



*Version 7.0 for Windows® Whitepaper*

**Gravic, Inc. – Remark Products Group**

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### **OMR / Remark Office OMR Overview**

Optical Mark Recognition (OMR) is a technology that has been used for many years in schools, universities, businesses, government agencies and many other institutions. OMR is the process of reading data from “fill in the bubble” types of forms. Typical uses for OMR forms include standardized tests, course evaluations, surveys and many other types of forms. Traditionally, OMR forms have been processed using special scanners, special forms printed using high-end printing presses and number two pencils for filling in these forms. Traditional OMR solutions tend to be expensive and inflexible and are only practical in situations where large volumes of the same form are processed over and over. Gravic set out to change this, and since 1991 has been developing and perfecting our software to bring this useful technology to the desktop. Over the years, Remark Office OMR has become the world’s leading package for collecting data from OMR forms.

Remark Office OMR is a software package designed to collect data from optical marks (bubbles, checkboxes) on plain paper forms. The software works in conjunction with an image scanner to collect the data. Instead of special forms, users can create their own forms with any word processor, desktop publishing package or form design software. Users are allowed a great deal of flexibility in the design process. These forms can be printed on any laser printer or photocopier and do not need special registration marks or drop-out inks. Respondents no longer need to keep a number two pencil on hand to fill in the forms. Over the years, Gravic has added other technologies such as barcode recognition and OCR (machine printed text recognition) to the product, but the product focus remains to be the easiest and most powerful solution on the market for collecting data from surveys, tests, assessments, evaluations and other forms.

### **Image Scanning vs. Traditional OMR**

The main difference between the two types of scanning is in the hardware with which they work. Remark Office OMR works with common image scanners. These are the type of scanners that can also be used for scanning pictures or pages of text and are readily available from online electronics vendors or your local computer dealer. Traditional OMR readers are commonly associated with standardized testing, pre-printed forms and number two pencils. Typically, the manufacturers’ sales representatives sell these machines directly to the end user.

When using traditional OMR products, you use pre-printed forms that are created to very exacting specifications. It is very difficult to print such forms using common office equipment and purchasing these forms is an expensive proposition. OMR readers are specifically designed to read these specialized forms.

Remark Office OMR is the flexible solution to your data entry needs that works with forms you create and print. Forms are created in any word processing, page layout or survey design software. Forms can be duplicated on a laser printer, photocopier, or if desired, can be professionally printed. Following our basic form design guidelines will ensure that you get the best recognition results



Forms can be created anywhere from word processors to survey design packages to art programs, including: Microsoft Word, Microsoft Excel, Survey Pro (Apian Software), Magenta (Datablocks), Survey System (Creative Research), Quark, Adobe Photoshop and many more.

### Using Remark Office OMR

There are three basic steps to using the software. 1) Scan a blank copy of the form and tell the software how to interpret the questions on the form by creating a form template. 2) Scan the completed forms and proof for exceptions using the Data Center. 3) Run reports using Remark Quick Stats, or convert your data to a file format compatible with a database, spreadsheet or statistical package.

