

Barcode Decoder for mobile platforms powered by Android

User's Guide

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1. Scope

Barcode Decoding SDK is designed for mobile platforms, **powered by Android 8.x and higher** and equipped either with an auto-focus camera, or specialized barcode imager by Honeywell (N56XX, N660X, N670X) or both. These platforms include:

- any Android smartphone, mobile computer and Tablet PC equipped with a rear-view camera,
- Dolphin CT60 (and Dolphin CT50) mobile computers by Honeywell,
- Nautiz X41 mobile computers by Handheld.

Bluetooth Barcode Decoder and BarcodeKey APPs, designed as a data collection tools for the industrial and office applications, where they might be a cost effective, still powerful replacement of traditional barcode scanner.

Barcode Decoder package is notated as **Android_SDK_v.x.x.x.zip** and includes the following applications/folders:

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- **BarcodeKey.apk** – Keyboard Wedge Software utilizing 2DTG’s barcode decoding libraries to decode and forward captured data to data collection applications installed on a mobile Android platform.
- **BarcodeReader2DTG.apk** – provides barcode decode output to:
 - Message box – Demo application to demonstrate libraries decoding performance, or
 - Bluetooth COM port of your PC – data collection tool (like **BarcodeKey.apk**)
- **SerialToKeyboardSrv.exe** – Keyboard Wedge type software for Windows (7-10) PC capable of “reading” COM port and sending data to any active window on your PC.
- **AndroidSDK** (Folder) – sample project and decoding libraries, for building your own application.

The following barcode decoding libraries are compiled in Android 4.x environment and included into the package:

- [Data Matrix, Enterprise Edition](#) (DM_EP)
- [QR Code, Professional Edition](#) (QRC_PRO)
- [1D Barcodes](#) (1D_EP) – with exception of postal codes, but including:
 - Linear symbologies: EAN 13, EAN 8, UPCE, Code 39, Code 93, Code 128, Interleaved 2 of 5 and Codabar
 - GS1 Databar (former RSS14 family), and
 - Pharmacode
- [PDF417](#) (PDF_PRO)
- [Aztec Code](#) (AZC)

Library features are the same as for the full Windows versions. They are described in detail in the corresponding [User’s Guides](#).

Both applications and library are provided as a time-limited (30 days) fully functional trial version. Purchased license unlocks both library and decoders.

License is transferable from one Android platform to another.

2. Deployment and Settings

1. Connect the Android smartphone to a PC as a USB Storage Device.
2. On the PC browse to 'Computer' or 'My Computer' depending on the operating system it runs and select the Removable Disk that is now being displayed. This will be the smartphone Internal Storage root directory.
3. On the smartphone, please, make sure that you have File Manager installed.
4. On the smartphone browse to the Download directory by opening the File Manager utility.
5. Copy installation files - **BarcodeKey.apk** and **BarcodeReader2DTG.apk** - to the Download folder.
6. Select the application installer file **BarcodeReader2DTG.apk** and follow the prompts.
7. Repeat previous step for **BarcodeKey.apk**.

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Important!

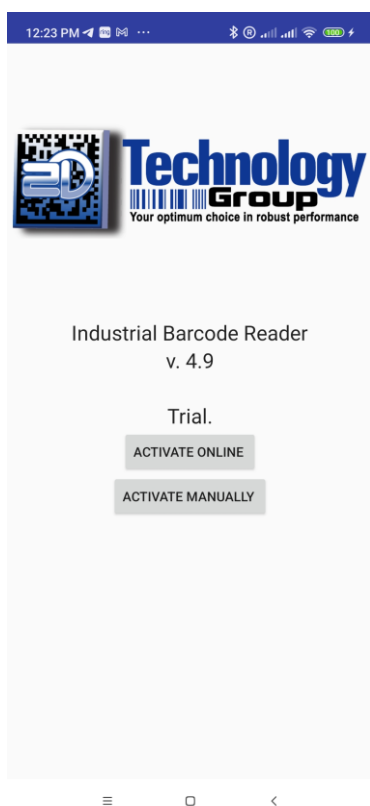
The smartphone should be configured to allow 'unknown sources' to install applications on the device.

- You should be able to see 2DTG icon **BarcodeReader2DTG.apk** and **BarcodeKey.apk** in the application list after installation is completed.

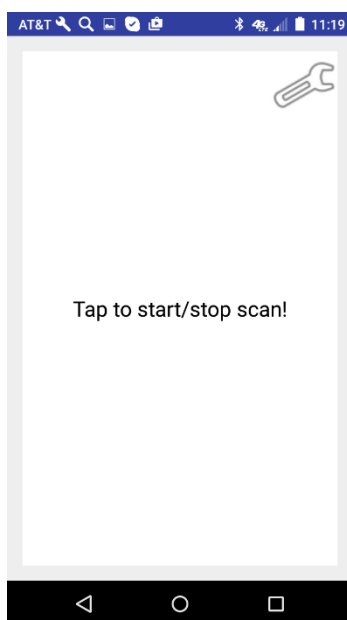


2.1 Barcode Reader Settings

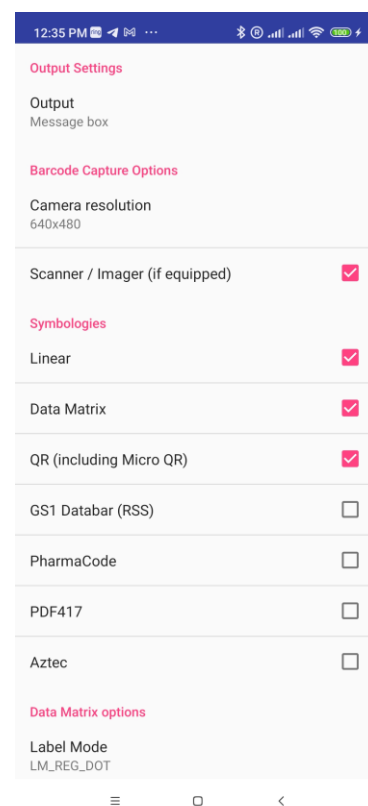
Tap “**BarcodeReader2DTG**” icon on the main Android screen from the list of applications loaded on your device – Evaluation/Activations screen opens (Pic. 1). “Trial” is a default mode for the App - it’s fully functional, but some characters are replaced with “*” in the decode output. This page will automatically switch to Pic. 2 in 5 seconds.



Pic. 1



Pic. 2



Pic. 3

Tap a **Settings** icon on the screen (“wrench-like” up-right icon – Pic.2) – Settings screen opens (Pic. 3), showing available options and default settings.

- Choose Output Setting to select Demo mode (Message box) or Bluetooth data collection options.

