

#1321  
July 19, 2022  
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SUBJECT: Allison DOC® for 6th Generation Controls Release

MODELS AFFECTED: All 1000, 2000, 3000, and 4000 Series Transmissions

### Introduction:

To align with Allison's 6th Generation Controls, Allison DOC® Subscription, V2021.3 was released in October 2021. V2021.3 builds on some basic 6th Generation support that was added in prior Allison DOC® releases and included the 1000 and 2000 Series and 3000 and 4000 Series troubleshooting manuals.

### 6th Generation Cybersecurity:

Allison has introduced new product cybersecurity measures in 6th Generation Controls to protect the integrity and security of our products and systems. These new cybersecurity measures require that the Allison DOC® software is able to authenticate with the TCM when performing reprogramming and most action requests. Allison DOC® software authenticates with the TCM by performing a certificate exchange with the TCM and retrieving a challenge response from Allison's Product Cybersecurity Services (PCS) system. The authentication process requires either the Allison DOC® software to have a real-time internet connection to PCS or the installation of a cybersecurity USB dongle on the same computer with the Allison DOC® software. More details regarding the cybersecurity USB dongle are provided later in this SIL.



**NOTE:** Only Allison DOC® Premium licenses require authentication. Allison DOC® Fleets licenses do not require authentication because reprogramming is not available in Allison DOC® Fleets licenses. Also, none of the action requests requiring authentication are available with Allison DOC® Fleets licenses.

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### Reprogramming with Online Connection to PCS:

When reprogramming a 6th Gen TCM while connected to the internet, the Allison DOC® user must log into PCS. Either TCM Reflash™ account credentials or Allison HUB™ account credentials can be used to log into PCS through Allison DOC®. If the user has both TCM Reflash™ and Allison HUB™ account credentials, the TCM Reflash™ credentials are preferred.

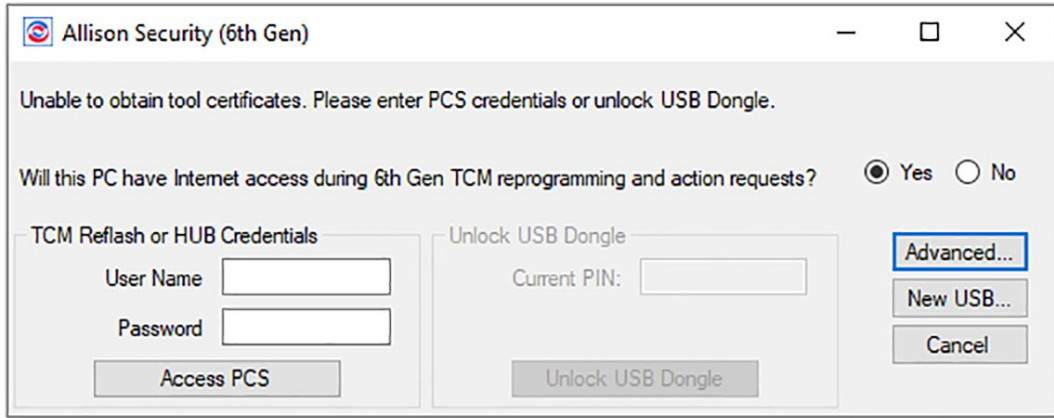


**NOTE:** It is important to remember that when using TCM Reflash™ credentials to log into PCS, the password must be entered in all caps. This is only applicable to logging into PCS. When logging into TCM Reflash™, the password can be entered as normal (mixed case).

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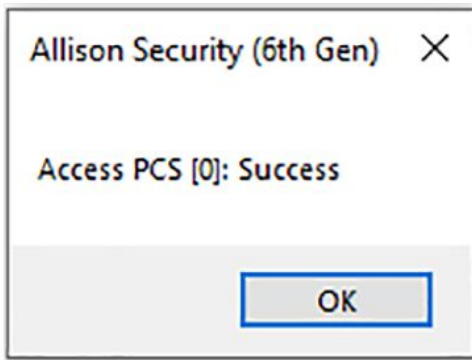
When the "Reprogram" menu is selected while connected to a 6th Gen TCM, the pop-up shown in [Figure 1](#) will be displayed. Since this section of the SIL discusses an online connection, the user will select the radio button "yes" for the question "Will this PC have internet access during 6th Gen TCM reprogramming and action requests?". The user must then enter the appropriate credentials and select "Access PCS". If the credentials are valid, the user will

see a success response as shown in [Figure 2](#). Clicking “OK” to the pop-up in [Figure 2](#) allows the user to proceed with reprogramming the 6th Gen TCM in the same way that 5th Gen TCMs are reprogrammed.



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Figure 1.

