Remark® Office OMR

Whitepaper
For Windows®

The Innovative Solution To

Your Data Entry Needs!

Contains:

OMR/Remark Office OMR Overview

Optical Mark Recognition (OMR) is a technology for reading data from "fill in the bubble" types of forms. This technology has been used for many years in schools, universities, businesses, government, and other institutions. Traditionally, OMR forms have been processed using special scanners that required specially printed forms filled in with a number two pencil. As a result, traditional OMR solutions tend to be expensive and inflexible. In 1991, Gravic set out to optimize OMR scanning and brought this useful technology to the desktop. Over the years, we have refined our software and added other technologies such as barcode recognition, image clipping, speech recognition for transcribing handwritten responses, and the ability to recognize printed text (OCR). Due to our patented OMR technology, our user-friendly software, and our large customer base from around the world, Gravic is widely regarded as the world leader in plain-paper OMR technology.

Remark Office OMR is a software package designed to collect data from plain-paper OMR forms. The software works with an image scanner or multi-function printer to collect the data. Instead of special forms, users create their own forms with any word processor, desktop publishing package, or form design software. The user is allowed a great deal of flexibility in the design process and the forms can be printed on any laser printer or photocopier. The completed forms are scanned into the software where data can be exported to a number of popular applications for further analysis. Remark Office OMR also includes Remark Quick Stats, which grades tests and tabulates surveys, providing powerful reports with the click of a button.

Image Scanning vs. Traditional OMR

The main difference between the two types of OMR scanning is in the hardware and paper with which they work. Remark Office OMR works with common image scanners, multi-function printers and mobile scanning apps (anything that can create a suitable image – PDF, Tiff, JPG). These are the type of scanners that can also be used for scanning pictures or pages of text.

On the other hand, traditional OMR readers are commonly associated with standardized testing, pre-printed forms, and number two pencils. When using traditional OMR products, users are tied to purchasing 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.
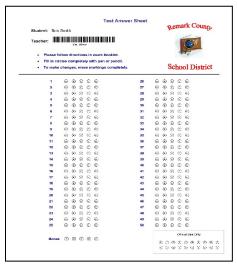
Remark Office OMR offers both cost savings and flexibility. Forms are created in any page layout, word processing, or survey design software. These forms do not need special registration marks or drop-out inks. The user can duplicate the forms on a laser printer or photocopier. Respondents can use any writing instrument (pen, pencil, marker, etc.) to fill in their plain-paper forms.
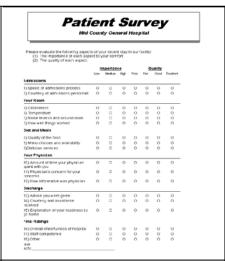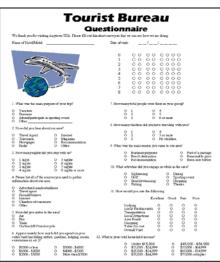
Form Creation

Following our basic form design guidelines ensures that you get the best recognition results possible. Remark Office OMR is a "trainable" software package, so rather than you having to conform to a particular form design, you tell the software what your form looks like. Forms can be created anywhere from word processors to survey design packages to art programs, including: Microsoft Word, Microsoft Excel, Google Docs, Survey Pro (Apian Software), Concord (Data Blocks), Adobe InDesign and many more.
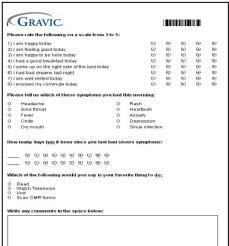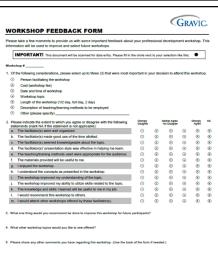
Example Applications & Forms

Optical Mark Recognition (OMR) technology is ideal for processing many kinds of forms, including compiling survey results, summarizing personnel evaluations, grading tests, and tabulating ballots. Sample application forms are available on our website. The following are a few representative forms that were created in Microsoft Word. Free form reviews are available for all registered users to make the most of your Remark software.

Scanners/Multifunction Printer Options

Remark Office OMR is compatible with most scanners on the market today. Specifically, the software works with scanners that support the TWAIN scanning protocol. These scanners include some or all models made by the following manufacturers: Fujitsu, Lexmark, Xerox, Kodak, Canon, Epson, Ricoh, Panasonic, and others.

Remark Office OMR can also read image files, which can be created by multifunction printers (MFP) from companies such as Lexmark, Xerox, Ricoh, Sharp, Epson, Oki Data, Canon, Muratec, HP, Samsung, and Brother. In addition there are many scanning apps that can create suitable image files for processing. Click here for more information on scanners.