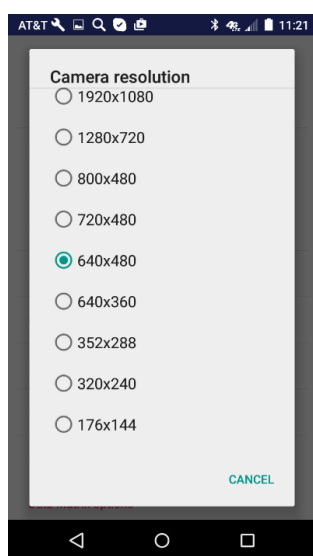
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- Choose **Camera Resolution** best suited for your decoding task (Pic. 4). Different smartphone models may have different set of resolution settings. Default setting is 640x480, because it is usually enough for most decoding tasks and, also, because it's represented in most cameras. However, for DPM (particularly Dot Peen) samples – section 4.3 - better decoding results can be achieved by choosing higher resolution.

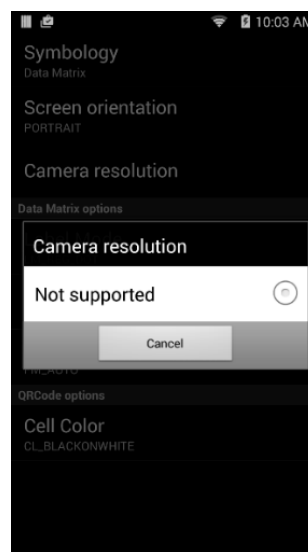
Important!

The size of data array in the program restricted to 1600x1600. Accordingly, higher resolution settings cannot be used even if they are available (for instance, 1920x1080 on Pic.4 cannot be used).

On mobile computers equipped with specialized barcode imager (Dolphins, Nautiz) this option (**Camera Resolution**) may not available (Pic. 5). Imager has only one default resolution in a video mode that cannot be changed.



Pic. 4



Pic. 5

Important!

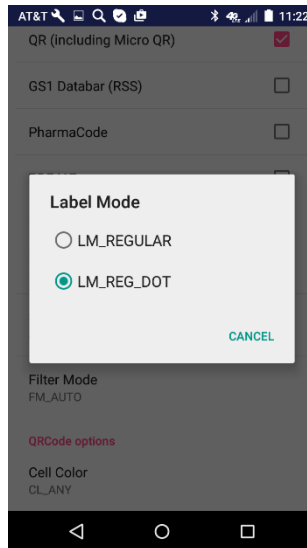
If your smartphone does not have 640x480 resolution option, the Decoder may become non-functional. Always check if it's presented in the list. If it is not – choose the resolution close to it.

- Option “**Scanner / Imager (if equipped)**” allows to select between Imager (if mobile computer is equipped with it) and rear-view camera – Imager/Camera selector. By default, mobile computer will use Imager to capture the picture of symbol (checkbox is “ON”). To switch to Camera – uncheck this box (see Section 3.2.3 on this issue).
- Choose the symbology(s) you want to decode by tapping appropriate option (Pic. 3) - Data Matrix, QR Code, Linear, GS1 Databar, Pharmacode, PDF417, Aztec. It is recommended to check only symbologies you need, because decode time may increase if the program should run all of them.

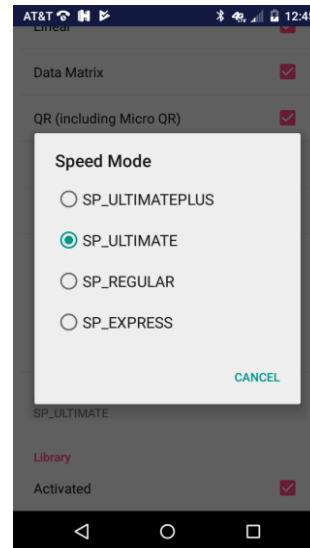
For Data Matrix symbology you can further adjust two more settings (see pictures below):

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- **Label Mode** – Regular, “Reg +Dot (Dot Peen)” (default) – allows to choose between the regular matrix and Dot Peened one.
- **Speed Mode** – “UltimatePlus” “Ultimate” (default), “Regular”, “Express”, “UltimatePlus” means the most robust decoding.



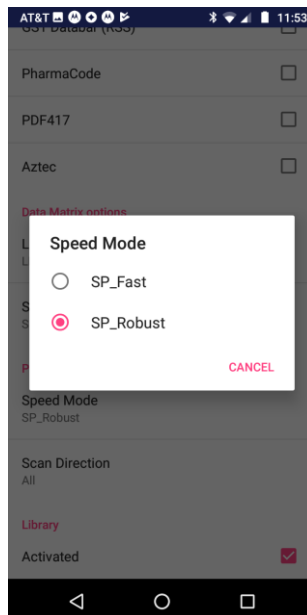
Pic. 6



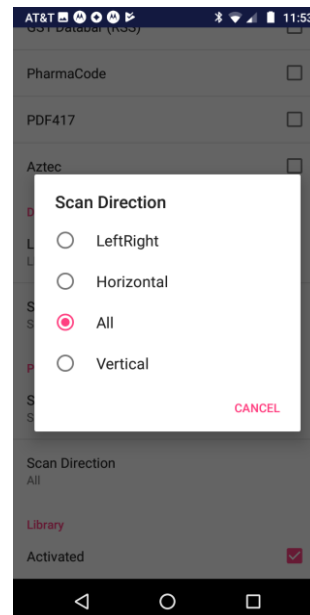
Pic. 7

For PDF417:

- **Speed Mode** – “Fast” or “Robust” (default), more robust decoding though might take a little bit more time.
- **Scan Direction** – default “All” – recommended.



Pic. 6a



Pic. 7a

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No additional settings are available for QR Code, Pharmacode, GS1 Databar and Aztec symbologies.

Default settings are normally good for most samples. However, for some Data Matrix samples – particularly DPM ones (Section 3.4) – you may need to adjust them.

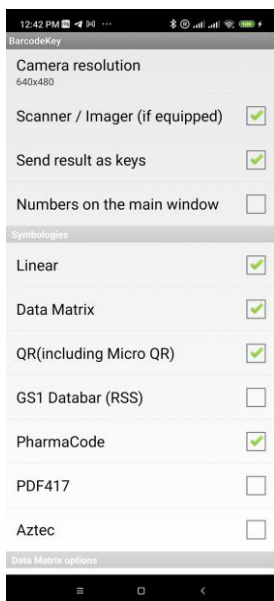
2.2 Keyboard Wedge Decoder Settings

BarcodeKey software reroute the data received from decoding a barcode, making it appear as if it entered the system through the keyboard. In other words, it converts received data into virtual keystrokes, replacing in this sense the virtual keyboard of your Android platform for this operation. It also adds “Enter” key at the end of the data string to prepare system for the next entry.

