Please call eRange at (289) 932-1776 or check our website at www.e-range.com to confirm you are using the most up-to-date information available for POS integration if this document is dated more than 3 months old.

Technical Data Sheet – eRange SUN DLL V.30.x.x

The 2014 version 30 dll is backwards compatible with previous versions of the dll produced at Kane's Distributing Ltd so re-coding your point-of-sale eRange call should not be required. The 2014 version 30 dll is much more efficient and streamlined to greatly reduce technical support for both eRange and the POS company when re-installing and new installations. Internet access by the POS station to the eRange PIN server at www.e-range.com is required for version 30 POS integration to function.

The eRange SUN (Single Use Number) PIN generator dll can be used in any point-of sale software. The numbers produced for printing on the point-of-sale receipt will activate a ball dispenser or vending machine to dispense product or services. It is a patented method, protected by U.S. Patent No. 6,850,816 and Canadian Patent No. 2,427,149 and Priority filing in Europe. The POS integration dll requires annual patent licensing fees of $240.00 payable by the end-user golf course or driving range after the first year of use. Annual commissions payable to the integrating POS company are available.

Due to patent enforcement by the patent owner, effective January of 2015 the eRange point-of-sale integration method must be updated to eRangeSUNDLL.dll version 30 or higher. Previous dll versions are obsolete and technical support will not be available for integration's using previous dll versions created by Kane's Distributing (check file/properties/copyright of the dll in use).

The new version 30 dll is backwards compatible with the previous dll versions so re-coding your point-of-sale software to use the version 30 dll should not be required, however updates to your POS software can be re-coded to the simpler dll call below in the 'New Integration' Section. The version 30 dll is backwards compatible but only uses the selection size and discards the other variables you pass to it using the obsolete method in versions 10 and 20 of the old dll. The version 30 dll gets the PIN from the eRange Server(s), allowing the course to change information that automatically updates their POS integration settings and eliminates the 'PINs don't work' technical support calls. The version 30 dll only requires three entries into the dll configuration file. When used by a golf course, the course's unique information is entered in the eRange software, or the test application installed at the course. The resulting configuration file and new dll can be copied to the proper POS folder manually or from the eRange software.

Coding for the dll response should include printing negative numbers on your POS receipt. The negative numbers represent errors and allows quick and efficient eRange technical support if there is a problem, such as 'Invalid PIN' or 'Pins don't work' technical support calls.

Files Required:

- **eRangeSUNDLLTestAPP.exe** – This application allows you to test the configuration of the eRangeSUNDLL integration outside of the Point of Sales system that it is being integrated with.

- **eRangeSUNDLL.dll** – Version 30.2.1 or higher. This DLL allows a POS program to request a single use PIN from the e-Range PIN server.

- **eRangeSUNDLL.dta** – this file is an example of an eRangeSUNDLL.dll configuration file. Please note that this configuration file contains variables quite different from the eRangeSUNDLL.ini used in previous versions of the dll produced by Kane's Distributing.

Fundamental Use and Operation

This build of the e-Range POS DLL is designed to replace the obsolete eRangeSUNDLL.dll integration method. The customer will be identified via a user name and password. If the values match the PIN Server security records the customer's e-Range hardware configuration stored on the server is used to generate a Single Use Number which is then returned back to the DLL and the DLL returns the value to the point of sales application.

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Coding your POS software for the PIN request from the dll

The eRangeSUNDLL.dll can be used on all 32 and 64 bit Windows platforms provided it is installed in the calling application's path on the target machine. The dll **DOES NOT NEED TO BE REGISTERED** i.e. You do not need to run regsvr32 to use the dll.

Please skip to the 'New POS Integration' section on page 3 if you are writing a new eRange integration and have dll version 30.4.x or higher. The method is much simpler if you have not already written your POS code to use the method in the obsolete dlls.

Integration should be fairly simple with these steps.

1. Copy **eRangeSUNDLL.dll (version 30.2.1 or higher)** and the test application **'eRangeSUNDLLTestAPP.exe'** to the folder that your Point Of Sales application will be run from.
Call eRange at (289) 932-1776 for a user-name and password for your test account and enter those values in the test application and then confirm that you get PIN numbers with the test application.

