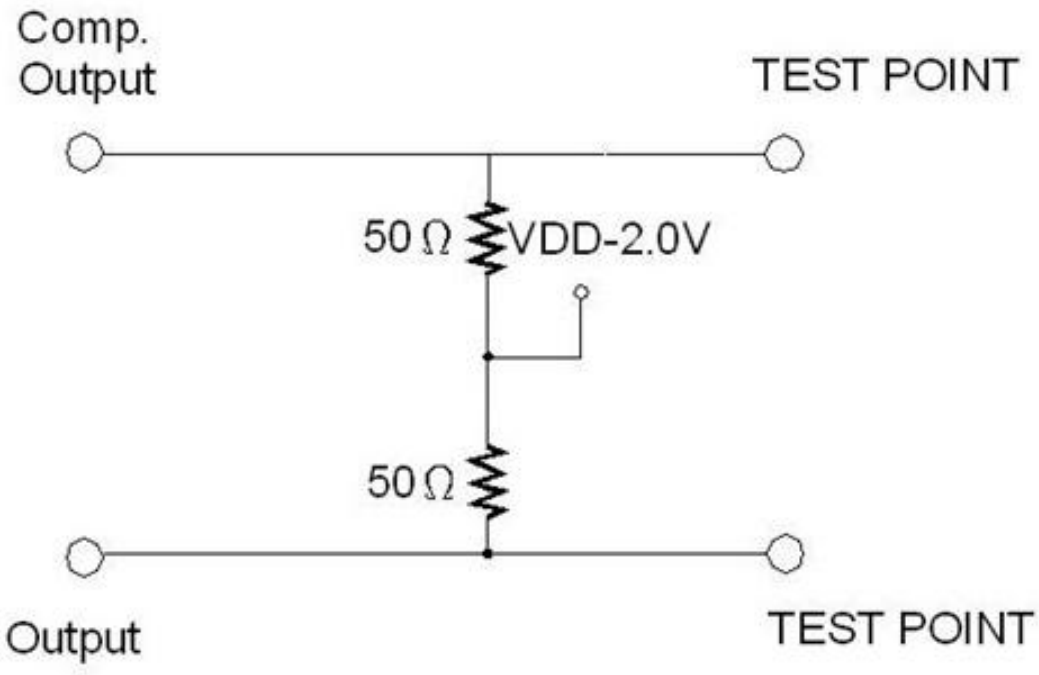
## CUSTOMER SPECIAL REQUIREMENT

| | |
|---|---|
| 6-1 | 3.3V , RMS Jitter<200fSec |

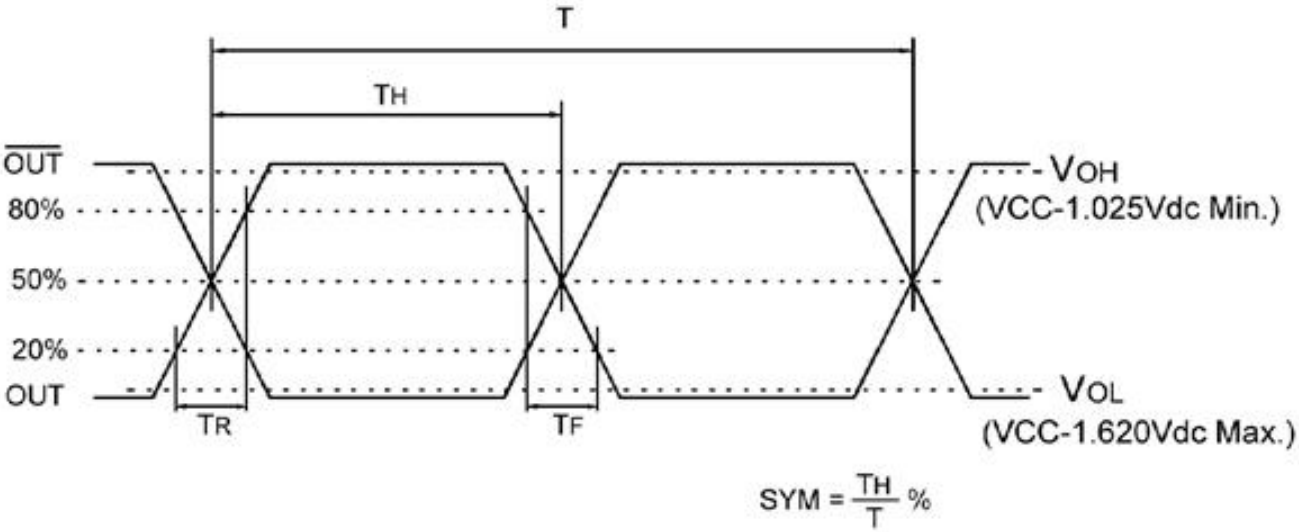
## ENVIRONMENTAL

| | Parameter | Reference Std. | Test Condition |
|---|---|---|---|
| 7-1 | Vibration Test | MIL-STD-883 2007 Condition A<br>JESD22-B103 Condition 1 | 10~2000Hz, 1.52mm, 20g, each axis for 4 hrs |
| 7-2 | Thermal Shock | MIL-STD-883 1010 Condition B<br>JESD22-A104 Condition B | -55℃, 125℃; soak time is 10 mins, with total 200 cycles |
| 7-3 | Mechanical Shock | MIL-STD-883 2002 Condition B<br>JESD22-B104 Condition B | 1500g, half-sine, 0.5ms, each axis for 3 times. |