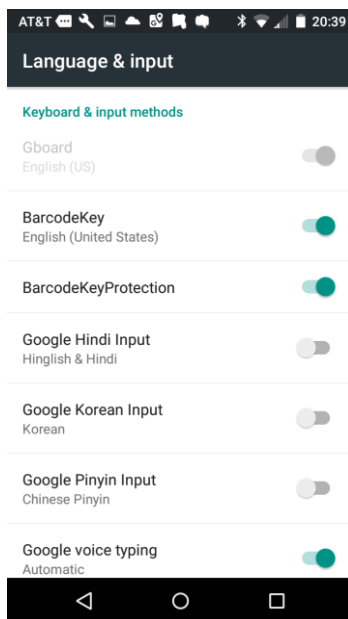
Setting BarcodeKey:

1. Tap the **Apps** icon on the screen and select “**BarcodeKey**” icon from the list of applications loaded on your device – “BarcodeKey” screen opens (Pic. 8):
2. All Decoder settings are the same as for the Barcode Reader and described in Section 2.1.
3. “**Send result as keys**” – provides for two keyboard emulation options depending on data collection application: office-type apps (Word, Excel, etc.) and the others. Default option setting is for office-type apps (box is “checked”).
4. “**Numbers on the main window**” allows to include numbers along with letters (in the top row of the keyboard, instead of switching to different view) - to speed up data entry when auto-entering (decoding) is accompanied by a manual one.

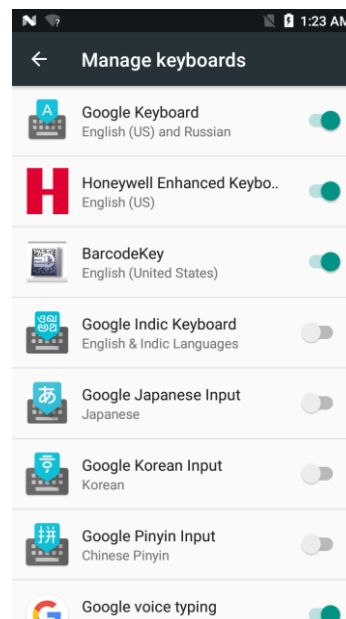
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Pic. 8



Pic. 9



Pic. 10

Enabling “BarcodeKey” Keyboard:

For Android 7.x (CT60) & 8.x:

Browse to **System / Settings / Languages & Input / Keyboard & Inputs / Virtual Keyboard**, tap “**Manage keyboards**” and select “**BarcodeKey English (United States)**” (Pic. 10).

For Android 10 and higher:

Browse to **Settings / Additional settings / Languages & Input / Manage keyboard** and select “**BarcodeKey English (United States)**”.

Switching to “BarcodeKey” keyboard:

For Android 8.x:

Open application for receiving decoded data, tap keyboard icon in the bottom-right corner and choose “English (United States) BarcodeKey”.

For Android 7.x (CT60)

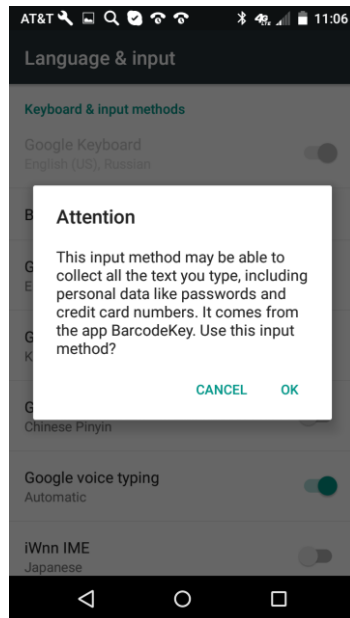
Open application for receiving decoded data, tap keyboard icon in the upper-left corner and choose “English (United States) BarcodeKey”.

For Android 10 and higher:

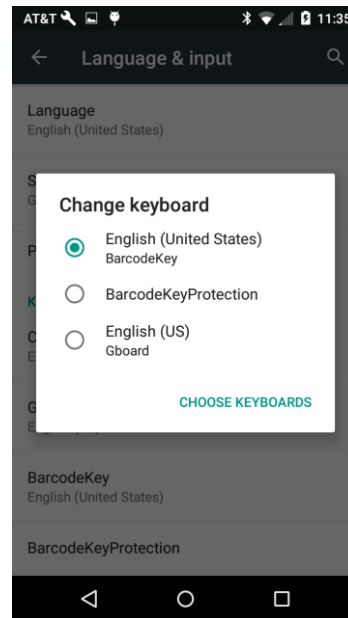
Browse to **Settings / Additional settings / Languages & Input / Input methods: Current keyboard** and select “**BarcodeKey**”.

1. “Attention” message (Pic. 11) pops-up when you set it up for the first time. Ignore it (tap OK) - 2DTG does not collect any information.

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Pic. 11



Pic. 12

Your device is now ready to receive decoded data and send it to the application you want it to be sent.

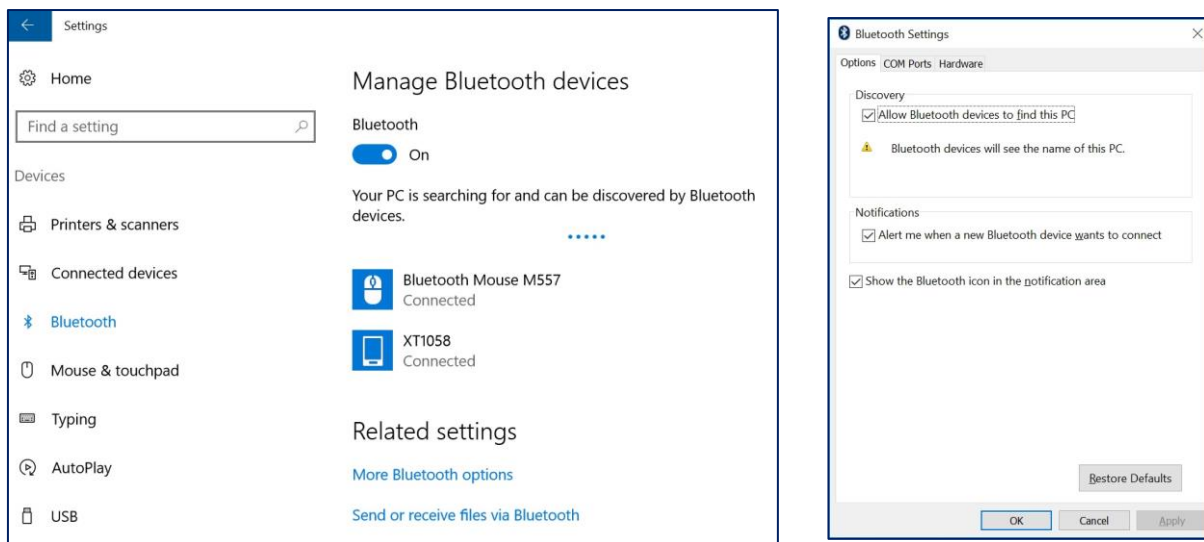
2.3 Connecting Android Bluetooth platform to your PC

- **Enable Bluetooth on your PC:**

Note: If your PC is not equipped with Bluetooth chip, you will need USB Bluetooth adapter.