Using Remark Office OMR

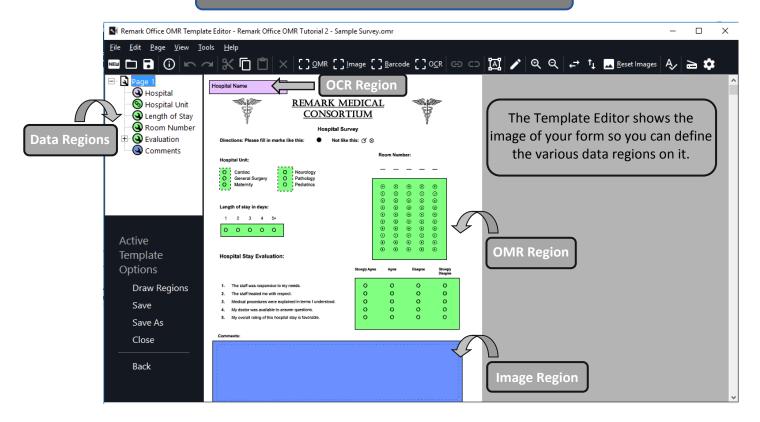There are three basic steps to using the software. 1) Scan a blank copy of the form and tell the software how to interpret the questions on the form by creating a form template. 2) Scan the completed forms and review for exceptions using the Data Center. 3) Run reports using Remark Quick Stats, or export the data for further analysis.

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 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.

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 printer (Tiff, PDF, JPG, BMP, PNG, and PCX/DCX formats are supported). When processing forms, the software can add descriptive data on the fly, or use a database lookup feature to add external information to your data set for more detailed reporting.

After reading completed forms, the collected data appear in a spreadsheet-style grid window where any exceptions are color coded and flagged for easy review. Often exceptions are the result of improperly filled in forms such as questions that were not answered (blank responses) and cases where multiple responses are marked when they are not allowed. The software provides a Review Exceptions feature for automatic detection and correction of exception cases. When in review mode, an image of the exception is displayed and the user can optionally correct these exceptions. Additionally, you can use speech recognition for correcting exceptions or to simplify entry of qualitative data, such as handwritten comments, using your microphone or headset.

Remark Office OMR uses Gravic's powerful, patented read engine to process your forms, and includes advanced features for recognizing imperfect or degraded forms. The software has the ability to ignore large marks, such as the X character, when someone uses it to cross out an incorrectly marked response rather than using an eraser. Gravic's patented dynamic brightness compensation tool automatically compensates for brightness changes on forms (due to scanner settings or photocopying when using multiple devices). The software can also detect blank pages that are accidentally scanned.

Step 3: Exporting (Saving) and Analyzing Data:
The processed data can be saved to a variety of output file formats, including the following:

Formats	Applications Supported
Spreadsheet Formats	Excel, CSV, and Text
SAV	SPSS statistical software
Database Formats	Access, SQL Server, Oracle, dBase, and Paradox
ExamSoft	ExamSoft testing application
HTML and XML	Internet or Intranet applications
Cloud Storage	Google Drive, Dropbox
ODBC	Various relational databases, such as Oracle, SQL Server, or MariaDB
Survey Pro and Statpac	Apian Software survey design and StatPac analysis packages
Custom	Customized text file for virtually any analysis application
Remark	Format for use within the Remark software

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 Microsoft Outlook® or use Remark's built-in email client in conjunction with your SMTP server to share information effortlessly.

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.

Remark Quick Stats also creates report batches. Report batches allow you to display, print, and export multiple reports in a single operation with just a few mouse clicks. Report batches 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 to the right individuals quickly and efficiently.

Survey Tabulation Highlights:

- **Quick and easy tabulation.** Using Quick Survey, generate standard reports in one click.

- **Customizable reporting.** Use Advanced Survey 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.

- **Batch report.** 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) response**s: 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.

Integrated Item Analysis Report - Provides easy distribution and viewing of both quantitative data and handwritten responses in one streamlined report.

Ballot Results Report - Streamlines the tabulation of ballot style responses. It tabulates and displays the choices in order from highest to lowest selection.

Test Grading Highlights:

- **Quick and easy test grading**. Using Quick Grade, simply scan the answer key with the test answer sheets, click a button and reports are produced.

- **Sophisticated test grading**. Use Advanced Grade to set up an answer key with multiple correct answers, select a grade scale, enter question points, set benchmark scores for comparison against established benchmarks, and other grading information for your test.

- **Learning objectives**. Used to insert test concepts and measure against mandated standards. Individual grade scales can be added to each learning objective.

- **Multiple test versions**. Grade multiple versions of a test with multiple answers keys.

- **Scaled scores**. Advanced Grade 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.