#### Step 1: Form Template Editor

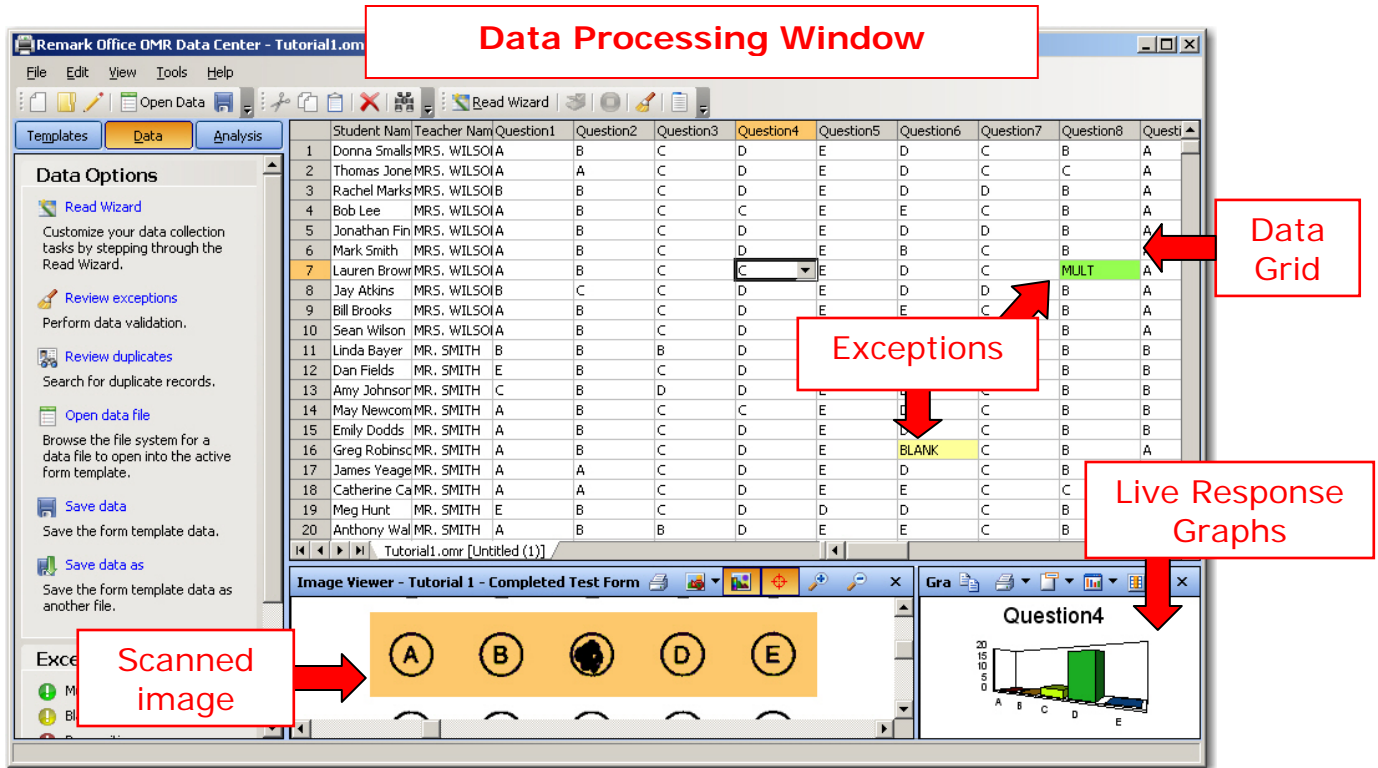
The form template tells the software how to interpret the marks on a form. To create a form template, scan a blank form into Remark Office OMR using a supported image scanner, or import a pre-scanned image file. The image of the form appears on the screen. Using your mouse, you can show the software the areas you want to process on the form (i.e. groups of questions), and then fill in basic information about your form in the Region Definition window. Regions can be OMR (marks), OCR (machine printed text), barcode or image regions for data entry/image clipping of handwritten comments.

**Remark Office OMR's Template Editor**

**The Template Editor shows the image of your form so you can define the various data regions on it.**

### Step 2: Data Center

The Remark Office OMR software can read forms either from a directly supported scanner or from image files that have already been scanned with a scanner or multi-function peripheral (TIF, PCX/DCX, BMP, JPG, PDF). After reading completed forms, the collected data appear in a spreadsheet-style grid window. Remark Office OMR provides a Review Exceptions feature for automatic detection and correction of exception cases, such as blank and multiple responses. An Image Viewer is provided to view the processed forms on-screen, eliminating the need to go back to the printed form. Often exceptions are the result of improperly filled-in forms. For example, a respondent may have chosen two responses for a question that only allows one response.