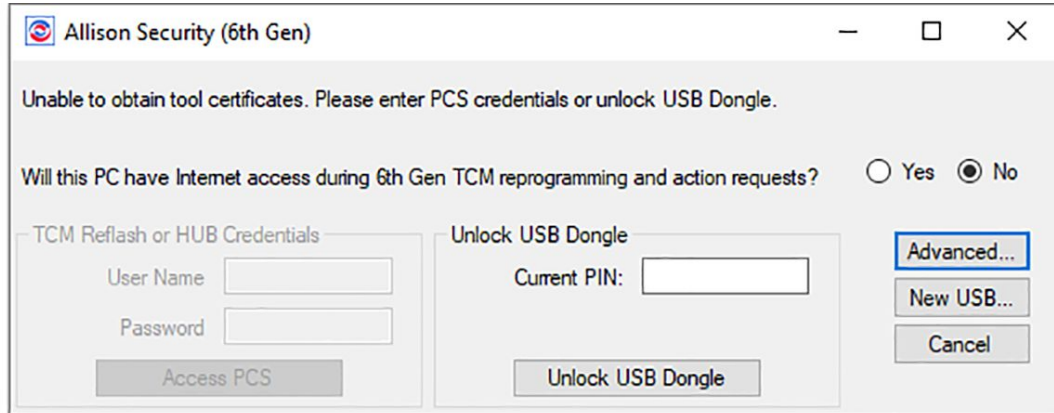


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Figure 2.

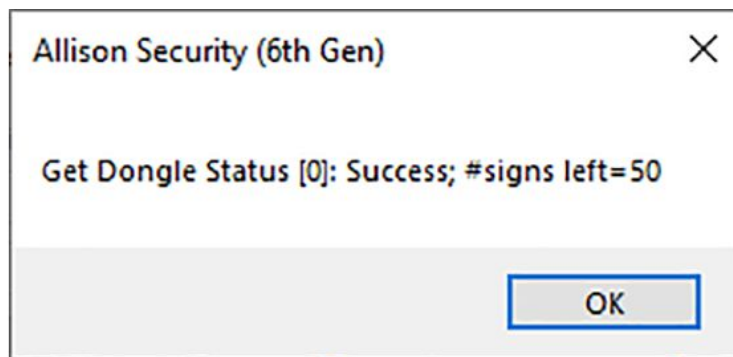
### Reprogramming Offline with USB Dongle:

When reprogramming a 6th Gen TCM while offline, the Allison DOC® user must have an Allison cybersecurity USB dongle installed on the same computer with the Allison DOC® software. When the “Reprogram” menu is selected while connected to a 6th Gen TCM, the pop-up shown in [Figure 3](#) will be displayed. Since this section of the SIL discusses being offline, the user will select the radio button “no” for the question, “Will this PC have internet access during 6th Gen TCM reprogramming and action requests?”. The user will then enter the PIN assigned to the USB dongle and select “Unlock USB Dongle”. If the PIN is valid, the user will see a success response as shown in [Figure 4](#), which also includes the number of remaining signs left on the USB dongle (more information on USB dongle is contained in a later section of this SIL). Clicking “OK” to the pop-up in [Figure 4](#) allows the user to proceed with reprogramming the 6th Gen TCM in the same way that 5th Gen TCMs are reprogrammed.



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Figure 3.



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Figure 4.

### Performing Action Requests with Online Connection to PCS:

When performing action requests on a 6th Gen TCM while connected to the internet, the Allison DOC® user must log into PCS. Similar to reprogramming, either TCM Reflash™ account credentials or Allison HUB™ account credentials can be used to log into PCS through Allison DOC®. If the user has both TCM Reflash™ and Allison HUB™ account credentials, the TCM Reflash™ credentials are preferred.



**NOTE:** It is important to remember that when using TCM Reflash™ credentials to log into PCS, the password must be entered in all caps. This is only applicable to logging into PCS. When logging into TCM Reflash™, the password can be entered as normal (mixed case).

Not all action requests require authentication with the TCM. A list of action requests requiring authentication is shown in [Table 1](#). When an action request requiring authentication is selected from the “Action Request” menu while connected to a 6th Gen TCM, the pop-up shown in [Figure 1](#) will be displayed. Since this section of the SIL discusses an online connection, the user will select the radio button “yes” for the question “Will this PC have internet access during 6th Gen TCM reprogramming and action requests?” The user must then enter the appropriate credentials and select “Access PCS”. If the credentials are valid, the user will see a success response as shown in [Figure 2](#). Clicking “OK” to the pop-up in [Figure 2](#) allows the user to proceed with performing the action request on the 6th Gen TCM in the same way that 5th Gen TCMs action requests are performed.

**Table 1. Action Request Authentication**

Action Request	Authentication
Clutch Test Enabled	Required
Solenoid Test	Required
Reset Adaptive Shift Parameters	Not required
Clear All Shift Adaptive Parameters	Not required
Reset Throttle Calibration	n/a
Reset Full Throttle Calibration (TPS only)	Required
Reset Closed Throttle Calibration (TPS only)	Required
Lamp Tests	n/a
Transmission Fault Lamp Test	Required
Reverse Warning Lamp Test	Required
Service Indicator Lamp Test	Required
Neutral Start Lamp Test	Required
Reset Auto-Detect Oil Level Sensor	Not required
Reset Auto-Detect Retarder	Not required
Reset SAE J1939	Required
Reset Accelerometer Learning Information	Required
Accelerometer Learning	Required
Reset Prognostics Information	n/a
Reset Oil Life Monitor	Not required
Reset Filter Life Monitor	Not required
Reset Transmission Health Monitor	Not required
Engineering Calculations	Not required
Output Tests	Required
Upload Current TCM Configuration	Not required

**Performing Action Requests Offline with USB Dongle:**

When performing action requests on a 6th Gen TCM while offline, the Allison DOC® user must have an Allison cybersecurity USB dongle installed on the same computer with the Allison DOC® software. The of list of action requests requiring authentication shown in [Table 1](#) also applies when using the USB dongle offline.

