











# New from SKM Systems Analysis, Inc.



## SKM Mobile App for iOS and Android!

Take SKM on the go! The SKM Mobile app provides an intuitive experience that let's you quickly and easily collect data from the field and seamlessly import it to your PTW desktop program! You can also view study results on your phone or tablet - such as what arc flash PPE to wear or to verify equipment settings!

View one-lines, take pictures, videos, scan QR codes, scribble notes, and more!



#### **Benefits**

- Transfer field collection directly to SKM without having to write anything down on paper.
- Take pictures, videos, audio, scribble notes and save with each equipment.
- Scan QR equipment codes to quickly locate the component on the mobile app to view equipment details and study results.
- View entire power system oneline while in the field in the palm of your hands!

## MySKM Cloud

- Upload Mobile app projects to MySKM to use in PTW desktop software and vice-versa!
- Download PTW desktop projects to allow field engineers to verify equipment settings and study results, such as available short circuit results, incident energy, required PPE selection, and more!
- Assign users and maintain security permissions for each project.

## **Auto Coordination & Evaluation**

SKM Auto Coordination & Evaluation module is designed to instantly identify coordination and protection issues by evaluating equipment for adherence to basic coordination and protection rules established by the National Electric Code (NEC) and recommended industry standard practices.

The software is designed to evaluate the entire system and identify violating equipment. Quickly view TCC plots to determine the cause of the miscoordination with a single click to efficiently make changes to improve coordination.

Auto Coordination & Evaluation is a powerful and time saving tool for power system evaluation and operation.

#### **Features**

- Comprehensive report all system components and their upstream/downstream protective devices.
- Specific reports of a single equipment and their upstream/downstream protective devices.
- Evaluates and displays the status and evaluation notes with Pass/Fail/Warning status for each component.
- Displays violation details in accordance with National Electric Code (NEC) and recommended industry standard practices.
- Dynamic TCC drawing displaying selected system component withstand/damage curves and protective device curves in the path upstream and downstream to the closest bus.
- Fix coordination issues and instantly see updated results.
- Integrated with Equipment Evaluation study module to view greater equipment details, load flow, and short circuit study results.

## **Cable Ampacity**

SKM Cable Ampacity module is for accurate calculation of ampacity and temperature rise in various power cable installations, which is an important part of power system design and analysis. The calculation determines the proper cable sizes to carry specified loads in designing new systems and upgrading power cable installations.

The software examines cable temperatures and ampacity in performing analysis of existing systems. The accuracy of the calculation provides increased confidence in the design, upgrading, and analysis projects.

The software is an efficient tool for making complex calculation tasks straightforward and easy.

#### Ronofite

- Calculate cable ampacity given its maximum conductor temperature.
- Calculate cable maximum conductor temperature given its ampacity.

#### **Features**

- Accurate calculation of cable ampacity and temperature rise in various power cable installations.
- · Based on and fully compliant with IEC 60287.
- Uses the Neher-McGrath approach where IEC 60287 does not apply (considers non-unity load factor)
- · Model cable physical characteristics.
- Over 500 prebuilt underground cable raceways, with ability to add user custom models.



# **Electrical Engineering Software**

- DAPPER® Integrated Electrical Analysis Software. Comprehensive Three Phase Short-Circuit Studies, Load Flow Study, Demand Load Study, Feeder and Transformer Sizing Study, Impact Motor Starting Study, and Load Schedules. (Unbalanced Studies also available)
- CAPTOR® Time-Overcurrent Coordination. Graphical Time-Overcurrent Coordination. Integrated with one-lines, short-circuit modules, Equipment Evaluation, and Arc Flash. Comprehensive protective device library.