### Step 3: Converting and Saving the Data

More than thirty standard output file formats are available for use, including the following:

Formats	Applications Supported
Database Formats	Access, dBase, FoxPro and Paradox
Spreadsheet Formats	ASCII (various styles), Excel, Lotus1-2-3 and Text
SAV	SPSS statistical software
Remark	Format for use within the Remark software. Saves data from the grid, as well as grid information such as links to image files and exception cases.
ROA	Remark Office Archive allows you to move your images and data to another system for cleaning and/or analysis.
HTML and XML	Internet or Intranet applications
SRV/STL	Survey Pro (Apian Software) survey design and analysis package
DAT	The Survey System (Creative Research) survey design and analysis
Oracle	Oracle format
SQL	Microsoft SQL Server
Questionmark	To be used with Questionmark Perception software.
ODBC	To export to various relational databases, such as Oracle or SQL.

Please see <http://www.gravic.com> for a complete list of output formats.

## **Remark Quick Stats**

Remark Quick Stats is a built-in analysis package that can be used to tabulate surveys and grade tests. The software provides many standard reports. Reports can be customized to include user specified titles, headers, colors, fonts and graphics.

For a survey, you can run reports such as an item analysis, item statistics or crosstabs to view your results. If you administer tests, the software can automatically grade them. For a test, you can specify an answer key, grade scale, learning objectives, benchmark scores and other options, and then the software can grade the test and produce statistics and graphs representing the item analysis, frequency distribution, student scores and several other test statistics. Remark Quick Stats also produces a grade report for each student that can be printed and handed back to the student.

### **Survey Statistics include:**

- For each item Remark Quick Stats calculates: Mean, Variance, Standard Deviation, Standard Error, Min, Max, Range, Median, Skewness, Kurtosis, T-Value, Percentiles, Confidence Intervals
- For each answer choice Remark Quick Stats calculates: Frequencies, Percentages, Valid Percent
- A Response Report displays all of the handwritten comments for any Image region on one, easy to read, report
- Crosstabs
- A Group Report allowing you to group like questions together and display means for the group

### **Test Statistics include:**

- A Grade Wizard steps you through the process of setting up an answer key, grade scale, question points (including bonus and subjective points), learning objectives, benchmark scores and other grading information for your test
- For each item Remark Quick Stats calculates: Mean, Variance, Standard Deviation, Standard Error, Min, Max, Range, Median, Skewness, Kurtosis, T-Value, Percentiles, Confidence Intervals, P-values, Point Biserial Correlation
- For each answer choice Remark Quick Stats calculates: Frequencies, Percentages, Point Biserial
- For each student Remark Quick Stats calculates: Total score, Raw score, Grade, Dev. IQ, Number correct, incorrect, unanswered
- For the test Remark Quick Stats calculates: Number of graded tests and items, Max, Min, Median, Range, Percentile scores, Mean, Variance, Standard Deviation, Confidence Intervals (1,5,95,99%), KR 20, KR21, Coefficient (Cronbach) Alpha
- A Grade Report displays each student's results on the test and optionally includes an image of the test
- A Comparative Report compares grades for specific subgroups of your data set

Also included with Remark Quick Stats is a Report Batch Wizard. The wizard allows you to display, print and export multiple reports in a single operation with just a few mouse clicks. In addition, the wizard can automatically filter your reports on up to three pieces of information from your data set. Separate reports are created for each unique value in your data set.

### **Remark Office OMR Main Features:**

- Forms commonly scanned with Remark Office OMR include surveys, tests, research studies, evaluations, assessments, ballots, field testing, patient history and many others.
- Allows flexibility in form design. Remark Office OMR forms can be created with any word processor or survey design package and printed on any laser quality printer. Purchasing expensive, pre-printed forms is not required.
- Interfaces with most desktop scanners and supports the TWAIN scanner protocol. An automatic document feeder is recommended. Speed depends on the scanner (typically runs at rated speeds).
- Reads image files (TIFF, PCX, JPG, PDF, BMP) created by network multi-function devices and other scanners.
- Exceptional mark recognition (recognizes bubbles or checkboxes). No registration marks or drop-out colors are needed.
- Automatically recognizes machine printed text with Optical Character Recognition (OCR).
- Recognizes 2D and 1D barcodes.
- Validates data against an external database to confirm that recognized data from a field appear in a particular database field. In addition, look up and replace items from the database. For example you can look up a student ID and replace it with a student name to include it in reports.
- Includes a spell checker.
- Processes multiple-page forms and double-sided forms.
- Processes batch header sheets that act like cover pages to help describe the data set.
- Allows the user to mix forms of different types into the same batch. Forms can have form, page and respondent identifiers on to eliminate the pre-sorting of forms.
- Produces output that can be used with most popular spreadsheet, database, survey design and statistical programs.
- Allows for the correction of exceptions while scanning pages or as an automated post-scanning task. View forms on-screen, eliminating the need to go back to the paper form.
- Saves scanned images to disk for response verification or for use by another software program. Images can be saved and archived using advanced naming conventions for easy filing and retrieval.
- Saves parts of pages, such as a signature block or comments section, to disk as image snapshots. Or, view the handwriting on screen and data enter it in the Remark Office OMR software. Respondent reports are available to view the handwritten comments.
- Allows for easy coding of open-ended (qualitative) questions. Review the qualitative responses on-screen and then enter a code.
- Includes Remark Quick Stats, a built-in analysis component.