When an action request requiring authentication is selected from the “Action Request” menu while connected to a 6th Gen TCM, the pop-up shown in [Figure 3](#) will be displayed. Since this section of the SIL discusses an offline connection, the user will select the radio button “no” for the question “Will this PC have internet access during 6th Gen TCM reprogramming and action requests?”. The user will then enter the PIN assigned to the USB dongle and select “Unlock USB Dongle”. If the PIN is valid, the user will see a success response as shown in [Figure 4](#), which also includes the number of remaining signs left on the USB dongle (more information on USB dongle is contained in a later section of this SIL). Clicking “OK” to the pop-up in [Figure 4](#) allows the user to proceed with performing the action request on the 6th Gen TCM in the same way that 5th Gen TCMs action requests are performed.

### Allison Cybersecurity USB Dongle: Initial Setup:

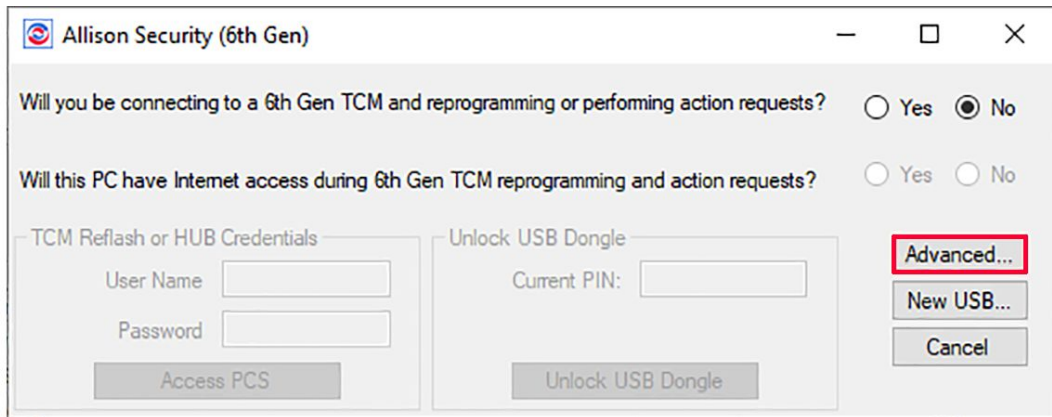
As mentioned earlier, offline authentication with a 6th Gen TCM requires a cybersecurity USB dongle. The USB dongle is unique to Allison Transmission. Allison DOC® users can purchase the cybersecurity USB dongle from Noregon Systems' Allison Web Store (<https://allisonstore.noregon.com/collections/cybersecurity-e-tools>).



**NOTE:** The Allison cybersecurity USB dongle is an Allison Essential Tool.

Cybersecurity USB dongles must be set-up, or provisioned, before they can be used. The provisioning process is described below:

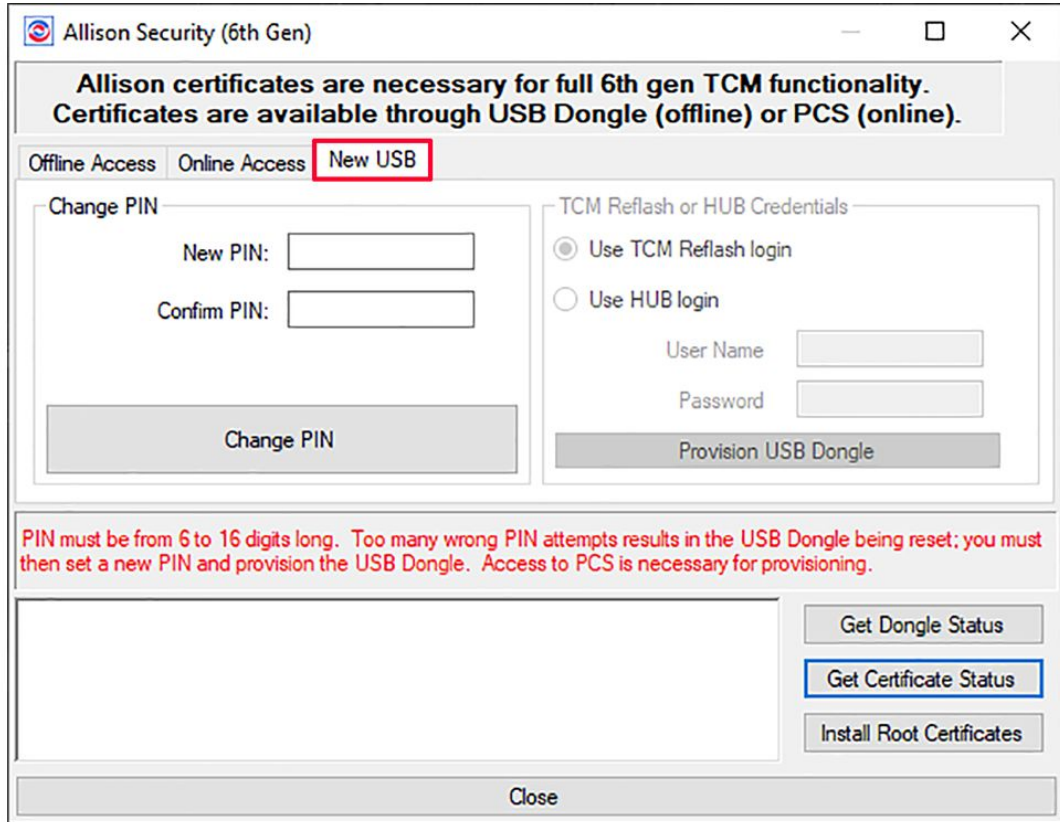
1. Insert USB dongle to PC's USB port and ensure the white LED illuminates. If it does not illuminate, remove and reinsert the USB dongle.
2. Open Allison DOC®.
  - a. From Allison DOC®, go to the "Help" menu and select "Allison Security (6th Gen)", then select the "Advanced" button as shown in [Figure 5](#).



