



# Data Sheet

## ■ Affymetrix® GeneChip® Command Console® Software (AGCC)

Affymetrix® GeneChip® Command Console® Software provides the following benefits:

- Flexible GeneChip processing workflow
- Integrated instrument control
- Simplified data organization
- Integration and customization for end users and third-party software tools

### Introduction

Affymetrix® GeneChip® Command Console® Software (AGCC) provides an intuitive set of tools for instrument control and data organization used in the processing of GeneChip probe arrays. AGCC produces probe cell intensity data (.CEL file generation), enables sample and array registration, data organization, fluidics and scanning instrument control as well as automatic and manual image gridding. Besides these core features, AGCC's flexible platform enables customized, automated and integrated workflows with a variety of laboratory information management systems.

AGCC supports the full range of Affymetrix assays by enabling seamless integration with downstream primary analysis applications such as Affymetrix Expression Console™ and Genotyping Console™. Additionally, sample attribute and array data can be directly imported into any of the more than 30 GeneChip-compatible™ applications, allowing researchers and clinicians to select from a variety of analysis methodologies.

Key to this ability is Affymetrix' commitment to an open informatics platform that uses industry-standard file formats for sample annotations and open-file formats to access GeneChip microarray data. Inside GeneChip-compatible analysis applications, sample attributes and array data are merged with automated downloads of library files and NetAffx® annotations, which provides streamlined data analysis workflows unmatched by any other microarray platform.

### Features and Benefits

#### FLEXIBLE WORKFLOW

AGCC provides multiple methods for processing GeneChip probe arrays, from sample registration through the production of probe cell intensity data. Samples can be registered with or without attributes, as individuals or in batches, with minimal information through Quick Register, or programmatically through external software code. Sample information can be created, edited or appended at any point in the workflow. The software provides controls to process probe arrays through fluidics and scanning instrumentation as single arrays or batches.

#### INTEGRATED INSTRUMENT CONTROL

AGCC serves as the instrument control software for the GeneChip® Fluidics Station 450 (FS450) and all versions of the GeneChip® Scanner 3000 (GCS3000). Probe arrays, registered via their Affymetrix barcode, can be processed manually or automatically through instrumentation. AGCC easily processes batches of probe arrays through the wash and stain steps by supporting up to eight fluidics stations per computer workstation. This consolidates the control of all stations into a single user interface and the application of wash and stain protocols to all probe arrays with a single step. This is especially convenient when running maintenance protocols.

In addition, AGCC provides walk-away convenience when controlling an AutoLoader-enabled GCS3000. Instrument log files and array audit files provide records for tracking and quality control.

Figure 1: The AGCC workflow.

## ARRAY PROCESSING WORKFLOW

### Workflow Steps

Register Sample(s) and Assign Arrays in Sample Files



Process Probe Array in Fluidics Station



Scan Probe Array and Save Image Data in DAT files



Review Grid Alignment



Analyze Cell Intensity Data and Generate Probe Set Summarization Data

### AGCC Components



#### AGCC Portal

The AGCC Portal module provides features for sample registration and data organization. Multiple methods are supported for registering samples either individually or in batch. Powerful search tools are provided for finding data sets of interest.



#### AGCC Fluidics Control

The AGCC Fluidics Control module is used to control the Fluidics Station 450. The software can manage up to eight fluidics stations per computer workstation and provides control of all stations through a single user interface. Maintenance and batch protocols are easily managed across all stations and modules.



#### AGCC Scan Control

The AGCC Scan Control module is used to control the GeneChip Scanner 3000. The software identifies the probe array type and automatically sets the scan controls appropriately. Manual scanning and walk-away batch processing, when enabled with an Autoloader, are supported.



#### AGCC Viewer

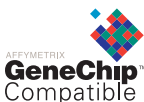
The AGCC Viewer module is used to review the results of auto gridding, manually adjust grid, produce probe cell intensity data and track the progress of the workflow.



#### Affymetrix Analysis Software

Analysis software, such as Expression Console™ and Genotyping Console™, is used for producing probe set summarization data (.CHP Files) from probe cell intensity data (.CEL Files).

-OR-



#### GeneChip-compatible Software

GeneChip-compatible applications support all data file formats associated with AGCC, allowing easy data imports.

## SIMPLIFIED DATA MANAGEMENT

The file-based architecture employed by AGCC provides a number of benefits for managing data. Files can easily be renamed and moved between computers and users, which makes sharing data and collaborating as simple as dragging and dropping files between systems. Backup and archiving are straightforward, using industry-standard backup tools. Data files may be stored locally on internal or external drives (USB hard drives), or externally on network file servers.

AGCC stores all data in the files, but also indexes and stores the metadata in a slave database, which simplifies searching, sorting and filtering data.

## INTEGRATION AND CUSTOMIZATION

The Affymetrix Developers' Network program provides many resources for software developers wishing to integrate with or customize the GeneChip processing workflow. The Developers' Network site (<http://www.affymetrix.com/support/developer/index.affx>) provides file format definitions, source code, application programming interfaces (APIs), software developers' kits, web-based training seminars and developer-specific technical support for AGCC and other Affymetrix software applications. Visit the Developers' Network to learn more about available resources and to find options for integrating with the GeneChip system.

## AGCC Workflow

AGCC software is composed of four main modules: Portal, Fluidics Control, Scan Control and Viewer. Each module has a specific function in the workflow; Figure 1 explains the functionality for each module.

## Availability

AGCC is available to all GeneChip data users. The software can be downloaded at [www.affymetrix.com](http://www.affymetrix.com).

## System Requirements

### INSTRUMENT CONTROL WORKSTATIONS

- Microsoft® Windows® XP Service Pack 2
- Processor Speed: 3.0Ghz dual or dual core processor
- 2 GB memory
- 500 GB hard drive
- Internet Explorer 6 or higher, or Firefox 2.0

### DATA ANALYSIS WORKSTATIONS

- Windows XP Service Pack 2 or Windows Vista
- 3.0Ghz processor
- 1GB memory (2 GB recommended)
- 500 GB hard drive
- Internet Explorer 6 or higher, or Firefox 2.0

### SYSTEM RECOMMENDATIONS

- Microsoft Excel 2003 or 2007
  - Batch functionality is accomplished through the use of tab-delimited files. An appropriate file editor is required; we suggest Microsoft Excel.

### SUPPORTED INSTRUMENTS

- GeneChip Fluidics Station 450 (FS450)
- GeneChip Scanner 3000 (GCS300)



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