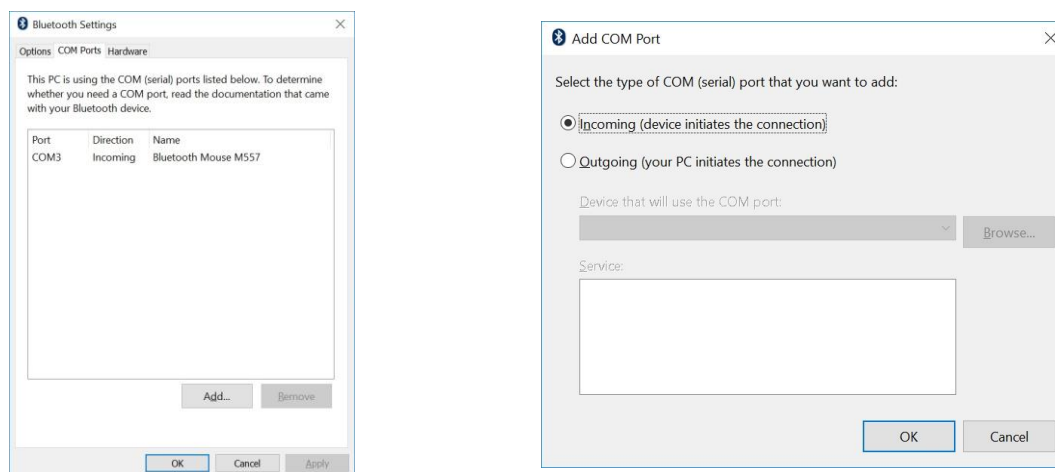
- ✓ Go To: Settings -> Devices -> Bluetooth (Click/Tap “ON”).

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- ✓ Click/Tap “More Bluetooth options” and check “**Allow Bluetooth devices to find this PC**” in “Options” tab.
- ✓ Select “COM Ports” tab and click/tap “Add” to create virtual COM port for communicating with Android device.
- ✓ Choose “Incoming (device initiates the connection)” on the “Add COM Port” window
- ✓ Virtual COM Port number will show up on “COM Ports” window.

Note: Windows will always show the name of the first Bluetooth device in the list here, but this COM port is good for any device that can send data to this port.



- **Enable Bluetooth on your Android device:** Setting -> Bluetooth (Tap “ON”).
- **Connect Android device to your PC**
- ✓ Once you enable Bluetooth on your Android device, it will start to look for nearby Bluetooth devices. Among them, you should also see your computer - tap on this device to pair it with your Android device.

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- ✓ At this point your PC will show a notification telling you that you can “*Add a device*”. Click or tap on it.
- ✓ Now both on your computer and on your Android device, you will see a notification with the same passcode. If they match, you need to acknowledge it by clicking or tapping the necessary confirmation buttons in both Windows 10 and Android.

Note: you must press the Yes button in Windows 10 and the Pair button on Android, as quickly as possible. Otherwise, the pairing will fail, and your PC will give you an error message recommending that you add the Bluetooth device again.

The next time you want to connect them, you won’t have to go through the pairing process again, you can simply connect them. The passcode is only required the first time you pair your Bluetooth devices.

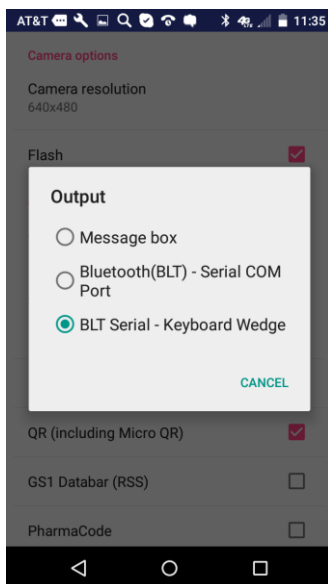
Note: We used a laptop with Windows 10 and a Motorola MotoX smartphone with Android 5.1. Although the screenshots might look a bit different on other Android smartphones, the steps involved are the same.

2.4 Bluetooth Barcode Reader Settings

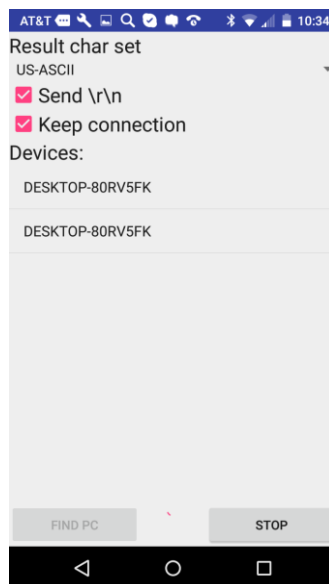
Tap “**BarcodeReader2DTG**” icon from the list of applications loaded on your device and then tap the **Settings** (“wrench-like” up-right icon).

- I. Tap **Output Settings** – three data output options available from here (Pic. 17):
 1. Pop-up **Message box** on your Android device.
 2. **Virtual COM port** on Windows PC - for the customers who have already their own data collection software capable of reading decoded data from COM port.
 3. **Keyboard wedge data transfer** to any “active” application on your Windows PC (through Virtual COM port by means of 2DTG’s provided keyboard wedge software: **SerialToKeyboardSrv.exe**).
- II. Choose **Connection mode** (Pic.18):

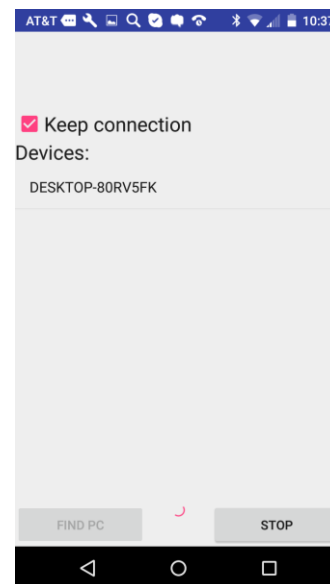
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Pic. 17



Pic. 18 – Option 2



Pic. 18 – Option 3

BLT_BarcodeReader (Android Bluetooth module) can be set to be connected to the PC continuously (default mode), or “under the necessity” of transferring decode data to the PC (uncheck “**Keep connection**” box).

“Continuous” mode allows for faster data transfer but is not very economical on battery charge. It is recommended when you have “sizeable” scanning job.