## ☿ TEST CIRCUIT (LVPECL LOAD)

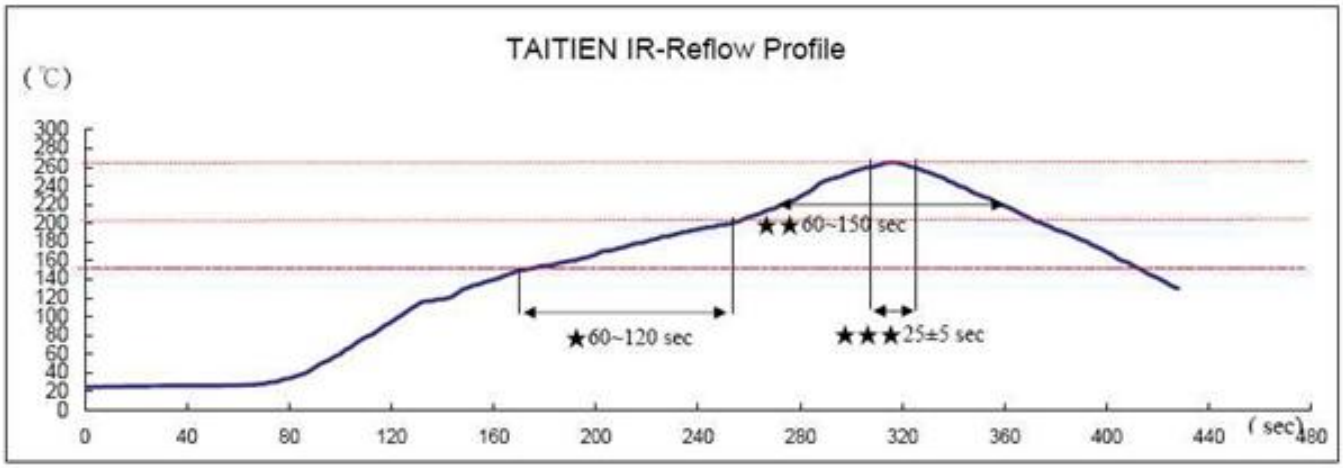



## ☿ OUTPUT WAVEFORM (LVPECL LOAD)



## ♉ RECOMMENDED IR REFLOW PROFILE

### ♉ IR REFLOW PROFILE OF CERAMIC SMD PRODUCTS FOR Pb FREE PROCESS




Reference Standard: JEDEC-STD 020

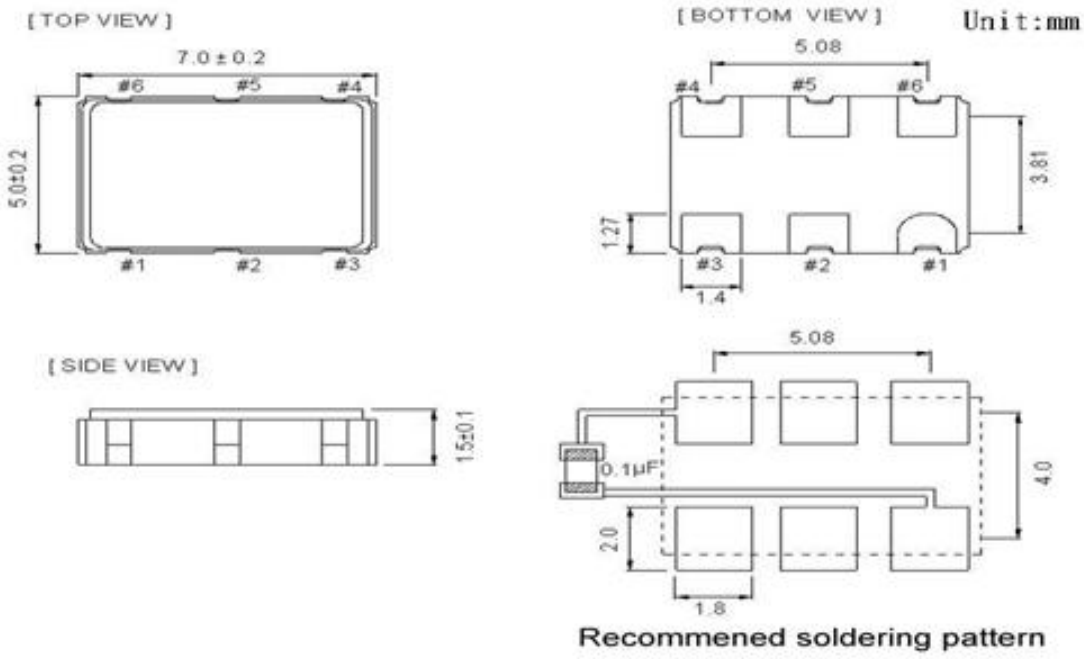
Test conditions: ★Pre-heating : 150℃ to 200℃, 60~120secs.