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**Figure 5.**

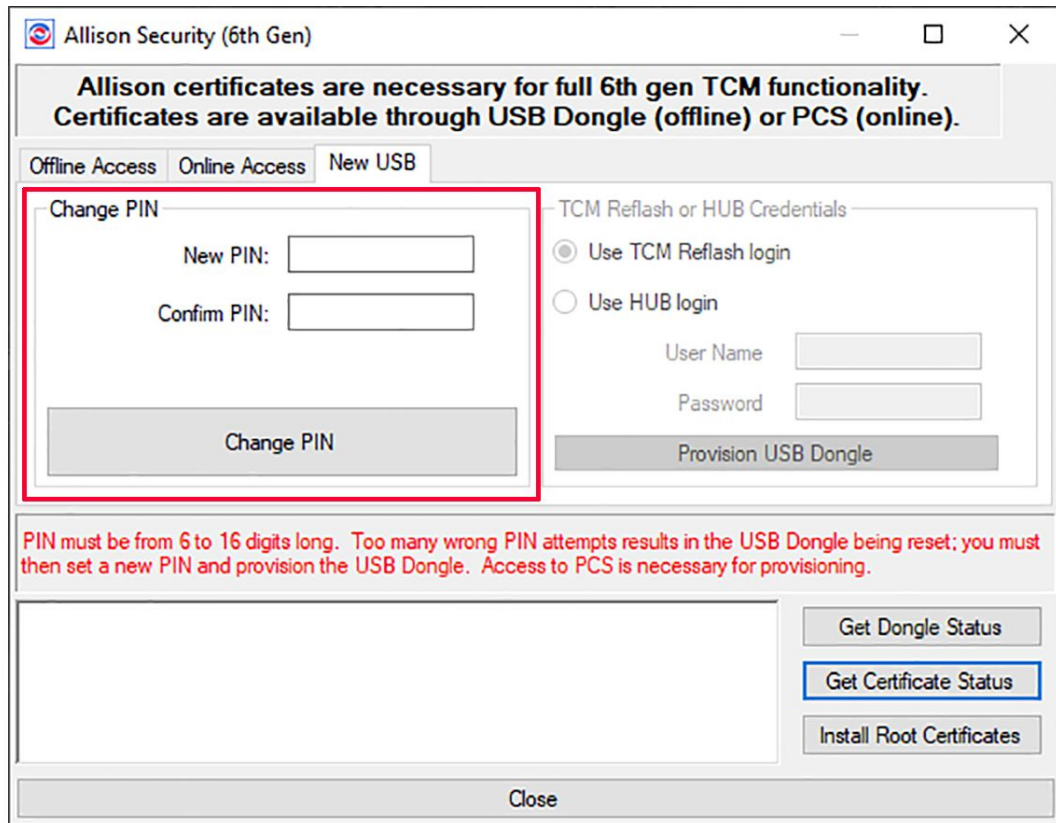
3. After the “advanced” window opens, click the “New USB” tab as shown in [Figure 6](#).



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Figure 6.

4. Enter your PIN in the “New PIN” and “Confirm PIN” boxes. Click the “Change PIN” button as shown in [Figure 7](#).



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Figure 7.



5. After the PIN is set, indicate whether the credentials are for TCM Reflash™ or the Allison HUB™ by selecting the radio button as shown in Figure 8. Enter your credentials.



**NOTE:** If the user has a TCM Reflash™ account and a HUB™ account, the TCM Reflash™ account should be used to provision the USB dongle.