Second mode is thrifter on battery charge but is slower on data transfer - recommended for occasional scanning.

After choosing “connection mode” tap “**Find PC**” and then tap your PC name when it shows up on the screen to establish connection with Com port.

III. Keyboard Wedge application / Character table (Pic.18):

There are two ways to read data, transferred to the virtual COM port of your PC:

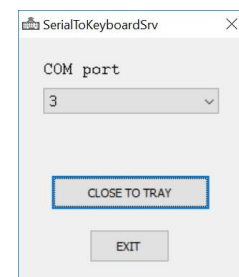
- **Option 2** - for the customers who have already their own data collection software capable of reading decoded data from COM port.
- **Option 3** - 2DTG’s provided keyboard wedge software - **SerialToKeyboardSrv.exe**, that would pass data to any “active” application on your Windows PC.

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In this case, copy **SerialToKeyboardSrv.exe** to the folder of your choosing and click/tap on it. Virtual COM port will be auto detected.

You may close it to a tray before opening data collection application and starting scanning barcodes using your Android device.

Default Character table for this application is UTF-16 (Unicode).



If you choose Option 2, you can also choose Character table – “**Result char set**” that fits your application and “**Send \r\n**” option (Pic. 18) if required. Default setting is “US-ASCII” that corresponds to the Character table of most scanners.

Important!

If you want to use our application “SerialToKeyboardSrv” with Option 2, you must change “Result char set” to UTF-16.

Important!

Only one APP can be “connected” to the Bluetooth virtual port at any given time. Exit our app if you want to use different one to read COM port.

Decoder settings are the same as for **BarcodeReader** (Section 2.1).

3. Reading Technique

Barcode Reader is built for Decoder performance evaluation. It can also be useful when you do not need to parse data into the data collection system but want just to see the decode result. It's recommended to use it to get more familiar with reading technique, your platform (and camera/Imager) performance before performing data collection tasks.

Barcode Reader is also built for decoding library activation.

Reading technics for camera smartphone and mobile computer with specialized Imager are slightly different.

3.1 Camera smartphones

Android smartphones (Tablets, mobile computers) normally come with powerful rear-view auto-focus camera, allowing for multiple resolution options and image magnification.

Unlike regular 2D barcode scanner, which does not normally have auto-focus, tablet's camera may require slightly more time “to get acceptable image for decoding”, because of the certain auto focus response time that differs for different camera models. This time is translated into the number of

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“counts” – iteration cycles needed for capturing accepted image. This number may depend also on scanning distance and angle, barcode quality, illumination, surface condition.

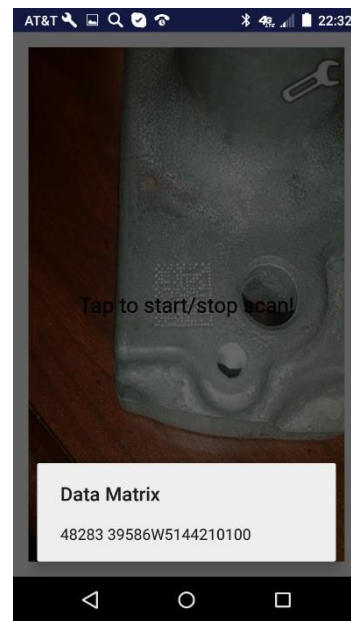
To decode sample:

- Touch/tap screen to activate Reader.
- Touch/tap flash icon to enable camera’s flash-light (lower-right corner). This option is recommended for most decoding. However, for some DPM (Direct Part Marking) reading – mostly laser etched marks on shiny surfaces – this option might better be off to avoid patches of reflected light that can “blind” the camera.
- Position the device over the barcode to ensure it’s in the camera’s Field of View and center the “red aimer crosshair” on the Image Preview screen over barcode (Pic.19). The Decoder will automatically scan and decode symbol presented in the Field of View (Pic.20).
- Touch/tap “magnifying lens (+)” icon if necessary, to enable camera zoom while positioning the device over the barcode (might be required mostly for small symbols, Section 3.2.3).

The decode result is printed to the “pop-up” Message Box:



Pic. 19



Pic. 20

- Tap screen anywhere to make message box disappear.

3.2 Mobile computers with specialized Imagers

Reading technic is basically the same as for a camera smartphone. The difference is in the way how the image captured. Dolphin mobile computers are equipped with high-performance 2D Imager with

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ergonomic scan button (on the side of the terminal) or pistol grip, which is automatically selected by the 2DTG's decoder when detected, as more effective/faster image capturing tool.

Overall barcode reading involves few steps as follows:

- Position the terminal over the barcode.
- Press scan-button or pistol grip trigger (alternatively, you can tap “Scan” button on the screen, as well) – you do not need to hold scan-button while scanning.
- Center the aimer on the Image Preview screen over barcode.
- For DPM marks hold the Device such that its front surface is tilted to the mark surface (to prevent unwanted reflection), and the mark is within the “aiming pattern”. Depending upon the type of the mark the hade may vary within a ~ 15-45-degree range.
- Slightly change reading distance and angle as necessary to read the DPM mark by monitoring the Image Preview.
- Turn image illumination OFF/ON as required by tapping soft illumination button on the screen (lower right corner) – default status is ON.
- When image is decoded the device will stop reading automatically (terminal beeps). Otherwise, you can press scan-button again (or tap anywhere on the screen) to stop process.

Reading Distance for SR (Standard Range) model Imager for most readings would be ~ 4-8 inches. Depending upon the mark and lighting conditions maximum distance might be as great as ~ 15 inches.

3.2.1 Honeywell's Dolphin CT60 / CT50 mobile computer

2DTG offers three major improvements to CT50 / CT60 scanning experience:

- Ability to decode DPM / Dot Peen Data Matrix symbols,
- Ability to decode small Data Matrix symbols (less than 7.5 mils cell size – unreachable performance for the built-in Imager) utilizing device's camera, and
- Ability to use CT60/50 mobile computer as a data collection tool for external computer/server utilizing terminal's Bluetooth module.

2DTG's decoding software seamlessly integrates with Honeywell's “system decoder”. When image captured, they work “in parallel” to decode – whichever decodes it first. DPM / Dot Peen symbols are exception - only 2DTG's software can read them.

This architecture substantially improves customer experience when doing DPM decoding – no need to switch back and force between two decoders if your scan-intensive workflow comprises “mixed” set of images.

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Decoded data can be sent then to the BLT COM port of your PC/Server for further processing.

Considering that 2DTG's decoder transparent to selection of a scan button or pistol grip after it started (no need for special settings), this solution creates very friendly user environment, speeds up business agility and lower total cost of ownership.