★★Heating : 217℃, 60~150sec.

★★★Peak temperature : 260±5℃, 25±5sec.

# PRODUCT DIMENSIONS

## DIMENSIONS

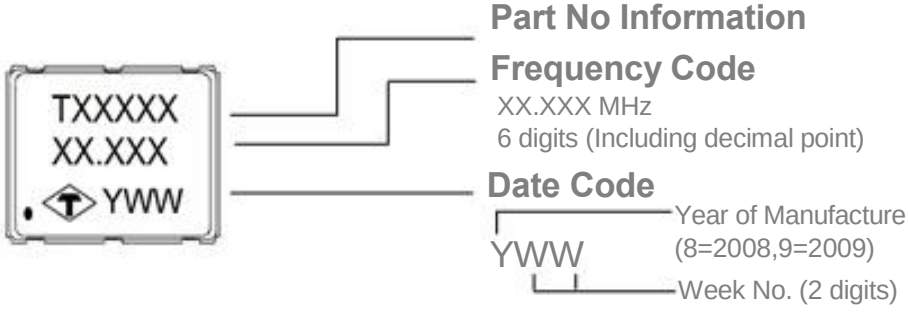



## PIN FUNCTIONS

| Pin | Function |
|---|---|
| #1 | Tri-State |
| #2 | N.C. |
| #3 | GND. |
| #4 | Output |
| #5 | Comp. Output |
| #6 | $V_{DD}$ |