**AUTO COORDINATION & EVALUATION** Instantly identify coordination and protection issues by evaluating each equipment for adherence to the National Electric Code (NEC) and recommended industry standard practices. (Requires Dapper and Captor modules)

◆ ARC FLASH EVALUATION Calculates the incident energy and arc flash boundary for each bus in the system. Trip times are automatically determined from the protective device settings and arcing fault current values. Incident energy and arc flash boundaries are calculated based on accumulated fault values. Clothing requirements are specified from a user-defined clothing library. Clearing times can be reduced based on current-limiting capabilities. Complies with OSHA, NFPA 70E, NEC 110.16, NESC, and IEEE 1584 requirements. Generates custom labels and work permits.



**CABLE AMPACITY** Accurate calculation of ampacity and temperature rise in various power cable installations. Based on and fully compliant with IEC 60287.

- A\_FAULT ANSI Short-Circuit Study. Three Phase Short-Circuit Study based on the ANSI/IEEE C37 Standards. Separate solutions for low, medium and high voltage systems and for symmetrical, momentary and interrupting calculations. (Unbalanced Studies also available)
- IEC\_FAULT IEC Short-Circuit Study 909 or 363. Three Phase Short-Circuit Study based on the IEC 60909 or IEC 61363 Standards. (Unbalanced Studies also available)
- EQUIPMENT EVALUATION Equipment Evaluation Report. Automatically compares short-circuit ratings, withstand ratings. Applies de-rating adjustments and user defined pass/marginal/failed criteria. Includes error checking for input data and topology.



**AUTO DESIGN** Automatically sizes Cables, Transformers, Buses, and Protective Devices to achieve proper size and ratings that meets criteria limits set by the Equipment Evaluation study. Utilize user-defined Design libraries. Best suited for new system designs or to resolve undersized and/or overdutied equipment for existing systems. (Requires Equipment Evaluation module)

- ♦ **IEE WIRING REGULATION SIZING** Integrates the rules and data tables from the IEE Wiring Regulation to size cables based on the design loads of the power system. Automatically select the correct table from the IEE Wiring Regulation and pick the proper cable size.
- TMS Transient Motor Starting Simulation. Time-based motor starting simulation with graphical output. Includes reduced voltage and capacitor starting, graphical motor and load models.
- ♦ **HI\_WAVE** *Harmonic Investigation and Filter Design.* Frequency Scan, Harmonic Current, Voltage Distortion, Harmonic Load Flow and Interactive Filter Design.
- I\*SIM Dynamic Simulation and Transient Stability. Dynamic Response to Power System Electro-Mechanical Disturbances, Generator Sizing and Stability, Flux Level Machine Representation. User Defined Graphical Models for Exciter, Turbine Governor, PSS, and other controllers.
- UNBALANCED/SINGLE PHASE STUDIES

Load flow, short-circuit, demand load analysis, sizing, and load schedules. Reports single-phase loads and unbalanced operating conditions including phase and sequence currents and voltages.

- DISTRIBUTION RELIABILITY Reliability Analysis. Calculates the reliability indices of individual load points and the overall distribution systems with either radial or loop configuration. Includes Load Point MTTF, Failure/Year, MTTR, Annual Outage, EENS, ECOST, and other IEEE indices. Cost-related factors and aging factors are included in the analysis to compare alternative designs.
- DC SYSTEMS ANALYSIS Battery Sizing, Load Flow, & Short Circuit Analysis. Evaluate all loading conditions for DC duty cycle loads and AC emergency loads. Complies with IEEE std. 485, 1115, 399, 946, and IEC std. 61660. Includes DC Arc Flash when used together with Arc Flash Evaluation module.



**PTW DATA COLLECTION** Standalone program for engineers that desire to capture equipment data electronically while working in the field. Engineers may also use it to transfer hand written data into the software for more experienced engineers to review and conduct analysis on.

- PTW VIEWER Read-only version of PTW for displaying, printing, and exporting all study results. Create or expand one-lines and apply datablocks. View Time-Current Curves. View and create customized Arc Flash Labels and Work Permits.
- GROUND MAT Substation Ground Grid Design and Analysis. Optimizes grid design using general purpose finite element algorithm for potential analysis and graphical facilities to validate grounding systems efficiency.
- CABLE-3D Solves complex three-dimensional cable pulling tension and sidewall pressure calculations.



