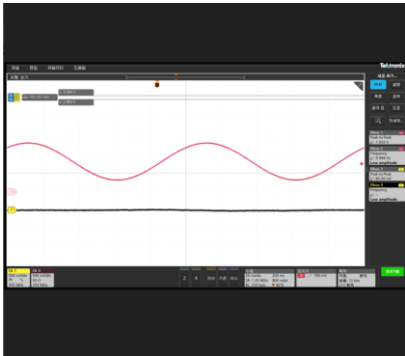
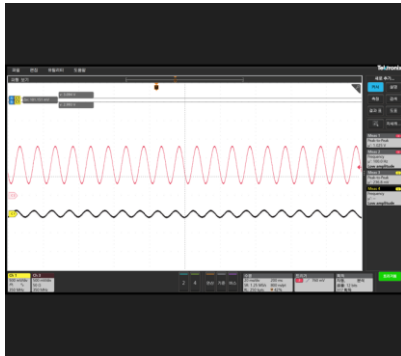


## J2120A Case Study

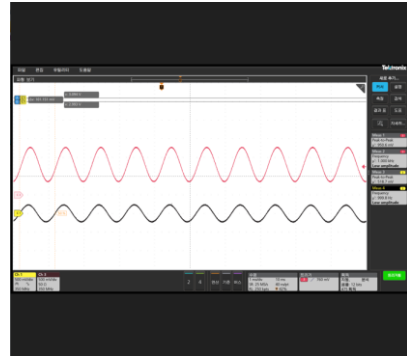
Recently, we encountered an issue with the J2120A that did not perform well at frequencies below 100 Hz and 10 Hz. In contrast, it functioned properly at 1000 Hz, as demonstrated below:



Poor Performance at 10 Hz



Poor Performance at 100 Hz



Good Performance at 1000 Hz

After investigating the issue, we confirmed our findings in Enclosure 1 and left comments regarding the situation.

### Cause of the Issue:

The problem was caused by over-current applications, which led to overheating and degradation of certain components in the J2120A.

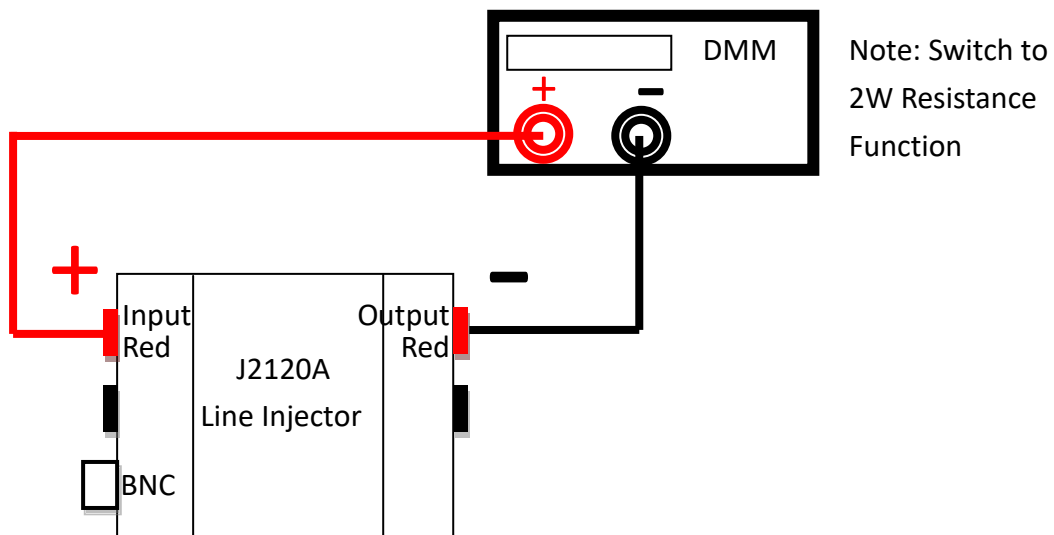
### Recommendations to Avoid the Issue:

To prevent this issue from occurring, we suggest two potential solutions:

- 1. Advanced Model Selection:** When using the injector under high current sources, consider opting for the J2121A or J2122A models.
- 2. Reminder before Using:** Ensure that your current source complies with the specifications of the J2120A.