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**Figure 8.**

6. Click “Provision USB Dongle”.
7. A success message “Provision USB Dongle [0]: Success” should appear.

### Allison Cybersecurity USB Dongle: Checking and Recharging USB Dongle Signs:

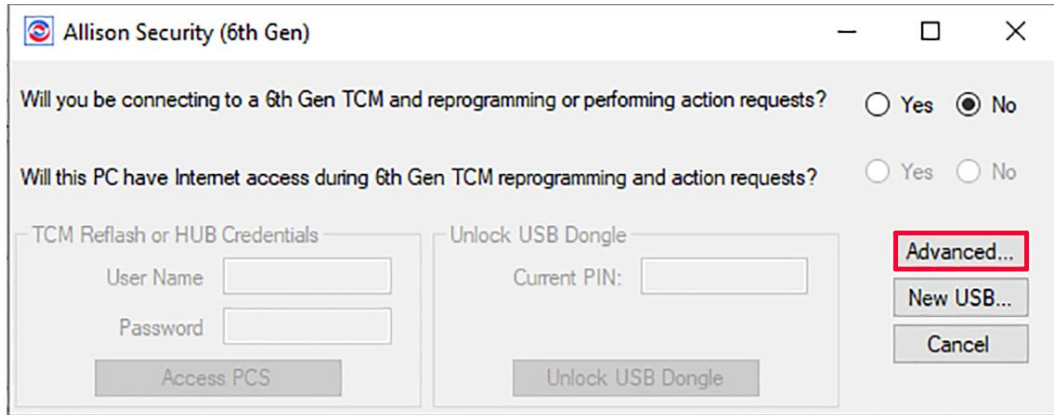
Once a USB dongle has been provisioned, it has a limited number of “signs” that can be used to establish an authenticated session with the TCM in order to perform action requests or reprogramming events when offline. Each time the USB dongle is used to enter an authenticated session, the number of signs remaining on the USB dongle decreases by one. Once an authenticated session is opened, multiple action requests can be performed within the same session without decreasing the number of signs. Only one reprogramming event is allowed per authentication session, but in general, multiple parameters can be modified a single reprogramming event. (Changing active function packages cannot be changed on the same reprogramming event as other individual parameters.)

To check the number of signs remaining on the USB dongle, perform the following process:

1. Insert USB dongle to PC’s USB port and ensure the white LED illuminates. If it does not illuminate, remove and reinsert the USB dongle.



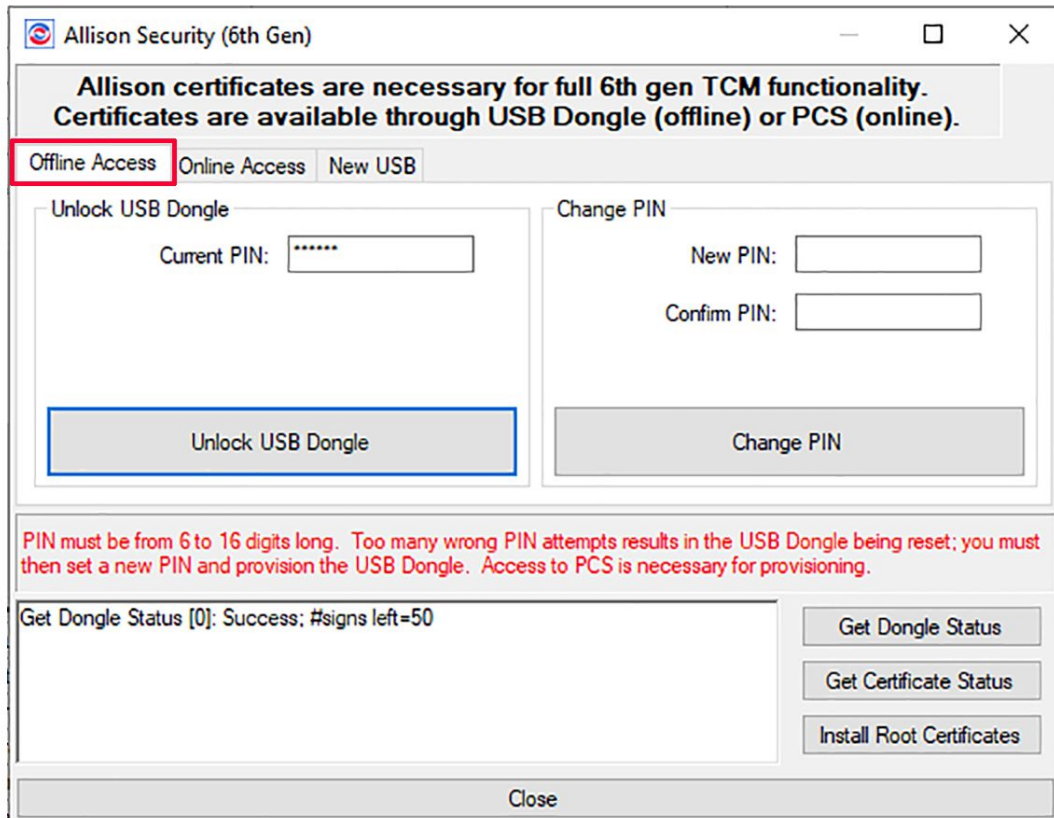
2. Open Allison DOC®.
  - a. From Allison DOC®, go to the “Help” menu and select “Allison Security (6th Gen)”, then select the “Advanced” button as shown in [Figure 9](#).