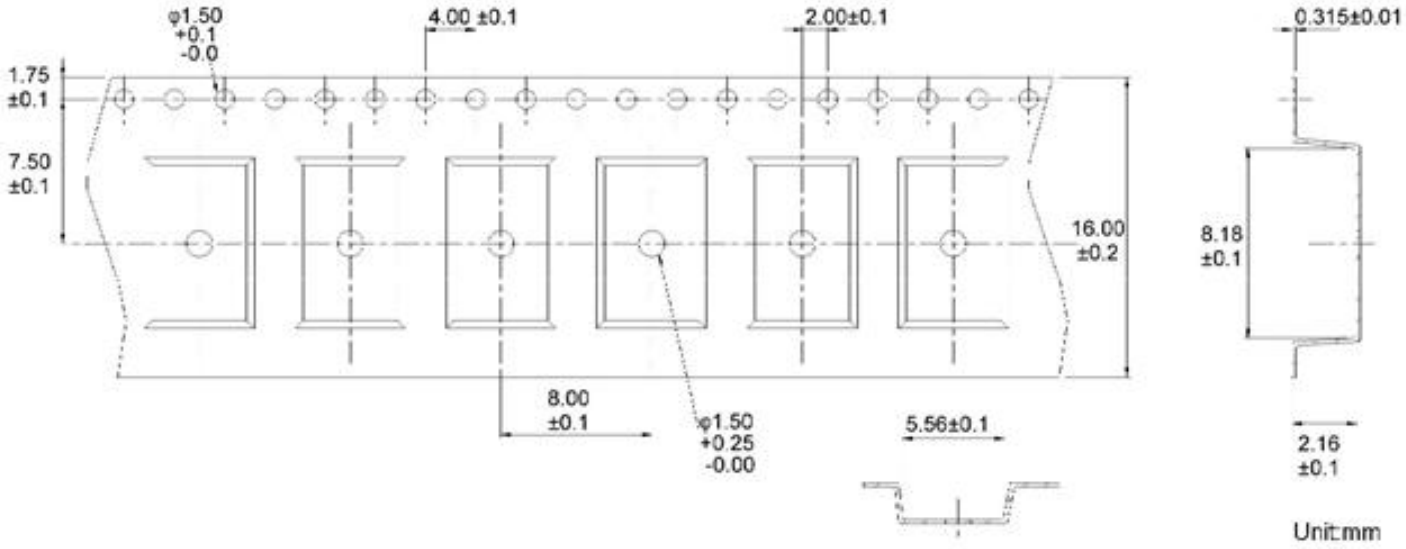
# PRODUCT IDENTIFICATION (MARKING)