**Data Exchange** Import SPEL projects into SKM software to take advantage of a powerful calculation engine to conduct various complex analyses of electrical power systems. Interface to exchange data with Autodesk Revit now included at no additional cost!



12000

# **Special PTW Combination Packages**

SKM Systems Analysis is pleased to offer six PTW Software combination packages. The Combo-Packs offer the most requested PTW study modules used by over 50,000 engineers. No substitutions allowed on any packages. Packages are not available with any other discount. Existing software packages cannot be upgraded to any packages.

Additional study modules may be added to any package.

## Combo-Pack I • DAPPER Equipment Evaluation • CAPTOR Arc Flash Evaluation • IEC 909 • A FAULT • IEC 363 **Buses** Price\* 50 \$7,495 100 \$9,195 300 \$11,995 1000 \$15,695 2000 \$17,795 5000 \$22,395

\$34,295

| Combo-Pack II                      |  |  |  |
|------------------------------------|--|--|--|
| DAPPER     Unbalanced Single Phase |  |  |  |
| • CAPTOR                           | <ul> <li>Equipment Evaluation</li> </ul> |  |  |
| • TMS                              | <ul> <li>Arc Flash Evaluation</li> </ul> |  |  |
|                                    |  |  |  |
| Buses                              | Price*                                   |  |  |
| 50                                 | \$7,495                                  |  |  |
| 100                                | \$9,195                                  |  |  |
| 300                                | \$11,995                                 |  |  |
| 1000                               | \$15,695                                 |  |  |
| 2000                               | \$17,795                                 |  |  |
| 5000                               | \$22,395                                 |  |  |
| 12000                              | \$34,295                                 |  |  |
|                                    |  |  |  |

| Aut Aut                         | omation*Pack                          |  |
|---------------------------------|---------------------------------------|--|
| • DAPPER                        | Cable Ampacity                        |  |
| • CAPTOR                        | <ul> <li>Auto Coordination</li> </ul> |  |
| <ul> <li>Auto Design</li> </ul> | • Equipment Evaluation                |  |
|                                 |                                       |  |
| Buses                           | Price*                                |  |
| 50                              | \$8,695                               |  |
| 100                             | \$9,195                               |  |
| 300                             | \$12,095                              |  |
| 1000                            | \$15,595                              |  |
| 2000                            | \$17,795                              |  |
| 5000                            | \$22,395                              |  |
| 12000                           | \$34,395                              |  |
|                                 |                                       |  |

Automotion\*Dock

| Power*Pack           |          |  |  |
|----------------------|----------|--|--|
| • DAPPER             |          |  |  |
| • CAPTOR             |          |  |  |
| Arc Flash Evaluation |          |  |  |
|                      |          |  |  |
|                      |          |  |  |
| Buses                | Price*   |  |  |
| 50                   | \$5,795  |  |  |
| 100                  | \$8,095  |  |  |
| 300                  | \$11,295 |  |  |
| 1000                 | \$13,495 |  |  |
| 2000                 | \$15,595 |  |  |
| 5000                 | \$21,395 |  |  |
| 12000                | \$31,795 |  |  |
|                      |          |  |  |



# **Special PTW Combination Packages**

SKM Systems Analysis is pleased to offer six PTW Software combination packages. The Combo-Packs offer the most requested PTW study modules used by over 50,000 engineers. No substitutions allowed on any packages. Packages are not available with any other discount. Existing software packages cannot be upgraded to any packages.

