

Using MX908 in Investigations and Court



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Background Summary of MX908

The MX908 is a handheld chemical detection and identification tool that leverages the power of high-pressure mass spectrometry to deliver highly reliable and accurate results. Users can conduct field analysis of unknown substances at trace levels to generate actionable intelligence in real time to assess threat levels, establish probable cause, and prioritize investigatory resources accordingly, all while reducing operator exposure. MX908 is already being used in the United States and many other countries with great success. Law enforcement agencies and prosecutors have found MX908 to be an invaluable tool to:

- Easily establish the identity of suspected controlled substances in the field including meth, cocaine, heroin, and 2000+ fentanyl and fentanyl analogs
- Improve officer safety by minimizing exposure to potentially toxic substances
- Aid officers/agents in quickly identifying suspect controlled substances
- Document presumptive drug testing procedures and chain of custody
- Establish probable cause for arrests
- Establish probable cause in search warrant affidavits
- Establish probable cause to support the seizure of evidence and assets
- Establish probable cause in charging decisions
- Establish probable cause in preliminary hearings and grand jury proceedings
- Reduce the number of court continuances while waiting for lab results
- Reduce backlogs relating to laboratory analysis of suspect controlled substances
- Conserve state laboratory resources
- Aid in discovery
- Aid in the resolution of cases at an earlier stage
- Reduce other court related costs

Mass Spec – The Gold Standard for Drug Identification

Mass spectrometry is a common technology used by laboratories to identify unknown substances. The advancements of the MX908 and high-pressure mass spectrometry has brought this technology out of the lab, and into the hands of officers in the field. Mass spectrometry measures mass-to-charge ratio (m/z) of one or more molecules present in a sample and compares the generated “chemical fingerprint” to a reference library or target list. To introduce a sample for analysis, the operator simply collects the sample on a sampling swab, which is then inserted into the MX908. The analysis begins and the resulting “chemical fingerprint” of the sample is compared to the target list of known drug substances. This target list is developed using laboratory certified standards. If there is a match, an on-screen alarm identifies which controlled substances have been identified. The combination of mass spectrometry and ‘speed to result’ enables officers to quickly identify narcotics on scene and proceed accordingly.



The MX908 detects and identifies a broad range of priority drugs at trace levels in seconds.

“The MX908 is a game-changer for fentanyl and other narcotic investigations.”

- Ernie Batista, Retired DEA Agent

How MX908 Enhances Officer Safety

The sensitivity of the MX908 as a trace detector allows it to detect and identify microscopic amounts of threat materials. This allows the officer to not only analyze material that they were previously unable to use as evidence, such as empty packaging, paraphernalia, glassware from manufacturing, and low-concentration pills and mixtures, but also allows the officer to analyze bulk packages of controlled substances from the residue on the outside of the packaging material, often eliminating the need to open the container. An initial sample may be taken from the exterior of a kilo or plastic bag. This nonintrusive analysis may help determine the contents of a container while minimizing the exposure to the interior contents. This is important, particularly when attempting to sample and analyze extremely toxic controlled substances such as fentanyl and its analogs or other bulk narcotics.

Establishment of MX908 Procedures in Investigations

MX908 procedures used in the field should be carefully crafted and coordinated with prosecuting authorities to ensure the successful introduction of this presumptive evidence in court. The following information may be helpful in establishing guidelines that meet the needs of your specific jurisdiction. These procedures must begin with standards of training.

Training

MX908 operator training, certification, and periodic refresher courses are important for proper use of the device, as well as officer safety and the successful admission of test results as presumptive evidence of drug identification in probable cause hearings. The exact nature of this training will depend upon your jurisdiction's rules regarding expert testimony.

Operator training can be accomplished in several ways, including:

- On site/hands on operator training courses conducted by 908 Devices' certified trainers
- Courses conducted by state laboratory personnel or internal department experts who have been trained and certified as MX908 instructors
- Online refresher training conducted by 908 Devices' certified trainers

Once training is completed, and the MX908 is deployed to the field, operators should document the number of tests conducted, procedures used, results obtained, and the consistency of MX908 test results with further laboratory testing. This is critical since user experience, along with the technology itself, will be important factors in laying the proper foundation for admissibility of this evidence.

Collecting Evidence

When a suspected sample is obtained through a purchase or seizure, the MX908 can be used to identify many controlled substances and precursor chemicals. After a test result is obtained, a report can be printed as part of the investigative file. Test results can also be summarized in investigative reports or probable cause statements. These reports will provide powerful evidence of the identity of the drug and the circumstances under which it was seized and tested.

908 Devices also offers a 24/7 reachback service for confirmation of field results from the MX908 by leveraging highly trained chemists and forensic experts within 908 Devices for advanced data analysis. Reachback is an important force multiplier, which can take the results from any field technology to a higher level of fidelity and allow users to make the best possible decision from the best possible information. 908 Devices recommends conducting reachback for any technology when it's involved in a significant escalation or de-escalation of an incident involving public health, safety, or property, or significant legal action. This is particularly important if only one field test can be employed or is the primary basis for a warrant or subsequent action.