- **Supports for rubrics**. A rubric field type allows for collection and reporting of rubric style grades along with the multiple choice questions.

- **Partial credit**. Awards partial credits for test questions.

- **Grade export**. Supports various gradebooks, including a custom gradebook for exporting into virtually any gradebook or learning management system.

- **Achievement by group**. Reports are available to compare achievement across various groups of students.

- **Changed answer report**. Tracks changes made to answers, both on the form and after scanning, to pinpoint any possible data inconsistencies.

- **Emailing reports to individual recipients**. Email reports to individual students, especially useful for emailing the student grade reports.

- **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, Percent Correct, 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 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.

Test Grading Reports:

Test Analysis Report - Provides overall summary information and points out red flags in a test, such as questions where a distractor is chosen more than the correct answer, students showing very strong comparisons of correct/incorrect answers, and test questions with a poor correlation.

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 - Provides a comparison of information within the data set. For example you can compare schools, instructors, classes, gender, etc.

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 - Provides a breakdown of student performance based on demographic information. This report is particularly effective when trying to ensure that all subgroups of students are making adequate 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.

Changed Answer Reports - Provides a breakdown of questions with answers that have been changed by crossing out responses or making changes to the data grid. This report can be generated by students or by questions.

Student Response Similarities Report - Provides a display of students who have similar responses on the test. This report is useful when concerned that students might be cheating.

Student Achievement Report - Provides the ability to evaluate students' grades in terms of whether they achieved the overall test benchmark or learning objectives benchmarks defined for the test. This report allows you to quickly see who has and has not mastered the information.

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.**

⇒ Patented mark recognition technology allows imperfect forms to be read seamlessly. **No registration marks or drop-out colors are needed.**

⇒ Automatically recognizes machine printed text with Optical Character Recognition (OCR).

⇒ Recognizes a wide variety of barcodes.

Scanning and Reading Images

⇒ Works directly with most desktop scanners using the TWAIN scanner protocol. An automatic document feeder is recommended. Speed depends on the scanner (typically runs at rated speeds).

⇒ Reads image files (TIF, PDF, JPG, BMP, PNG, PCX) created by multi-function printers, other scanners and various mobile scanning apps.

⇒ 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. Software supports any page size your scanner can handle.

⇒ Effortlessly add data on the fly to your data set when reading forms (e.g. a course identifier, session identifier, location, etc.).

⇒ 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.

⇒ Validates data against an external database to 1) confirm that recognized data from a field appear in a particular database field and 2) bring in external data to assist with detailed reporting.

⇒ Easily sorts forms by allowing users to mix forms of different types into the same batch. Forms can have form, page, and respondent identifiers on them to eliminate the pre-sorting of forms.

⇒ Saves handwriting, such as a signature block or comments section, as image snapshots. View the handwriting on screen for easy data entry, or use speech recognition to enter comments in the Remark Office OMR software. Respondent reports are available to view the handwritten comments.

⇒ Supports qualitative coding where the user reviews the qualitative responses on-screen and then enters a descriptive code or theme.

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.

⇒ Automatically filters data and generates separate reports determined by fields you select.

⇒ Analysis results can be saved to PDF, XLSX, HTML, Text, and RTF file formats, as well as right to Google Drive or Dropbox.

⇒ Email data and reports as attachments with Remark's built-in email client in conjunction with your SMTP server or Microsoft Outlook®.

Minimum System Requirements

- Personal computer with 2 GHz or faster processor
- Windows Windows® 32-bit and 64-bit operating systems: Windows 7 SP1, Windows 8.1, Windows 10 (Note: SP stands for "Service Pack")*
- .NET 4.6 (or higher) framework
- Microsoft Visual C++ 2015 Redistributable Package (will be installed if not present)
- 2 GB RAM
- 1 GB free fixed disk space
- Screen/monitor resolution of 1024x768 or higher and at least 32-bit color
- Mouse or other pointing device

Recommended optional requirements

- Supported scanner (includes multi-function printer that has scanning capabilities)
- Windows-supported printer
- Internet connection recommended for initial software activation and email functionality
- PDF viewer required to view installed documentation
- Microphone for speech recognition
- 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

* The software uses activation for license regulation. If you choose to install on a virtual machine (VM), due to the nature of how virtual environments behave, activation is required every time the software is run.

Who Uses Remark Office OMR?

⇒ **Education Professionals** for student testing, institutional research, course evaluations, and 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 compliance and community surveys

⇒ **Safety Professionals** for behavioral based safety observations, audits, checklists, and inspections

⇒ **Human Resource Departments** for employee surveys, time sheets, and evaluations

⇒ **Training Professionals** for course/instructor evaluations, assessments, and tests

⇒ **And Many More**