Additional study modules may be added to any package.

| IEC Industria        | l Pack   |
|----------------------|----------|
| • DAPPER             |          |
| • CAPTOR             |          |
| Arc Flash Evaluation |          |
| • IEC_909            |          |
| Buses                | Price*   |
| 50                   | \$6,895  |
| 100                  | \$9,195  |
| 300                  | \$12,695 |
| 1000                 | \$15,595 |
| 2000                 | \$17,795 |
| 5000                 | \$22,395 |
| 12000                | \$33,795 |

NEW

| NEW IEC Mariti       | me Pack   |  |
|----------------------|-----------|--|
| • DAPPER             | • HI_WAVE |  |
| • CAPTOR             | • IEC_363 |  |
| Arc Flash Evaluation |           |  |
| • TMS                |           |  |
| Buses                | Price*    |  |
| 50                   | \$11,695  |  |
| 100                  | \$13,395  |  |
| 300                  | \$17,295  |  |
| 1000                 | \$20,995  |  |
| 2000                 | \$23,095  |  |
| 5000                 | \$27,695  |  |
| 12000                | \$41,995  |  |

| Price*   |
|----------|
| \$11,595 |
| \$13,795 |
| \$16,995 |
| \$19,195 |
| \$21,795 |
| \$27,595 |
| \$38,195 |
|          |

**DC Systems Pack** 

<sup>\*</sup>Price includes one year of upgrades, software maintenance and support.



# **Combination & Upgrade Pricing Matrix**

|    | PTW Program Modules with Add-On Options | PTW-LT<br>50 Buses                        | DAPPER<br>50 Buses | DAPPER<br>100 Buses | DAPPER<br>300 Buses | DAPPER<br>1000 Buses | DAPPER<br>2000 Buses | DAPPER<br>5000 Buses | DAPPER<br>12000 Buses | CAPTOR<br>1000 Buses |
|----|---|---|--------------------|---------------------|---------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|
|    | BASE PRICE                              | \$3,895                                   | \$2,290            | \$4,360             | \$5,500             | \$8,000              | \$10,300             | \$16,000             | \$22,900              | \$5,095              |
|    | Maximum Components<br>Per Project       | 150                                       | unlimited          | unlimited           | unlimited           | unlimited            | unlimited            | unlimited            | unlimited             | unlimited            |
|    | One-line Interface                      | included                                  | included           | included            | included            | included             | included             | included             | included              | included             |
|    | DAPPER<br>Study Modules*                | Demand Load<br>and Fault<br>Analysis Only | included           | included            | included            | included             | included             | included             | included              | See<br>DAPPER        |
|    | CAPTOR<br>Protective Coordination       | included                                  | \$2350             | \$2350              | \$2950              | \$2950               | \$2950               | \$3550               | \$4700                | included             |
| NE | Auto Coordination<br>& Evaluation       | \$2350                                    | \$2350             | \$2350              | \$2950              | \$2950               | \$2950               | \$3550               | \$4700                | \$2950               |
|    | Arc Flash<br>Evaluation                 | \$2950                                    | \$2950             | \$2950              | \$3550              | \$3550               | \$3550               | \$4050               | \$5250                | Requires<br>DAPPER   |
| NE | Cable Ampacity                          | \$2350                                    | \$2350             | \$2350              | \$2950              | \$2950               | \$2950               | \$3500               | \$4700                | \$2950               |
|    | A_FAULT Fault Analysis<br>ANSI C37      | \$1170                                    | \$1170             | \$1170              | \$1750              | \$1750               | \$1750               | \$1750               | \$2950                | \$1750               |
|    | IEC_909<br>Fault Analysis               | \$1170                                    | \$1170             | \$1170              | \$1750              | \$1750               | \$1750               | \$1750               | \$2950                | \$1750               |
|    | IEC_363<br>Fault Analysis               | \$1170                                    | \$1170             | \$1170              | \$1750              | \$1750               | \$1750               | \$1750               | \$2950                | \$1750               |
|    | Equipment<br>Evaluation                 | \$1170                                    | \$1170             | \$1170              | \$1750              | \$1750               | \$1750               | \$1750               | \$2950                | \$1750               |
| NE | Auto<br>Design                          | \$1170                                    | \$1170             | \$1170              | \$1750              | \$1750               | \$1750               | \$1750               | \$2950                | \$1750               |
|    | IEE Wiring<br>Regulation Sizing         | \$1170                                    | \$1170             | \$1170              | \$1170              | \$1170               | \$1170               | \$1170               | \$2350                | \$1170               |
|    | TMS Transient Motor Starting            | \$2350                                    | \$2350             | \$2350              | \$2350              | \$2350               | \$2350               | \$2350               | \$3500                | \$2350               |
|    | HI_WAVE<br>Harmonic Analysis            | \$2950                                    | \$2950             | \$2950              | \$3500              | \$3500               | \$3500               | \$3500               | \$4700                | \$3500               |
|    | I*SIM<br>Transient Stability            | \$5850                                    | \$5850             | \$5850              | \$5850              | \$5850               | \$5850               | \$5850               | \$7000                | \$5850               |
|    | Unbalanced<br>Three-Phase/Single-Phase  | Requires<br>DAPPER                        | \$2400             | \$2950              | \$3500              | \$3500               | \$3500               | \$3500               | \$4700                | Requires<br>DAPPER   |
|    | Distribution<br>Reliability             | \$4670                                    | \$4670             | \$4670              | \$4670              | \$4670               | \$4670               | \$4670               | \$5850                | \$4670               |
|    | DC Systems Analysis                     | \$5850                                    | \$5850             | \$5850              | \$5850              | \$5850               | \$5850               | \$5850               | \$7000                | \$5850               |
|    | Data Exchange<br>(Revit/XML/SPEL)       | \$2300                                    | \$2300             | \$2300              | \$2300              | \$2300               | \$2300               | \$2300               | \$3450                | \$2300               |