2. A declaration similar to the one below should be in your POS source code to access the function in the dll... Note that the result 'long' may be a negative number and some coding languages will not allow negative numbers when a variable is declared as a long and the variable must be declared as a 'signed' variable. Make sure you define your variable appropriately for the coding language your POS is written in to allow negative numbers.
   eg: (VB6) Dim lngErangePIN as Long or Public lngErangePIN as Long
            (C++) *signed long* nErangePIN*; or signed long* nErangePIN=0*;*

```
Public Declare Function SunResult Lib "eRangeSUNDLL.dll" (ByVal x1 As
   Long, ByVal x2 As Long, ByVal SelectNum As Long, ByVal STime As
   String) As Long
```

Variables x1 and x2 in the function call can only be of long type, usually are set to zero and exist for backwards compatibility if you have coded your POS to use old dlls versions 20 and 10. The time string value must be a string, you should not pass a variable value declared as a date or time.

3. Add a function call…. nErangePIN = SunResult(0, 0, x, '11:59 PM') to your 'sell basket' event in the POS program. Where nErangePIN will be the return PIN value and x is the size of the basket where x=1=Selection1, x=2= Selection2, x=3= Selection3., The version 30 dll now ignores any values other than the selection size. The only variable you need to change is the selection size. You can hardcode your call as above (0 for the first value, 0 for the second value), code your call for selection size 1,2 or 3, hardcode the time string as '11:59 PM'.

Username and Password for the eRangeSUNDLL.dll file is located in the erangeSUNDLL.dta file. The erangeSUNDLL.dta file should exist in the same directory where the eRangeSUNDLL.dll file is located for your POS install.

You should still print negative numbers on your receipt as they assist with technical support issues. For a better understanding of the error codes that may be returned check this document or the error list available in the test application. A negative return is an error, and may contain a sold out condition.

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New POS Integrations... (For eRangeSUNDLL.dll Versions 30.4.x)

The eRangeSUNDLL.dll can be used on all 32 and 64 bit Windows platforms provided it is installed in the calling application's path on the target machine. The dll **DOES NOT NEED TO BE REGISTERED** i.e. You do not need to run regsvr32 to use the dll.

Integration should be fairly simple with these steps.

1. Copy **eRangeSUNDLL.dll (version 30.4.1 or higher)** and the test application **'eRangeSUNDLLTestAPP.exe'** to the folder that your Point Of Sales application will be run from.
    Call eRange at (289) 932-1776 for a username and password for your test account and enter those values in the test application and then confirm that you get PIN numbers with the test application.

2. A declaration similar to the one below should be in your POS source code... Note that the result 'long' may be a negative number and some coding languages will not allow negative numbers when a variable is declared as a long and the variable must be declared as a 'signed' variable. Make sure you define your variable appropriately for the coding language your POS is written in to allow negative numbers.
    eg: (VB6) Dim lngErangePIN as Long or Public lngErangePIN as Long
            (C++) *signed long* nErangePIN*; or signed long* nErangePIN=0*;*

```
Public Declare Function Get_eRange_UserPIN Lib "eRangeSUNDLL.dll"
   (SelectionNumber As Long) As Long
```

3. Add a function call…. nErangePIN = Get_eRange_UserPIN(x) to your 'sell basket' event or define inventory items for baskets of balls in the POS program. Where nErangePIN will be the return PIN value and x is the size of the basket where x=1=Selection1, x=2=Selection2, x=3=Selection3., The version 30.4.x dll has this simpler call with just the selection size required.

Username and Password for the eRangeSUNDLL.dll file is located in the erangeSUNDLL.dta file. The erangeSUNDLL.dta file should exist in the same directory where the eRangeSUNDLL.dll file is located for your POS install.

You should still print negative numbers on your receipt as they assist with technical support issues. For a better understanding of the error codes that may be returned check page 4 of this document or the error list available in the test application. A negative return is an error, and may contain a sold out condition (err -500).

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eRange SUN DLL Error Returns:

negative numbers indicate errors, please define your variable to accept negative numbers to facilitate error returns and print the negative number on your receipt for rapid technical support resolution.

Server Errors
-101 Invalid or Missing Vendor ID. Check customer record in eRange PIN Server configuration.
-102 Invalid or missing Location ID. Check customer record in eRange PIN Server configuration.
-103 Invalid or missing PIN Encryption. Check customer record in eRange PIN Server configuration.
-104 Invalid or missing PIN Expiry. Check customer record in eRange PIN Server configuration.
-105 Invalid PIN size. Must be 1, 2 or 3.
-190 Customer not found. Check cust_id record in eRange PIN Server configuration.
-191 Incorrect password. Check cust_ pass record eRange PIN Server configuration.
-192 Customer account is suspended or inactive.
-193 Customer has unpaid balance.
-194 Customer account has expired.
-200 Unknown eRange PIN Server database error.
-201 eRange PIN Server failed to record raw PIN.
-209 eRange PIN Server failed to update PIN count.