3.2.2 Nautiz X41 (Handheld) mobile computers

2DTG offers two improvements to scanning experience for this mobile computer:


- Ability to decode DPM / Dot Peen Data Matrix symbols,
- Ability to decode small Data Matrix symbols (less than 7.5 mils cell size – unreachable performance for the built-in Imager) utilizing device's camera, and
- Ability to use mobile computer as a data collection tool for external computer/server utilizing terminal's Bluetooth module.

Unlike CT50 / CT60, 2DTG's decoding software cannot be integrated with "system decoder". However, 2DTG's software provides decoding capabilities not only for DPM / Dot Peen symbols, but for the most other symbologies, as well (Section 1 of this manual). It means that in most cases there is still no need to switch back and force between two decoders if your workflow comprises "mixed" set of images (in addition to DPM samples) - 2DTG's package can do it all.

Decoded data can be sent then to the BLT COM port of your PC/Server for further processing.

Unlike CT50 / CT60, system Scan Wedge must be disabled before using the scan buttons with 2DTG's software:

Nautiz X41:

Tap  icon in taskbar to open the command bar menu and navigate to "Close" line to disable ScanWedge.

3.2.3 Using mobile computer camera for reading small symbols

To decode small Data Matrix symbols (less than 7.5 mils cell size), switch to Camera by unchecking selection box in "Use Imager as a source" line of Settings (Pic. 3, 8) and follow the recommendations of Section 3.1.

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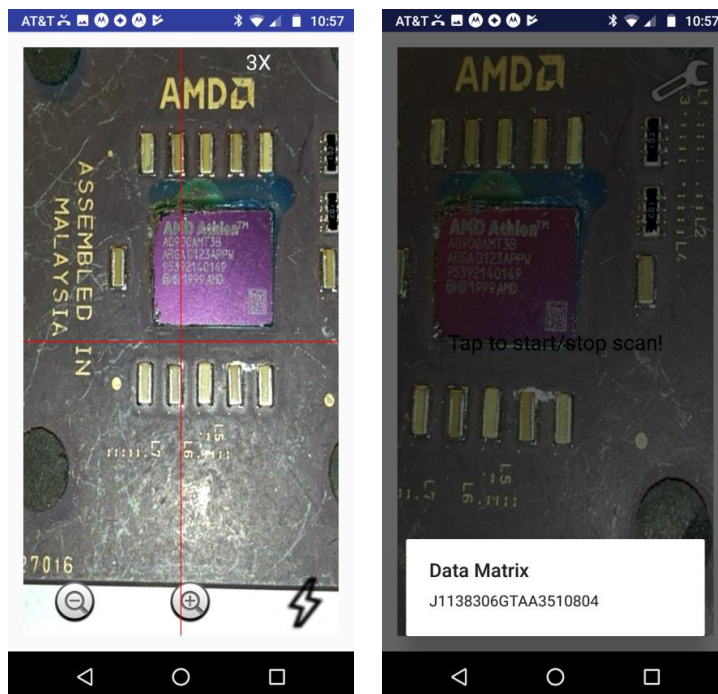
Sample decoding:

AMD Chip:

- Laser etched Data Matrix (19 characters)
- Physical size ~ 2x2 mm (80 mils)
- 18x18 modules
- **module size - 4.4 mil**

Device / Camera:

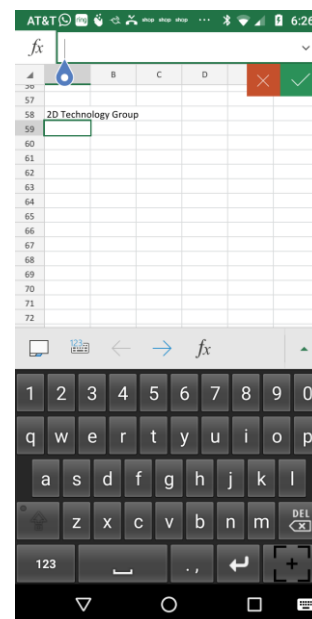
- Moto 6g Play
- 12-megapixel camera (like CT60)
- Camera Resolution – 640x480
- Zoom – 3X



3.3 Keyboard Wedge Reading

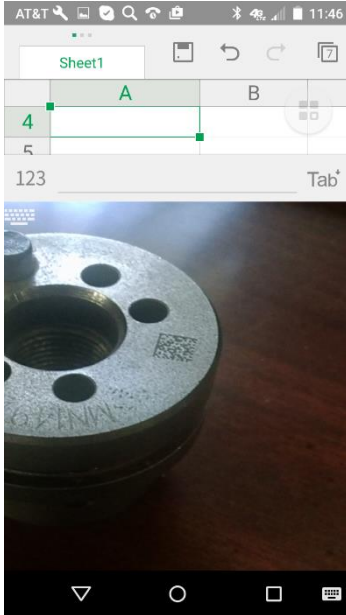
The **BarcodeKey** is built as “Keyboard Wedge software” and would work basically with any Android application on your platform that is compatible with virtual keyboard. It was specifically tested with MS Office Mobile and WPS Office - commonly used data collection systems on Android:

- Open an application (Excel, Word, ...). BarcodeKey keyboard will open “inside the application” automatically.
- To send data to a document in place of the cursor just tap the soft SCAN button on the keyboard (or hard SCAN button/trigger on Dolphin terminal).
- “BarcodeKey” window that features ZOOM button and flash button to adjust the image quality when scanning will replace keyboard.
- “BarcodeKey” allows monitoring the “image quality” ensuring faster and more reliable way to “read” complicated (DPM) barcodes by adjusting camera position (distance, angle) and symbol illumination and magnification.
- “BarcodeKey” would reroute the data received from decoding a barcode, making it appear as if it entered the system through the keyboard



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Note: “Keyboard” icon (bottom-right on the screenshot above and Pic.21-23) allows quick change between the input methods (keyboards). On Dolphin CT60 (Android 7.x) this “Keyboard” icon is in the upper-left corner, instead.