\*DAPPER Study Modules Include: Demand / Design Load Analysis, Feeder / Transformer Sizing, Panel, MCC, SWBD Schedules, Comprehensive Fault Analysis, LoadFlow / Voltage Drop, Impact Motor Starting

## ADDITIONAL PROGRAMS:

|    | PTW Data Collection<br>(2000 Buses) | \$2795   |
|----|-------------------------------------|----------|
|    | PTW Data Collection<br>(5000 Buses) | \$5495   |
| EW | SKM Mobile App iOS/Android          | \$299/yr |

| PTW Viewer<br>(2000 Buses)  | \$1195 |
|-----------------------------|--------|
| PTW Viewer<br>(5000 Buses)  | \$2395 |
| PTW Viewer<br>(12000 Buses) | \$7195 |

|     | Ground Mat                  | \$4395    |
|-----|-----------------------------|-----------|
|     | Cable 3D                    | \$1095    |
| NEV | MySKM Cloud<br>Subscription | \$1500/yr |



# Software Support and Services

## Service and Support

SKM's Technical Support Team is a quality-driven organization committed to helping you quickly resolve issues or questions within the software. Unlimited technical support and software updates are provided as part of the Maintenance and Support service. The first year is included as part of your purchase!

| your purchase:                          |                        |                               |
|---|------------------------|-------------------------------|
| Special Packages                        | List Price<br>Per Year | Timely Renewal Price Per Year |
| Combo-Pack I                            | \$2250                 | \$1800                        |
| Combo-Pack II                           | \$2250                 | \$1800                        |
| Automation*Pack                         | \$2250                 | \$1800                        |
| Power*Pack                              | \$1705                 | \$1365                        |
| IEC Industrial Pack                     | \$1810                 | \$1450                        |
| IEC Maritime Pack                       | \$2495                 | \$1995                        |
| DC Systems Pack                         | \$2170                 | \$1735                        |
| PTW-LT                                  | \$650                  | \$565                         |
| PTW Study Modules                       |                        |                               |
| DAPPER                                  | \$565                  | \$452                         |
| CAPTOR                                  | \$565                  | \$452                         |
| Auto Coordination & Evaluation          | \$390                  | \$312                         |
| Arc Flash Evaluation                    | \$465                  | \$372                         |
| Cable Ampacity                          | \$390                  | \$312                         |
| A_FAULT                                 | \$270                  | \$216                         |
| IEC_FAULT 909                           | \$270                  | \$216                         |
| IEC_FAULT 363                           | \$270                  | \$216                         |
| Equipment Evaluation                    | \$270                  | \$216                         |
| Auto Design                             | \$270                  | \$216                         |
| IEE Wiring Regulation Sizing            | \$230                  | \$184                         |
| TMS                                     | \$395                  | \$316                         |
| HI_WAVE                                 | \$330                  | \$264                         |
| I*SIM                                   | \$650                  | \$520                         |
| Unbalanced/Single Phase                 | \$455                  | \$364                         |
| Distribution Reliability                | \$455                  | \$364                         |