### Testing the J2120A:

To check if your J2120A is still functioning properly after exposure to over-spec current applications, you can conduct the following test:

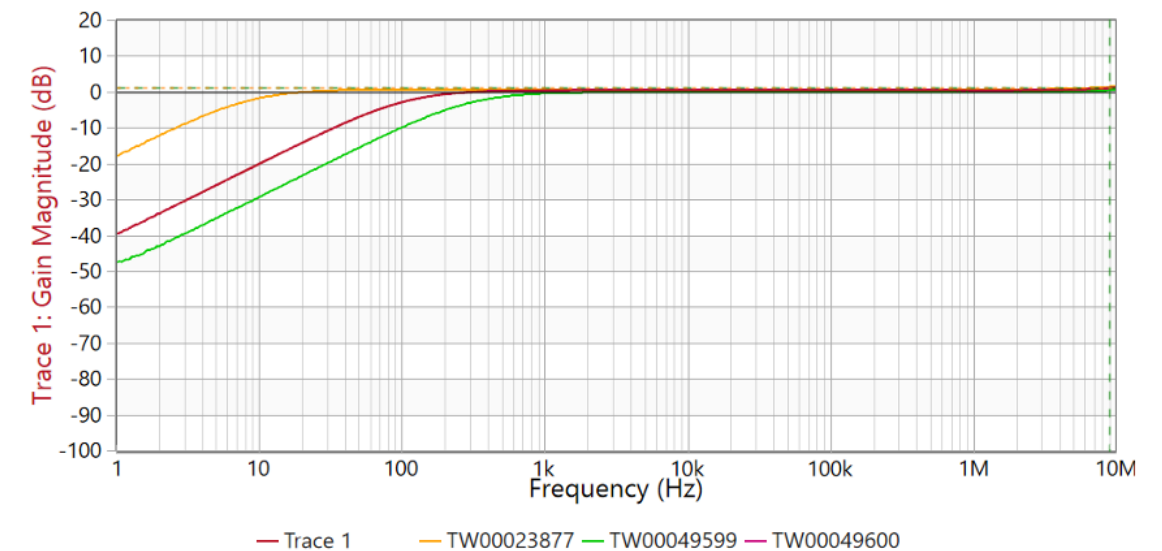


- Normal Result:** The digital multimeter (DMM) should display a value greater than 1 MΩ.
- Abnormal Result:** The DMM will show a value lower than 1 MΩ. In our study, the problematic units exhibited resistance values around 4 kΩ.

Enclosure 1



Measurement: Transmission / Reflection



	Cursor 1	Cursor 2	Delta C2-C1
Frequency	9 MHz	10 MHz	1000 kHz
Trace 1   Magnitude (dB)	1.038 dB	1.171 dB	133.247 mdB

Hardware configuration		
Receiver bandwidth	1 kHz	
Source level	-10 dBm	
DUT settling time	0 s	
Sweep time	264.78 s	
Termination	Channel 1	Channel 2
Gain	1 MΩ	50 Ω
Impedance	1 MΩ	50 Ω
Receiver switch	Receiver 1	Receiver 2
Transmission/Gain	Internal	External
Impedance/Reflection	Internal	Internal
Attenuator setting	Receiver 1	Receiver 2
Transmission/Gain	10 dB	20 dB
Impedance/Reflection	10 dB	10 dB
Text Note		
-		

Device configuration		
Device type	Bode100R1	
Serial number	MF545C	
Last internal calibration	05/23/2025 16:03:10	
Sweep configuration		
Start frequency	1 Hz	
Stop frequency	10 MHz	
Center frequency	5 MHz	
Span frequency	10 MHz	
Sweep mode	Logarithmic	
Number of points	701	
Calibration/Correction	Full-Range	User-Range
Gain	-	Active
Impedance	-	-

Comments:

The image in this enclosure provides a comparison of three J2120A units:

- The yellow line represents a normal J2120A (Serial Number: TW00023877).
- The green line indicates an abnormal J2120A (Serial Number: TW00049599).
- The red line also shows an abnormal J2120A (Serial Number: TW00049600).