# Agilent Technologies, Inc. - Agilent G6080AA MassCode PCR LC/MS Bundle

## GENERAL DESCRIPTION:

MassCode Polymerase Chain Reaction (PCR) technology is suitable for any research application that requires mid-level multiplexed detection of nucleic acid sequences through design of consensus PCR primers, and is ideal for high-throughput detection of about 10-30 target sequences simultaneously.

## TECHNICAL DESCRIPTION:

After extraction of nucleic acids from samples of interest, the MassCode PCR workflow starts with Reverse Transcription PCR (RT-PCR) on the source material in 96-well plate format. PCR primers for each target are designed to minimize primer-dimer formation and to be specific for a set of inclusive sequences, e.g. multiple viral nucleic acid targets, while being exclusive for non-desired sequences, such as all other targets in the reaction and potential contaminating sequences. Each forward and reverse primer is conjugated with a small molecule tag of a specific mass to provide a dual signal for a given target sequence. After RT-PCR, the reaction is subjected to selective depletion of excess primers and unwanted side reactions. The entire 96-well plate is then loaded into the LC autosampler for automated processing through an ultra violet (UV) unit which cleaves the small molecule tags from the amplified target. Subsequent flow injection into the single quadrupole mass spectrometer equipped with an Atmospheric Pressure Chemical Ionization (APCI) source enables detection of the respective tags. MassCode PCR Application Software automatically analyses the data and reports results for each target of interest.

## CONTACT INFORMATION

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## COST

N/A

## Tier Selection

Final tier assignment is based on overall product score.

Top Tier | Second Tier | Third Tier | Fourth Tier | Bottom Tier

**RANKINGS**

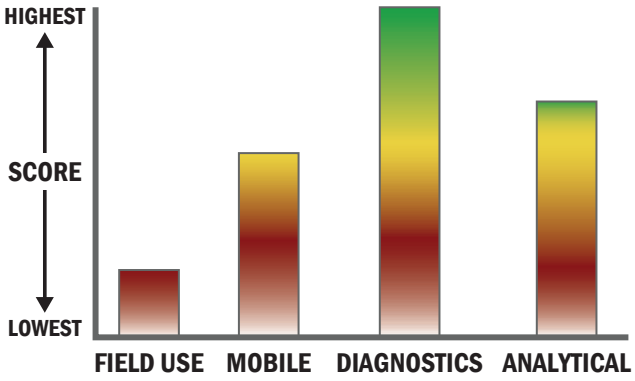
| | Biological | Chemical | Radiological |
|---|---|---|---|
| **FIELD USE** System | Bottom Tier | N/A | N/A |
| **MOBILE** Laboratory | Bottom Tier | N/A | N/A |
| **DIAGNOSTIC** Laboratory | Bottom Tier | N/A | N/A |
| **ANALYTICAL** Laboratory | Bottom Tier | N/A | N/A |

## Survey Source

Vendor Supplied Information

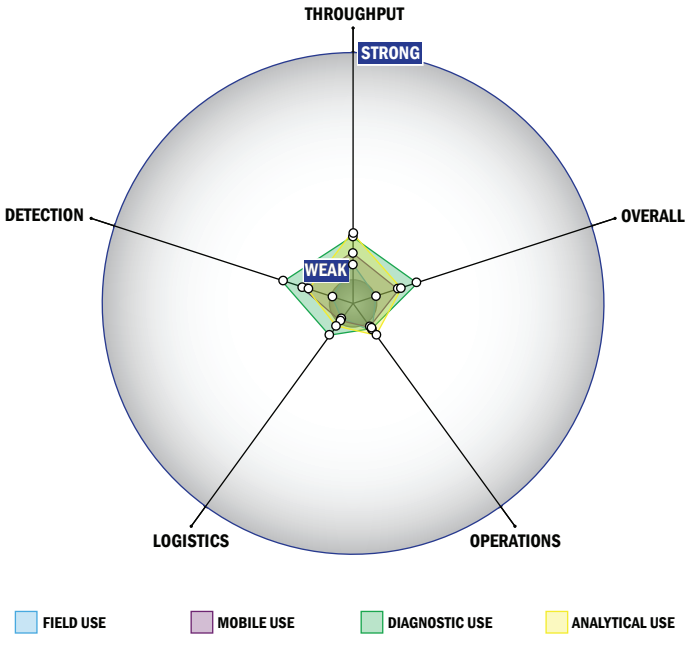
## Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.




## Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



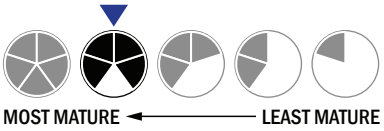

## Evaluation Criteria

### Throughput:

- Between 60 minutes and 8 hours for detection
- Multiple samples, multiple tests/sample per run
- 95-32 samples every 2 hours
- The system could be adapted to a semi-automated system with some effort
- Device or system is intended for multiple detection assays
- 5 or more solutions, buffer, eluents, and/or reagents
- 5 or more components
- Greater than 20 minutes is required for setup
- Almost instantaneous detection

### Logistics:

- More than a day of training and significant technical skills are required
- Approximately the size of a home dishwasher
- More than 50 kg




### Operations:

- Components must be frozen below -20°C (cryo-storage)
- Between 6 months and 1 year shelf life
- The system is not capable of autonomy

### Detection:

No detection information available