| DC Systems Analysis                     | \$650                  | \$520                         |
| Data Exchange (Revit/XML/SPEL)          | \$300                  | \$240                         |
| Additional Baselines Users              | \$340                  | \$272                         |
| Additional Simultaneous Users           | 30 to 50% discou       |                               |
| Additional Programs                     | (based on quanti       | ity)                          |
| Additional Programs PTW Data Collection | ¢575                   |                               |
| PTW Data Collection PTW Viewer          | \$575<br>\$510         |                               |
| Ground Mat                              | \$510<br>\$430         |                               |
|   | \$420                  |                               |
| CABLE-3D                                | \$175                  |                               |

#### Maintenance for software at higher buses will be additional

+2.5% @ 1000 buses. +5% @ 2000 buses.

+7% @ 5000 buses. +10% @ 12000 buses.

Late fees will be added for renewal of all expired licenses

MySKM Cloud Subscription is not a perpetual license option. Cloud projects will be deleted if the subscription is not renewed.

## Upgrades and Discounts

#### Upgrades

When upgrading from any product or combination to another product or combination, you will receive credit as long as the previously purchased software is current in Software Maintenance and Support Service.

#### **Competitive Upgrades**

Call about our competitive upgrade pricing.



1 Pearl Street Redondo Beach, CA 90277 USA 1 (800) 500-4SKM www.skm.com Systems Analysis, Inc. sales@skm.com

### **Network Options**

#### Single User LAN Network License

Allows one user at a time, regardless of the number of program modules, on a single Local Area Network (LAN).

Price: Cost of program or combination package plus \$1500

#### Single User WAN Network License

Allows one user at a time, regardless of the number of program modules, on a Wide Area Network (WAN).

Price: Cost of program or combination package plus \$3000

#### **Concurrent User Network License**

Allows study modules to be accessed at the same time by multiple users Price: Upgrade to Network license first (see above), plus each additional study module at a 20% discount off full price.

(20% discount not applicable to Combo-Packs or Power\*Packs)

## Corporate Licenses

#### Multi-Site Licenses

Please contact SKM for pricing at sales@skm.com.

## **Specifications**

#### **Recommended System Requirements**

- PC running Windows 10 or newer
- 120 GB+ Solid State Hard Drive
- Intel i5 or better Processor
- 8GB+ of RAM

**Dual monitors** 

#### What's Included in Your Order?

- Software program and applicable libraries
- Hardware key protection for each license
- Software Maintenance and Support Service, including technical support as needed; Maintenance is annually renewable in following years
- Major updates as released for one year
- User's Guides with step-by-step tutorials
- Tutorial Video DVD
- UPS Ground Shipping (Domestic USA); Expedited shipping available

## **Acceptable Forms of Payment**

- Purchase Order (net 30 days) with approval
- Check
- Bank wire transfer
- MasterCard, VISA, or AMEX



#### Software Training

#### **Classroom Training**

Visit www.skm.com and click on Training to view scheduled training in your area.

#### **On-Site Training**

Training more than 5 engineers? We'll come to you! Email training@skm.com for a personalized on-site quote.

## Mv SKM Customer Portal

With the My SKM Customer Portal, you'll be able to:

- Obtain pricing and order products and upgrades
- View license information
- View all invoices for your account
- Enroll in training
- Renew software maintenance
- View Transaction History, and much more!