Pic. 21



Pic. 22



Pic. 23

3.4 DPM Reading Technique and Resolution

RESOLUTION

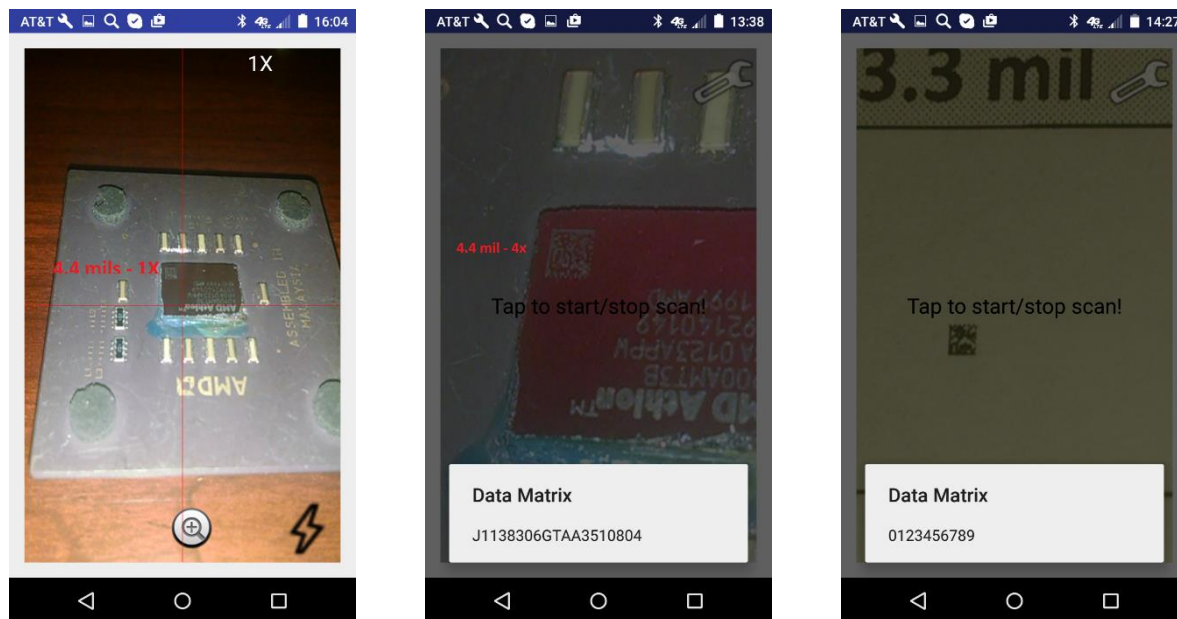
One of the advantages of using camera in comparison with regular scanner is the ability to select camera resolution.

Another advantage is Zoom, which allows to “magnify” a small barcode, effectively increasing camera resolution.

For most decoding needs VGA (or SD) resolution (640x480) is enough – a good compromise between successes decode rate and decode time. However, higher resolution is often required for decoding higher density symbols (~ 5 mil cell size and less) and DPM (Direct Part Marking, including Dot Peen) samples.

Most phone cameras allow to “read” symbols having cell size as small as 7.5 mils. However, using zoom when scanning can increase smartphone ability to read barcodes as small as ~ 3 mils cell size. Pictures below show AMD chip (4.4 mils) scanned by the same smartphone camera (resolution 7.5 mils) captured with “1x” and “4x” zoom and 3.3 mils sample Data Matrix printed on paper (4x zoom).

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It is advisable to check your system resolution to know your limits and to set up optimal camera resolution.

DPM READING TECHNIQUE

- Decoding applications, supplied by 2DTG, allows for Image Preview to assist in selecting the optimal reading distance and angle, which might be crucial for DPM marks. Hold the Device such that its “camera surface” is tilted to the mark surface (to prevent unwanted reflection). Depending upon the type of the mark and illumination the hade may vary within a ~ 15-45-degree range. Slightly change reading distance and angle as necessary to read the DPM mark while monitoring the Image Preview.
- Use Zoom (+/-) buttons and Flash (if required) while previewing the barcode.
- Touch Screen anywhere if you decided to terminate this attempt. When image is decoded the device will stop reading automatically.
- Reading Distance for DPM marks is usually from ~ 1.5 to 10 inches for most samples depending upon the “mil-size” of the symbol. The optimal distance for most readings would be ~ 4-5 inches.
- Change settings (Section 4.1) - “Camera Resolution” and/or “Filter” options (Section 6), if you cannot decode symbol within 1-2 seconds.

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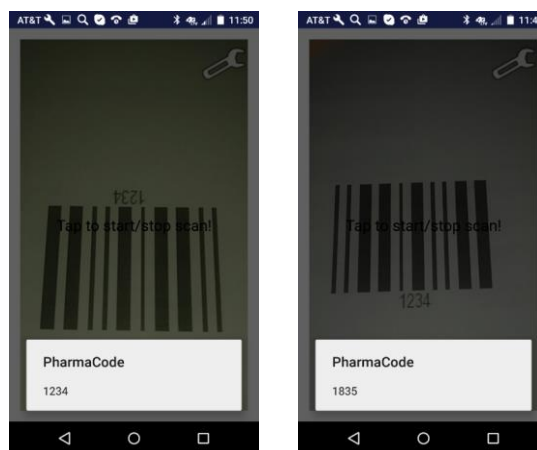
Important!

Try to avoid direct lighting or bright ambient light when scanning DPM (particularly Dot Peen) samples to prevent patches of reflected light within the image.

3.5 Pharmacode Reading

Pharmacode standard requires prior knowledge of the symbol reading direction, which normally can be easily understood from the “context”, where the symbol was printed. So, it is advisable to pay close attention to this thing when scanning the barcode, otherwise false reading may occur (Example below illustrates this issue).

Default setting for 2DTG’s Pharmacode library is “from Left to Right”.



4. Activating / Deactivating 2DTG’s Decoders/Library

2DTG provides stand-alone (single) licenses that are intended for use on one Android platform (smartphone, mobile computer, tablet PC, etc.) – one license per platform. Every stand-alone license comes with its own **License id** and **License password**, which unlocks the software for perpetual use. Those unlocking parameters are good for any number of stand-alone licenses of one software product purchased within the **single Order**. Software activation can be done on-line with a single click over the Internet or manually:

- by logging into the customer’s account on 2DTG’s site (*Customer Center > My Account > Orders > Manually Unlock License*)
- via e-mail
- over the phone.

Stand-alone license is locked to the platform, on which it was activated, but may be transferred to another one if required.