- Calculates statistics including:  
*Item Analysis, Number of Respondents and Tabulations, High/Low Score, Median, Mean, Range, Standard Deviation and Variance, Kuder-Richardson f20, Coefficient Alpha, P Values, Point Biserial, Frequency Distribution, Class Grades, Student Grade Reports, Comparative Reports*
- Tabulates surveys. Remark Quick Stats produces item analysis, item statistics and crosstabs.
- Grades tests and provides item and summary analyses. An answer key can be scanned, entered by hand or read from a file. Different weights can be assigned to various sections of the test to accommodate questions that were answered correctly, incorrectly, or not at all. A subjective set of points can also be read and added into the final grade. Supports grading using multiple answer keys. Allows for extra credit questions. Measures performance against learning objectives, benchmarks, etc.
- Automatically filters data and generates separate reports determined by fields you select.
- Analysis results can be saved to PDF, HTML, Excel or RTF file formats.
- Context sensitive help is available by pressing F1 in all windows.
- Free form reviews are available for all registered users.

**Notes:**

If you are considering offering your paper-based survey, test or evaluation in a web-based format, try our [Remark Web Survey](#)® package too. Easily combine results from paper and web for complete analysis.

## Minimum System Requirements

- Personal computer with 1 GHz or faster processor
- Windows 32-bit operating systems: 2000 SP4, XP SP2, Server 2003 or Vista
- 1 GB RAM
- 1 GB free fixed disk space
- CD-ROM drive (for installation purposes)
- Screen/monitor resolution of 1024x768 or higher and at least 32-bit color
- Mouse or other pointing device
- Supported scanner (recommended)
- Windows-supported printer (optional)
- Internet connection recommended for initial software activation

## Who Uses Remark Office OMR?

- **Education Professionals** for student testing, institutional research or community surveys
- **Marketing Professionals** for consumer surveys and customer satisfaction
- **Psychology Professionals** for testing, assessments and evaluations
- **Government Agencies** for data compilation from internal and external sources
- **Healthcare Industry** for customer surveys, patient data and research
- **Pharmaceutical Companies** for clinical trials and product evaluation
- **Police Departments** for racial profiling compliance and community surveys
- **Computer Professionals** for combination or integration with another software package
- **Human Resource Departments** for employee surveys, time sheets and evaluations
- **Training Professionals** for course and instructor evaluations
- **And Many More**



## About Gravic, Inc.

Gravic, Inc. is a privately-held corporation located in Malvern, PA, about ten miles (16km) west of Philadelphia, PA USA. We make a number of computer software products for data collection, transformation and distribution uses. Customers for our products include schools (Primary and Higher Education), hospitals, large and small businesses, health care, government agencies, market researchers, trainers, meeting planners, brokerages, travel agencies, stock exchanges, electric utilities and telcos.

In 2001, we completed a merger of our three predecessor companies. Principia Products, Inc. was restructured and renamed to Gravic, Inc. in order to capitalize effectively on our data collection, transformation and distribution core competencies. Our core purpose is *To Improve Society Through Innovation*, a theme that you will find in all of our products, services, and corporate activities.

Please visit our web site at <http://www.gravic.com/about.html> to learn more about our company, values, and purpose.

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