## PROCEDURE : LASER

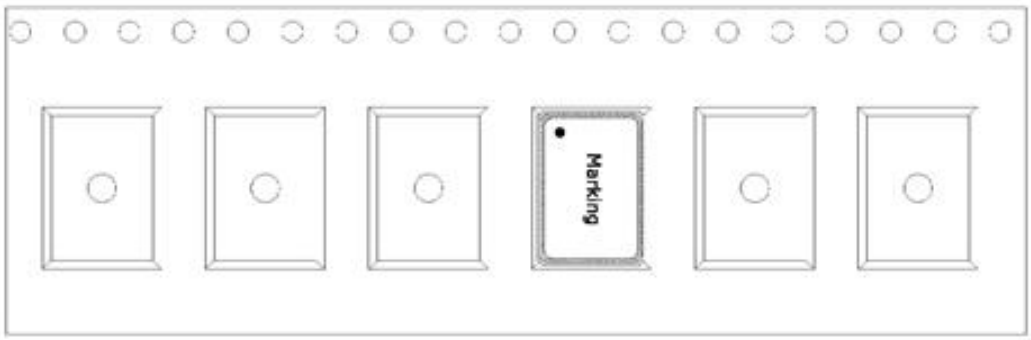


# PACKAGE INFORMATION

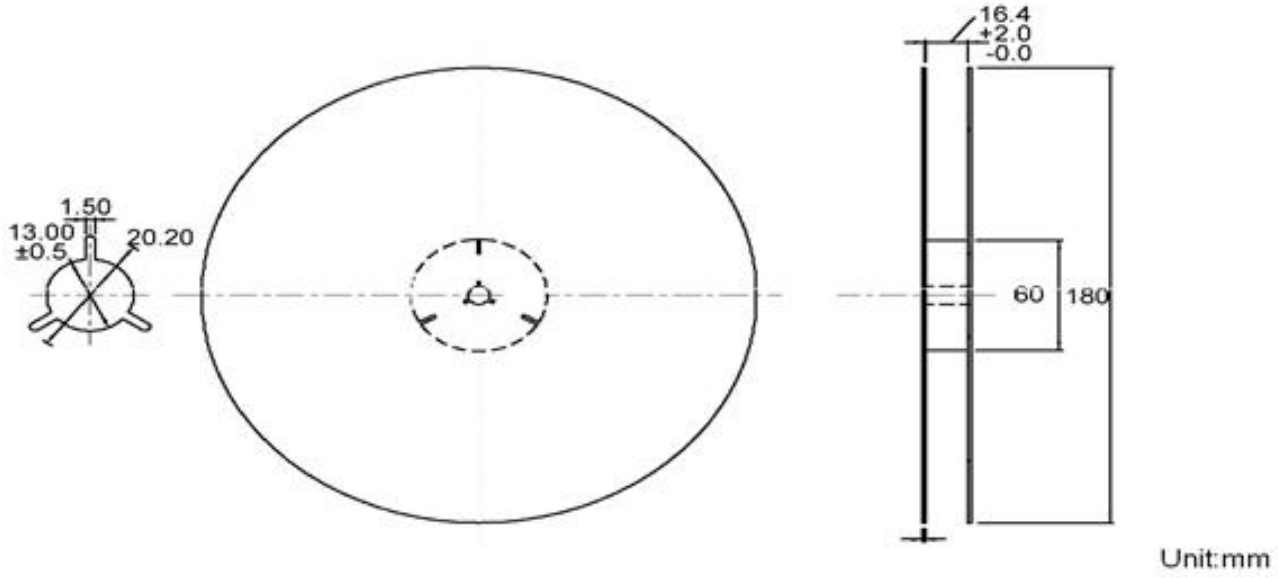
## TAPE (CARRIER) DIMENSIONS




## THE DIRECTION OF PACKING




## REEL DIMENSIONS



## ATTACHMENT

### ELECTRICAL CHARACTERISTICS TEST

# TAITIEN ELECTRONICS CO., LTD.

## Products Test Data

Test Data: 11/24/2014 SPEC NO: 06230L1133 Order NO: TW1-141100200-001

Frequency (MHz): 156.253906 Product Model: OTEWELLANF

| NO | Frequency (MHz) | (ppm) | Idd (mA) | Tri-State | Rise (nSec) | Fall (nSec) | Duty (%) | | Start_T (mSec) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Max. | | 25 | 75 | | 1 | 1 | 55 | | 3 | |
| Min. | | -17 | | | | | 45 | | | |
| 1 | 156.252491 | -9.06 | 26.21 | OK | 0.15 | 0.14 | 50.5 | 49.5 | 0.1 | OK |
| 2 | 156.2533 | -3.88 | 26.23 | OK | 0.15 | 0.13 | 50.56 | 49.44 | 0.1 | OK |
| 3 | 156.252201 | -10.91 | 26.39 | OK | 0.16 | 0.13 | 49.7 | 50.3 | 0.1 | OK |
| 4 | 156.252183 | -11.03 | 25.81 | OK | 0.15 | 0.14 | 49.43 | 50.57 | 0.1 | OK |
| 5 | 156.251993 | -12.24 | 25.38 | OK | 0.15 | 0.14 | 50.06 | 49.94 | 0.1 | OK |
| 6 | 156.252086 | -11.65 | 25.78 | OK | 0.16 | 0.13 | 49.42 | 50.58 | 0.1 | OK |
| 7 | 156.252721 | -7.58 | 26.06 | OK | 0.15 | 0.13 | 50.22 | 49.78 | 0.1 | OK |
| 8 | 156.252812 | -7 | 26.18 | OK | 0.16 | 0.14 | 50.18 | 49.82 | 0.1 | OK |
| 9 | 156.253038 | -5.55 | 26.27 | OK | 0.16 | 0.14 | 50.41 | 49.59 | 0.1 | OK |
| 10 | 156.25335 | -3.56 | 26.32 | OK | 0.16 | 0.13 | 50.09 | 49.91 | 0.1 | OK |
| AVG: | | -8.25 | 26.06 | | 0.16 | 0.14 | 50.06 | 49.94 | 0.10 | |
| STD: | | 3.06 | 0.30 | | 0.01 | 0.00 | 0.39 | 0.39 | 0.00 | |

