

# Remark

## Office OMR<sup>®</sup>

Version 8 Whitepaper  
For Windows<sup>®</sup>

*The Innovative Solution To  
Your Data Entry Needs!*



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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 repeatedly. Gravic set out to change OMR scanning for the better, 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, and 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 OMR scanning is in the hardware with which they work. Remark Office OMR works with common image scanners. These are the type of scanners or multi-function devices 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, thus the solution is both expensive and limited.

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.



Forms can be created anywhere from word processors to survey design packages to art programs, including: Microsoft Word, Microsoft Excel, Survey Pro (Apian Software), Concord (Datablocks), Adobe InDesign 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.

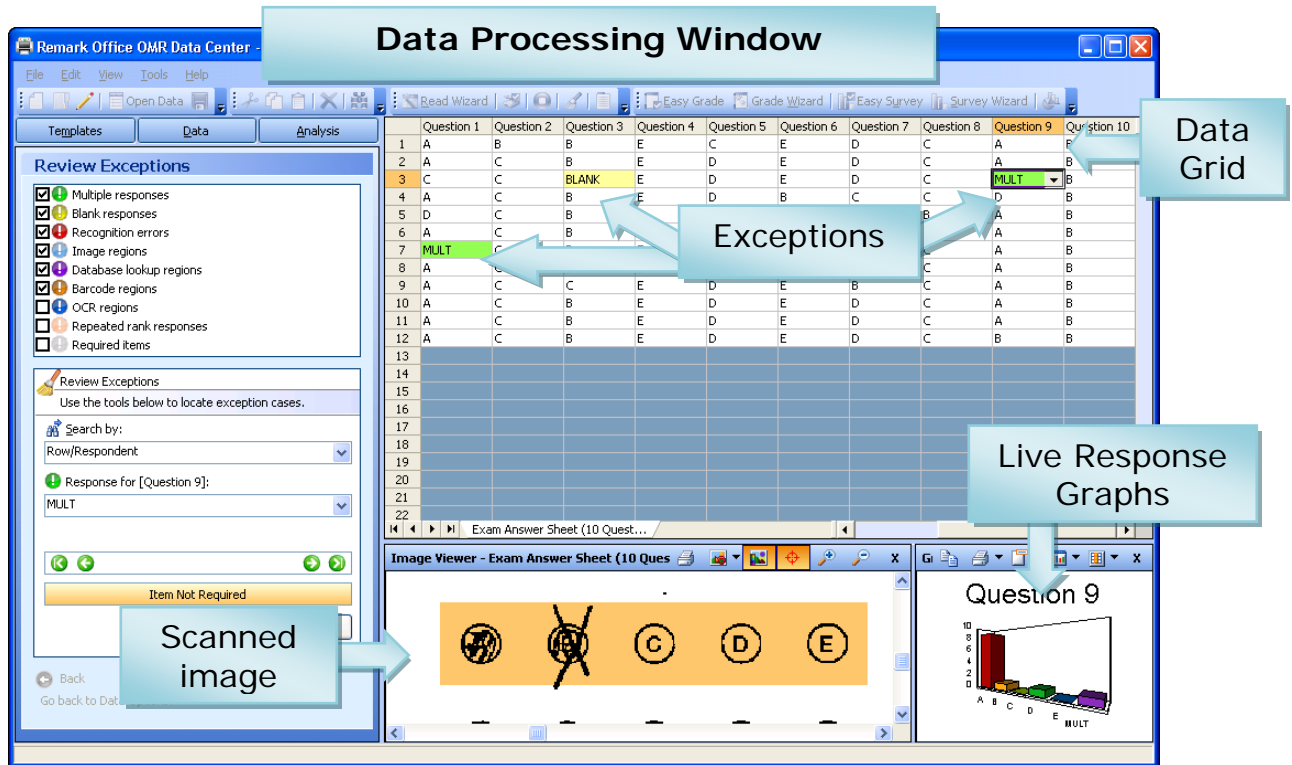
#### Step 1: Form Template Editor

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, show the software the areas you want to process on the form (e.g., 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.