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Figure 9.

3. After the “advanced” window opens, click the “Offline Access” tab as shown in [Figure 10](#).



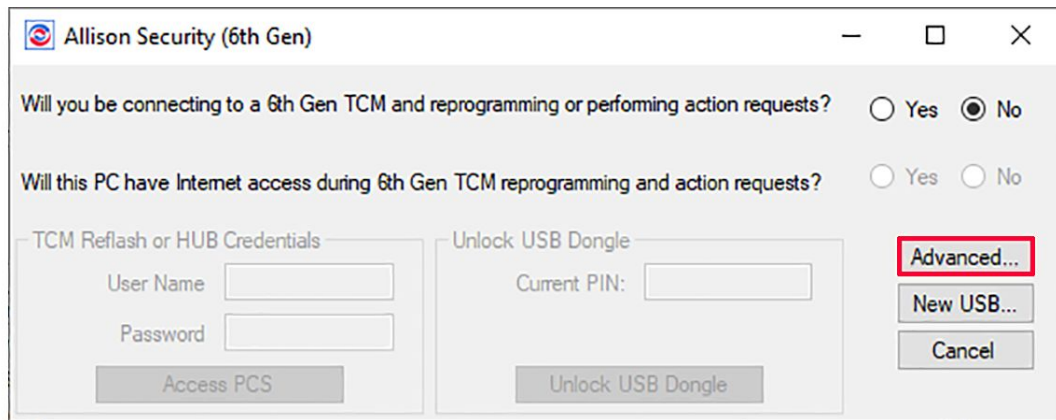
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Figure 10.

4. Enter the USB dongle PIN and select “Unlock USB Dongle”. The response will indicate “Get Dongle Status [0]: Success; #signs left=XX”, in which XX is equal to the number of remaining signs. In the example in [Figure 10](#), 50 signs are left on the USB dongle.

When the number of signs on the USB dongle is zero or near zero, it will be necessary to recharge the signs on the USB dongle. To recharge the USB dongle, perform the following process:

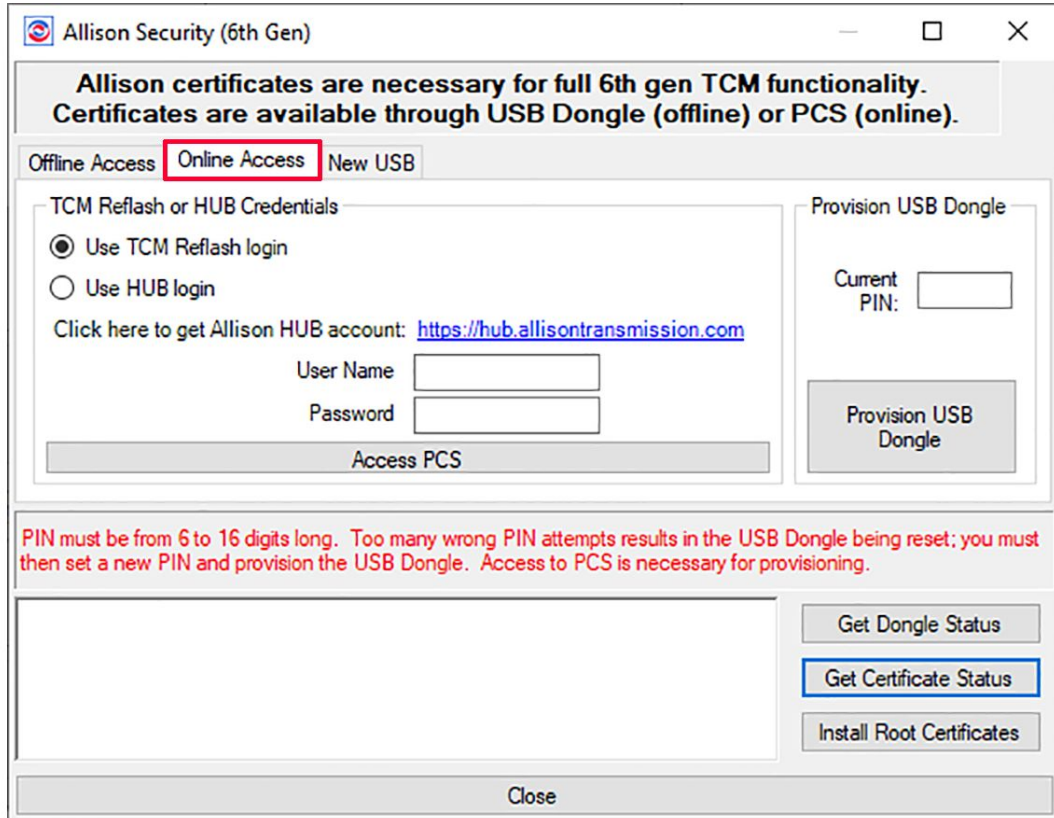
1. Insert USB dongle to PC’s USB port and ensure the white LED illuminates. If it does not illuminate, remove and reinsert the USB dongle.
2. Open Allison DOC®.
  - a. From Allison DOC®, go to the “Help” menu and select “Allison Security (6th Gen)”, then select the “Advanced” button as shown in [Figure 11](#).