| | | |
|---|---|---|
| CA(%): | -58.31 | |
| CP: | 2.29 | 54.76 |
| CPK: | 0.96 | 54.76 |

| | |
|---|---|
| Test Number: | 10 |
| OK_QTY: | 10 |
| NG_QTY: | 0 |

Other Informations:

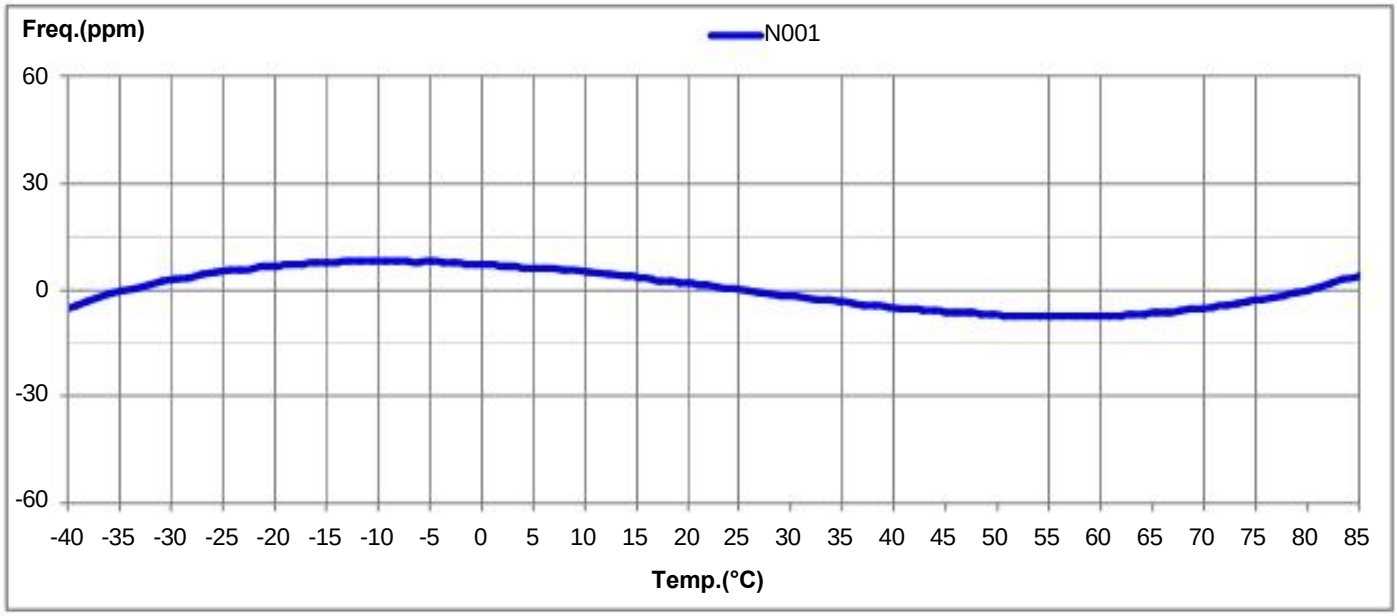
Orders NO:TW1-141100200-001

PN NO:TA3-141100109