This handheld tool leverages high-pressure mass spectrometry™ (HPMS) to detect trace-level drugs including methamphetamine, cocaine, heroin, fentanyl, and emerging classes such as cathinones and cannabinoids.

MX908 Report

The MX908 report identifies the suspect chemical as well as other important information, such as:

- The event number
- The date and time of each scan
- The date and time of the last system check
- The substance identified
- The MX908 scan mode – Drug Hunter
- Spectrum charts
- Device serial number/Installed software version

Officers may use the MX908 Remote app to annotate additional information on the report. This could include:

- Investigation case number
- Name of the case agent
- Name of the suspect/defendant
- Name of the MX908 operator
- Location of the arrest/seizure
- Any other information according to regional SOPs

Supporting MX908 Results

To support MX908 findings in an investigation, other available evidence should be used in police reports, search warrant affidavits, and other probable cause statements to aid in the identification of the suspected substance, such as:

- The drug being investigated
- Statements of officers, informants, suspects, and other witnesses
- Surveillance
- The experience and training of the officer relating to the particular substance
- The appearance of the suspected substance (color, consistency, packaging, labeling)
- Whether the price was consistent with the suspected substance
- Results of presumptive tests and lab reports of substances seized earlier in the investigation
- Other seized evidence, records, and paraphernalia
- Post-arrest admissions of the suspect

Documenting the Technology and its Application

In addition to supporting MX908 results through other case evidence, it is important to properly identify the device and how department procedures were used to obtain reliable results, including the following:

- The MX908 device and a brief explanation of its operation
- The nature of the officer's training with the device, including certification
- The officer's experience with MX908 (time as a user, number of tests performed, procedures followed, results obtained, consistency with admissions/confessions/ additional lab tests, and overall reliability)
- How MX908 was administered in the particular case
- System checks conducted before and after the scan of the target substance
- The specific findings of the scan
- How the result was displayed
- How the result was documented/retained as evidence and provided to the prosecutor
- How the scan results cannot be altered

All of this will establish that the device is accurate and reliable, that the officer is knowledgeable about its use, and that the device was used consistent with the training received. The amount of detail provided will depend upon the specific investigation, how established the use of MX908 is in your jurisdiction, and the procedures established by your agency and prosecutor's office.

Sample language - reports and probable cause statements

On (date), a presumptive positive test was conducted by your affiant on evidence item number ____ utilizing an MX908 device- serial number ____ in the appropriate mission mode. This test was conducted in accordance with my training, experience, and department policies. Through the application of mass spectrometry, the MX908 can determine the unique fragmentation pattern of a substance and compare it with an internal library of known substances. In this case, the MX908 analysis of evidence item number ____ resulted in a positive presumptive result for ____.

In cases where detailed information regarding MX908 is necessary, additional facts supporting device results (listed above) can also be included. Note: This is an example draft only and should be modified in accordance with your local standard operating procedures.

MX908 Use in Court

Most prosecutors in the United States gain acceptance of MX908 presumptive results in preliminary hearings through educating the courts and defense bar regarding the technology and how it is used in investigations. Often, this is done informally.

In other instances, MX908 results are presented in probable cause hearings in the same manner as any other presumptive field test.

Basic foundational questions that prosecutors should strive to answer in court include:

- Training of the officer (who, what, when, certification, refresher courses)
- Brief explanation of the technology

- Device experience of the officer (period of time used, number of tests performed)
- Experience of the officer in comparing test results with later lab tests, admissions, and pleas
- Use of device in this case (procedures used, self-checks, how results were displayed/preserved)
- How the results were documented in the report
- Opinion of the officer regarding the accuracy of the MX908 analysis

Jury Trials

MX908 is a presumptive test used to establish probable cause in investigations and court (preliminary hearings and grand jury proceedings). Since certified laboratory tests are usually obtained prior to trial, those results are typically used in lieu of MX908 results. In most jurisdictions, challenges based upon Daubert/Frye are inapplicable to probable cause hearings since the sole purpose of Daubert/Frye is to determine the reliability of evidence presented to lay jurors.

Expected Results

Through education and standard courtroom testimony, MX908 test results are widely accepted as presumptive proof for drug identification in court. In a growing number of jurisdictions, the simultaneous vetting of MX908 technology as a presumptive test by local and state crime labs is accelerating the acceptance of these test results in court.

Given the widespread acceptance of mass spectrometry by forensic laboratories, and the history of accuracy and reliability shown by MX908 in applying this technology in the field, prosecutors can be confident in the ongoing value of this important tool in efficiently charging and resolving drug cases.

Learn more about MX908 at [908devices.com/MX908](https://www.908devices.com/MX908)



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