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**Figure 11.**

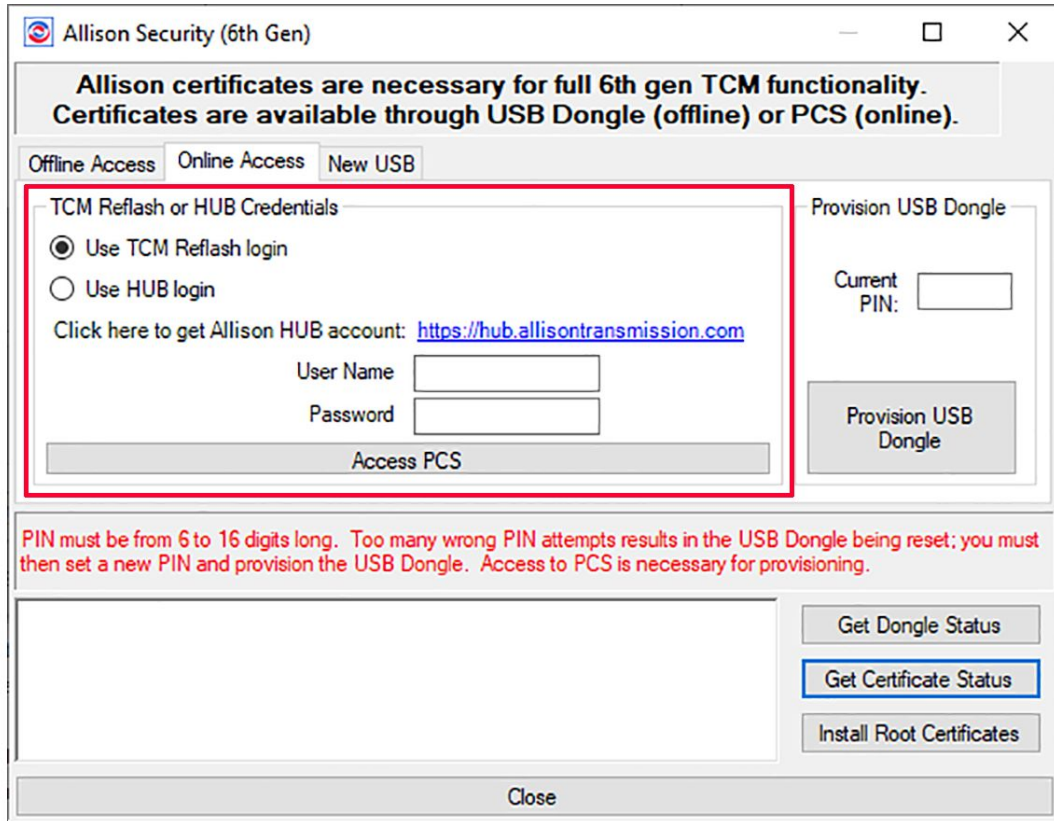
3. After the “advanced” window opens, click the “Online Access” tab as shown in [Figure 12](#).



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Figure 12.

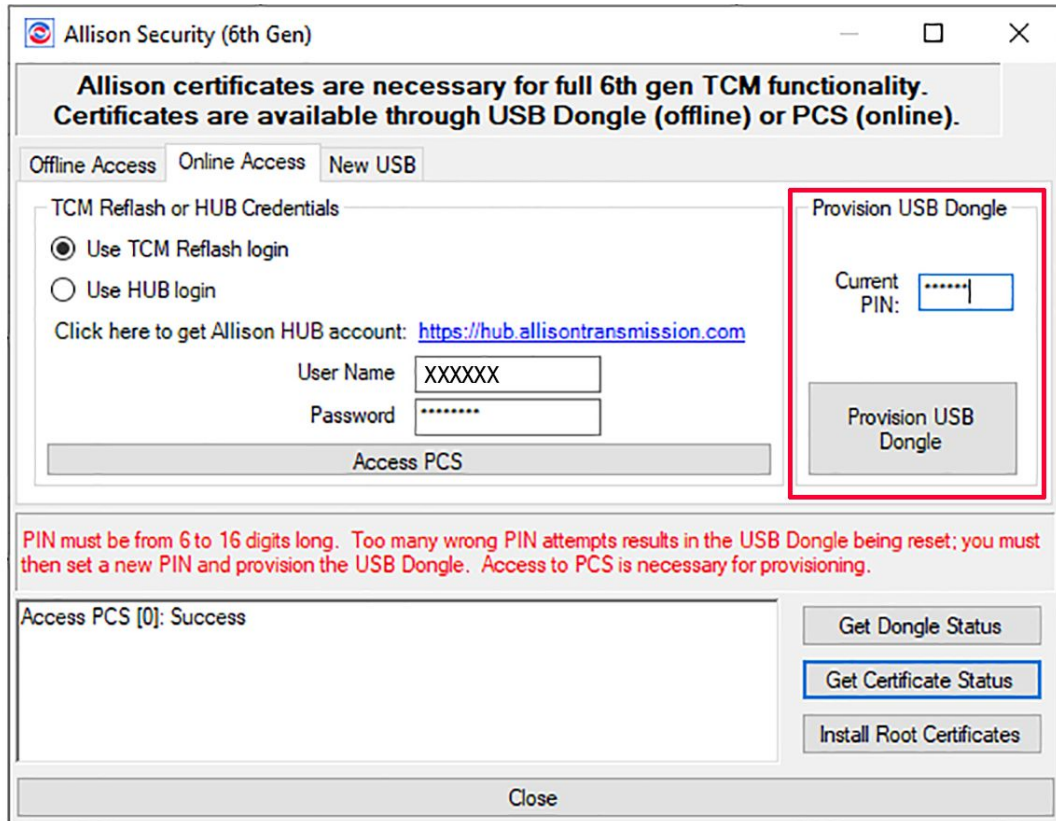
4. Enter your TCM Reflash™ or HUB™ credentials (whichever was used to initially provision the USB dongle) as shown in Figure 13.