**Supervisor:** Ray Lin **Inspector:** 劉倩佐

## ATTACHMENT

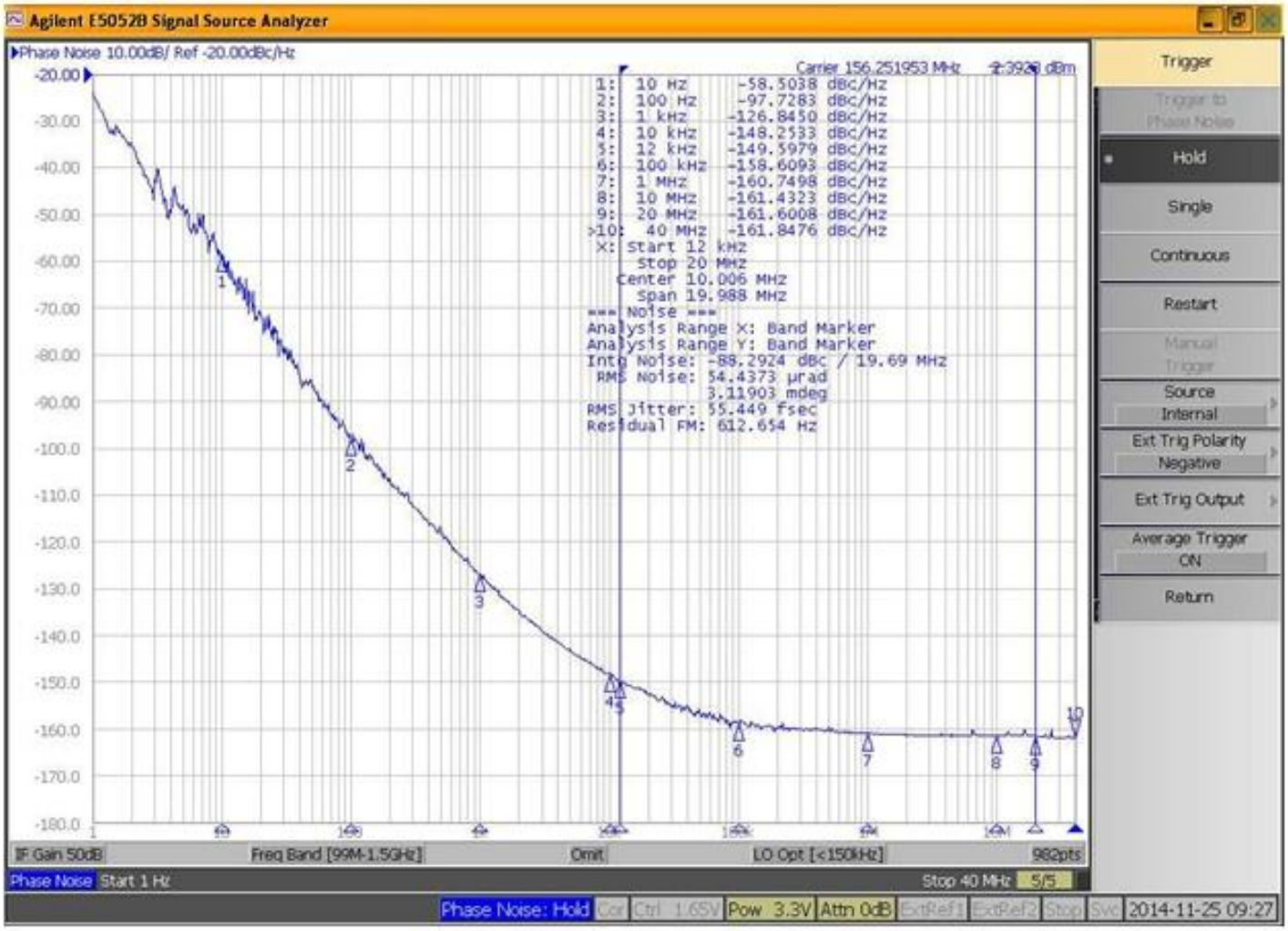
### TEMPERATURE CHARACTERISTICS TEST




**Supervisor:** _____ **Inspector:** _____

## ATTACHMENT

### PHASE NOISE




**Supervisor:** _____ **Inspector:** _____