DLL Errors
-170 Unknown error in dll procedure SunResult() or procedure Get_eRange_UserPIN()
-171 Unknown error in dll procedure check_SoldOut_Condition()
-180 Error Loading Customer ID from configuration file eRangeSUNDLL.dta
          Probable cause: eRangeSUNDLL.dta not in calling application path.
-181 Error loading Cust_Pass from configuration file eRangeSUNDLL.dta
          Probable cause: eRangeSUNDLL.dta not in calling application path.
-204 No response from PIN Server, check internet connection or firewalls.
-205 No connection or cannot resolve URL, check internet connection or firewalls.
-225 Unknown exception in dll procedure MakeRequest()
-226 Unknown exception in dll procedure RequestSoldOut()
-227 Unknown exception in dll procedure RequestPIN()
          Probable Cause: invalid data value for 'RequestURL=' in eRangeSUNDLL.dta file.
-228 Unknown exception in dll procedure LoadSettings()
-500 Sold Out - (wait one minute before next PIN request)

HTTP Client Error Codes*
-400 HTTP error - Bad Request
-404 HTTP error - URL Not Found

*It is unlikely that you will get any thing other than the above two client error codes, however should you get a -4xx code not listed above then check the following for a full list of errors go to:

http://en.wikipedia.org/wiki/List_of_HTTP_status_codes#4xx_Client_Error

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eRangeSUNDLL.dta variables and their functions

```
LicenseKey: Unique value for each customer using POS integration.
   Cust_ID: Unique value for each customer using POS integration.
 Cust_Pass: Password value for each customer using POS integration.
            This value is not encrypted in the dta file, however the
            call to the eRange PIN server from the dll is encrypted.

RequestURL: Overrides hard coded eRange PIN Server (Server One) address as
            first web address to access eRange PIN Server.
BackupURL:  Secondary (Backup) PIN Server (Server Two) address in case
            PIN Server One fails. (Available in versions 30.4.x and higher)
  DataPath:
```
Folder path to eRange database - Not used in V30.2.x - (this is for future use to enable recording of POS transaction in the eRange database.)

`RecordToErangeDB:` *'True' or 'False' value - Not used in V30.2.x - (this is for future use to enable recording of POS transaction in the eRange database.)*

Sample data in the dta file:
[Settings]
LicenseKey=TESTING
Cust_ID=erange
Cust_Pass=erange
DataPath=Local Path to eRange database - Future Use to record POS transaction in eRange database
RecordToErangeDB=FALSE
RequestURL=
BackupURL=

NOTE: The SUN Result is Padded with a Selection Size Identifier

The S.U.N. result is actually a 5 digit number, not a six, for use in e-Range reader hardware. The S.U.N. result returned from the server includes a selection size identifier used by the reader hardware. The first digit of the 6 digit S.U.N. result will be a 4 or 5 for selection 1 (commonly referred to as a small basket). The first digit will be a 6 or 7 for selection 2 (commonly referred to as a medium), and 8 or 9 for selection 3 (commonly referred to as a large). This padded digit does not actually constitute part of the result and entering a 6 or 7 as the first digit of a 'Small' (S1) will not result in a 'Medium' (S2) bucket being dispensed. Care should be taken if the customer is only using two sizes and are using words such as Small and Large as these would be defined as selection one and selection two respectively. (A common error is to define the large basket as selection 3)

Although the current code is limited to 1440 SUN purchases per day, per golf course. Changes in the methods can increase the number available to anything required (contact us for details).

Anywhere in the document where the word PIN is used, the word PIN represents the SUN number. For clarity and easier customer integration of the eRange product; PIN was found to be more easily recognized by users (range customers) as a 'key sequence entered at the reader device.'

Please contact Scott at eRange Inc. for help in software programming or questions regarding integration.
(289) 932-1776
support@e-range.com

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POS PRODUCTS WITH eRANGE PIN INTEGRATION

IBS GOLF POS

EZLinks POS

JENCESS