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Figure 13.

5. After the PCS is accessed ("Access PCS [0]: Success" will display in the dialogue box), enter the current PIN as shown in Figure 14.

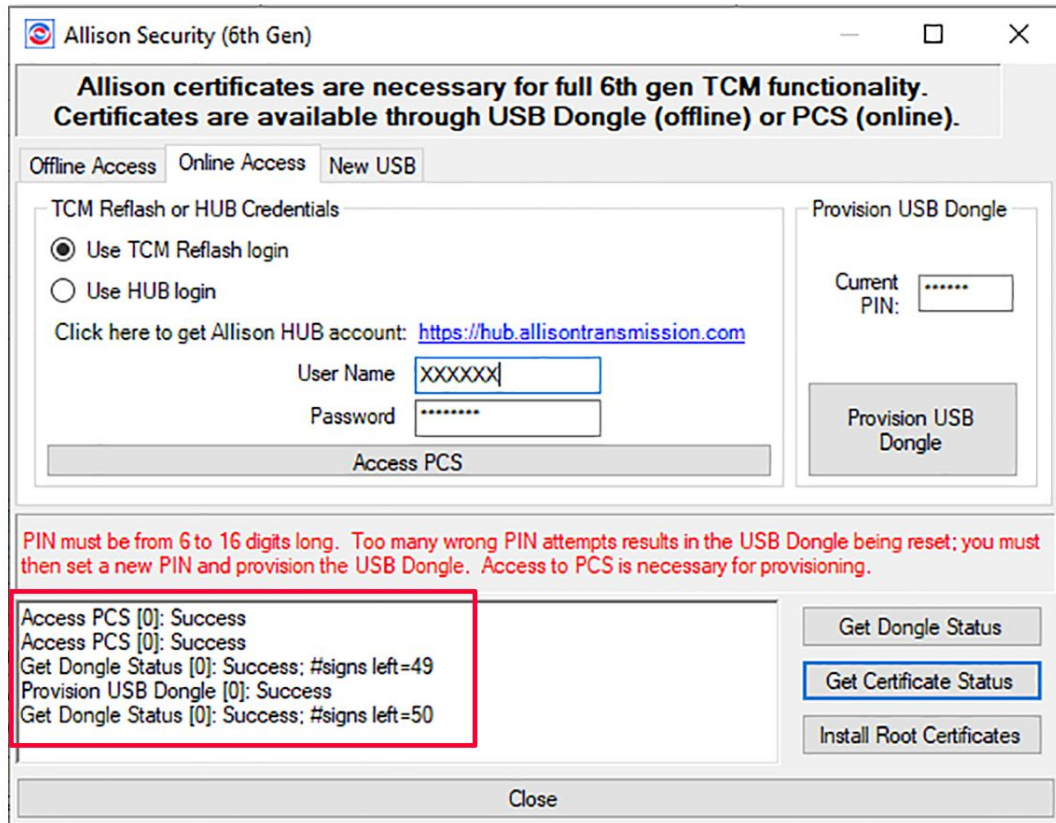


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**Figure 14.**

6. Click "Provision USB Dongle".

7. A success message should appear indicating the number of signs before and after provisioning as shown in Figure 15.



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Figure 15.

**Technical Support:**

For technical support regarding the Allison DOC® V2021.3 or the cybersecurity USB dongle, please contact Noregon Systems by phone or email:

TOLL FREE: U.S. and Canada: 877-659-6913

INTERNATIONAL: 1-336-970-5534

[DOCsupport@noregon.com](mailto:DOCsupport@noregon.com)

For issues with TCM Reflash™ or Allison HUB™ login credentials, please email [hub@allisontransmission.com](mailto:hub@allisontransmission.com).