The screenshot shows the Remark Office OMR Template Editor interface for a 'FantastiCar Survey.omr'. The interface includes a menu bar (File, Edit, Region, View, Tools, Help), a toolbar with icons for OMR, Image, Barcode, and OCR, and a 'Reset Images' button. On the left, a tree view lists 'Data Regions' such as 'Page 1' (Gender, Age Group, Income Level, Rate - SALES PERSON, Rate - SALES TEAM, Buying Experience) and 'Page 2' (Rate - Sales Transaction, Rate - Delivery, Rate - Overall Experience, Repeat Experience, Comments, Barcode ID). The main workspace displays a survey form with various questions and rating scales. Callouts identify specific areas: 'Data Regions' points to the tree view; 'Image Region' points to a blue box around a 'Comments' field; 'Barcode Region' points to a barcode at the bottom; and 'OMR Region' points to a green box around a rating scale for question 17. A text box on the right explains that the Template Editor shows the image of the form to define data regions.

**Step 2: Data Center**

The Remark Office OMR software reads 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. Remark Office OMR version 8 includes Gravic's patented dynamic brightness compensation tool that automatically compensates for brightness changes on forms (due to scanner settings or photocopying) as well as blank pages that are accidentally scanned. In addition, you can now ignore large marks, such as the X character, when someone uses it to cross out an incorrectly marked response. The new Recognition Tools feature allows you to see the regions from the original form template against the filled in form so that you can move regions appropriately and re-process the images when a batch of filled-in forms is badly offset or skewed compared to the original. All of these great features are what make Remark Office OMR the most flexible data collection tool on the market.



**Step 3: Converting and Saving the Data**

More than thirty-five standard [output file formats](#) are available for use, including the following:

Formats	Applications Supported
Database Formats	Access (including 2010), SQL Server, Oracle, dBase and Paradox
Spreadsheet Formats	ASCII (various styles), Excel (including 2010) 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.
HTML and XML	Internet or Intranet applications
SRV/STL	Survey Pro (Apian Software) survey design and analysis package
Questionmark	To be used with Questionmark Perception software.
ODBC	To export to various relational databases, such as Oracle or SQL.

## **Email Reports and Data**

In addition to exporting data and reports, an email option is available in the Remark Office OMR Data Center and Remark Quick Stats to email data and reports as attachments. You can use Remark's built-in email client in conjunction with your SMTP server or Microsoft Outlook® to get information out of the software quickly and easily.

## **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 automatically grades them. For a test, you can specify an answer key, grade scale, learning objectives to measure specific subject matter, benchmark comparison scores and other options, and then the software grades the test and produces 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 Tabulation Highlights:**

- **Quick and easy tabulation.** Using Easy Survey, quickly generate standard reports in one click.
- **Customizable reporting.** Use the Survey Wizard to customize the survey analysis process, including creating groups of like questions to compare means and measure against established benchmarks as well as weight importance of questions.
- **Data comparisons.** Compare survey responses across subsets of data.
- **Filtering data.** Automatically filter data on specific criteria and produce reports based on the filters (e.g., if evaluating a conference, breaking reports down by session).
- **The ability to exclude NA (non-applicable) responses:** If your answer choices include a non-applicable option (e.g., Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree, NA) and someone chooses NA, you can exclude it from the statistics, but still be able to see how many respondents chose the NA response.
- **Handwritten comments.** A Response Report displays all of the handwritten comments on one easy to read report.
- **Statistics Calculated:**
  - 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
  - Crosstabs
- **Survey Reports:**
  - [Item Analysis Report](#) - Provides answer choice frequency information on a question-by-question basis. (There are four different versions of this report to meet your needs.)
  - [Item Statistics Report](#) - Displays descriptive statistical information for each question. The statistics are displayed in groups, allowing you to show or hide the groups you need.
  - [Crosstabulation Report](#) - Provides information about two questions within one chart, allowing you to see a breakdown of responses for two questions simultaneously.

- [Comparative Item Report](#) - Compares performance for various demographics included in the survey. Reports individual question information based on questions from the data (e.g., in the case of a course evaluation survey, you could report on instructors, courses, etc.).
- [Question Mean Report](#) - Provides the mean for every question tabulated, allowing you to quickly see individual question performance.
- [Analysis Group Report](#) - Provides overall analysis of each question, along with analysis of questions that are placed in groups. Question groups can be used to view analysis of related questions (e.g., if processing a course evaluation survey, you can view all questions related to the instructor as a question group).
- [Response Report](#) - Typically used to provide responses from open-ended questions.

### Test Grading Highlights:

- **Quick and easy test grading.** Using Easy Grade, simply scan the answer key with the test answer sheets, click a button and reports are produced.
- **Sophisticated test grading.** For more advanced grading, a Grade Wizard steps you through the process of setting up an answer key (including allowing multiple correct answers), selecting a grade scale, entering question points, adding learning objectives to measure against mandated standards, setting benchmark scores for comparison against established benchmarks and other grading information for your test.
- **Multiple test versions.** Grade multiple versions of a test with multiple answers keys.
- **Scaled scores.** The Grade Wizard supports "scaling" a score, whereby you look up grades in an external table (based on total score, percent score or percentile) and then apply the scaled score from the external file. Provides for customizable grading.
- **Achievement by demographic.** Reports are available to compare achievement across various demographic groups of students.
- **Statistics Calculated:**
  - 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 and unanswered.
  - For the test Remark Office OMR 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.
- **Test Grading Reports**
  - [Student Statistics Report](#) - Used to view class performance for tests. Optionally shows detailed information about learning objectives, objective questions, and subjective questions. Great report for quickly seeing how students are performing and whether they are meeting standards.
  - [Comparative Grade Report](#) - Compares performance for groups of students. This report is particularly effective for NCLB (No Child Left Behind) reporting in order to ensure all subgroups of students are making adequate yearly progress.
  - [Class Frequency Distribution Report](#) - Provides a distribution of the grades for an entire class and test. This report is useful for gaining a quick grasp on class performance.

- [Test Statistics Report](#) - Provides basic statistics on the test as a whole and is useful for gaining a quick look at performance and basic statistical analysis.
- [Student Response Report](#) - Provides a graphical view of each student on the test and each question on the test in a matrix style. This report allows you to quickly see performance on both a student and question level.
- [Condensed Test Report](#) - Provides answer choice frequency information on a question by question basis, including distractor and class score information. This report is a great way to see question and class performance at a glance.
- [Demographic Grade Report](#) - Compares performance for groups of students. This report is particularly effective for NCLB (No Child Left Behind) reporting in order to ensure all subgroups of students are making adequate yearly progress.
- [Item Analysis Reports](#) - Provides answer choice frequency information on a question-by-question basis, which for test grading is useful for question validity. Using the Item Analysis reports, you can see how students responded to the question. If problems are found (e.g., the question was poorly worded), you can throw out the question or allow additional responses to be considered correct without rescanning test forms.

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, making it easy to get relevant information into people's hands quickly and efficiently.



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

### **Form Design and Recognition**

- 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.**
- Exceptional mark recognition (recognizes bubbles or checkboxes). **No registration marks or drop-out colors are needed.**
- The ability to read imperfect forms through patented dynamic brightness compensation that automatically compensates for scanned images that are lighter or darker from the template image, and by allowing respondents to cross out incorrect responses and not have them count as valid data.
- 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, pull related data from the database without having respondents fill it in on the form. For example you can look up a student ID and replace it with a student name from the database to include it in reports.

### **Scanning and Reading Images**

- 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.
- 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.
- 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.
- Saves scanned images for response verification, archival or for use by another software program. Images can be saved and archived using advanced naming conventions for easy filing and retrieval.

### **Analysis and Data Export**

- Produces output that can be used with most popular spreadsheet, database, survey design and statistical programs.
- Includes Remark Quick Stats, a built-in analysis component for grading tests and tabulating surveys.

- Saves handwriting, such as a signature block or comments section, 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 descriptive code or theme.
- Automatically filters data and generates separate reports determined by fields you select.
- Analysis results can be saved to PDF, HTML Text or RTF file formats.
- Email data and reports as attachments with Remark's built-in email client in conjunction with your SMTP server or Microsoft Outlook®
- [Free form reviews](#) are available for all registered users to make the most of your Remark software.

**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 and 64-bit operating systems: 2000 SP4 (32-bit only), XP SP3, Vista SP2 and Windows 7 (Note: SP stands for "Service Pack")
  - Remark Office OMR will run on Windows Server 2003 SP2 and Windows 2008 SP2, but please note the software is not a client/server application
- 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 (optional)
- PDF viewer required to view installed documentation (optional)
- Microsoft Outlook 2007 or greater can be used for email functionality; if not present an internal Remark Office OMR email client (using your SMTP server) may be used (optional)

## 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.

The Remark Products Group of Gravic, Inc. was founded as Principia Products in 1991. We have worked in the area of image processing and pattern recognition since the early 1980's. Our early work in OCR and ICR sold thousands of licenses. In 1991, we began to focus on OMR (optical mark recognition) with image scanners (Remark Office OMR® 1.0 release). Our strength is in our ability to innovate and develop solutions for common problems, while maintaining easy-to-use and affordable software.

In 2001, we renamed Principia Products, Inc. to Gravic, Inc. and began a merger of our other entities (ITI and Compucon Services). We completed the merger in 2003 and now all product groups are run by common management.

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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