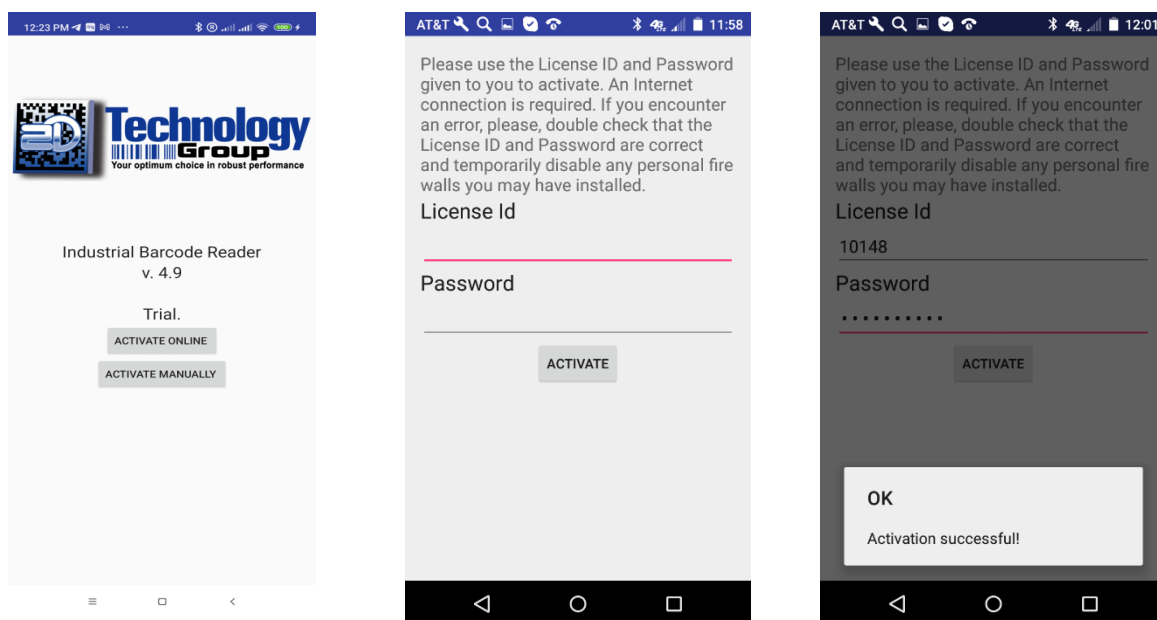
Activation mechanism is incorporated into 2DTGBarcodeReader, which serves as an **Activation/Licensing Server** for decoding library it is using. Therefor:

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1. **BarcodeKey** and/or **any other app** on this platform using this decoding library would be activated/licensed automatically when **2DTGBarcodeReader** is activated/licensed.
2. **2DTGBarcodeReader** shall be kept active in the background for any of these APPs to stay licensed. If 2DTGBarcodeReader is closed, APP using the library would switch to trial mode.

Start the **Barcode Reader**. Activation dialog shows up every time when you start the Product, showing a number of days left in your evaluation period. Once the product is purchased you will be supplied with a **License ID** and a **Password**, which will be sent to you in purchase confirmation e-mail. Keep it handy when you are ready to activate.

Tap “**Activate online**” - new window opens (if your platform has a connection to Internet):



In the new Window enter your **License ID** and **Password** received from 2DTG.

Once you press the **Continue** button the Product will communicate to our server. If the license is validated the Product will activate.

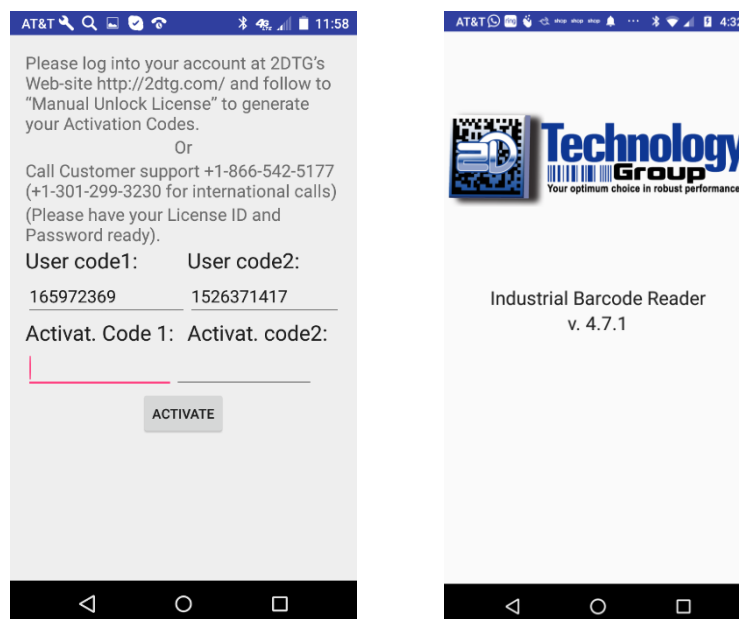
You will receive a confirmation message in the pop-up Text box at the lower part of the screen. Tap anywhere on the screen -> starting page of activated app opens (see below). In 5 seconds “operational page” opens (Pic.2) ... or you can tap starting page and it will open “operational page” right away.

Manual Activation

If you do not have a connection to the Internet, you can activate the Product manually.

Click “**Activate Manually**” ...

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Manual activation assumes two possible options, as follows:

- **Manual Unlock on the 2DTG site.**
Login into **My Account** (*Customer Center>My Account>Order # >Manual Unlock*). On that page you will need the same parameters to Unlock the license: License ID, License Password, User Code 1 and User Code 2.
- **Telephone activation** - requires you to call to obtain the activation codes. You shall give us two “User codes” from the activation dialog above, and we will use these codes to create the activation codes for you.

After you received the **Activation Code 1** and **Activation Code 2** enter them in the activation dialog above and click Continue.

You will receive a confirmation message that your license is activated on the next dialog window – tap anywhere on the screen -> starting page of activated app opens. In 5 seconds “operational page” opens (Pic.2) ... or you can tap starting page and it will open “operational page” right away.

Online De-Activation

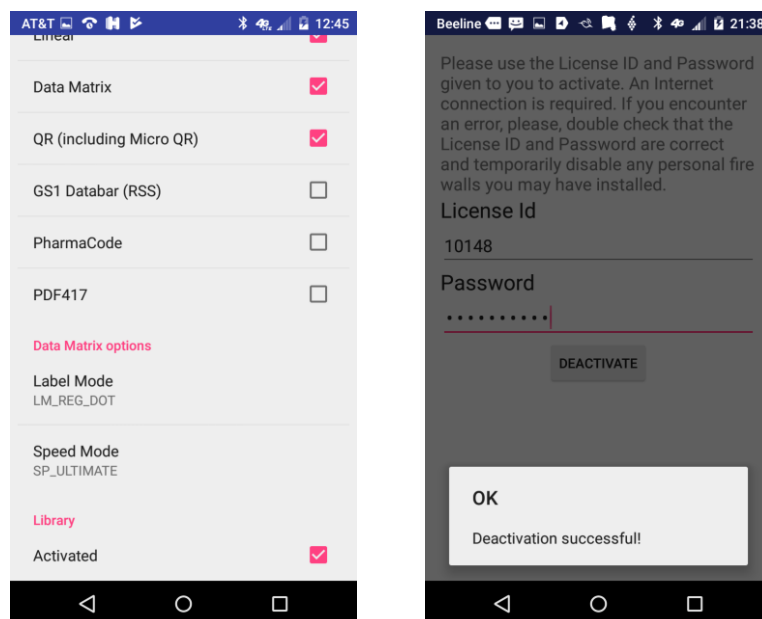
Start the **Barcode Reader**.

Open the **Settings** menu and scroll to the bottom of the list (left Pic. below).

Uncheck “Activated” box.

Enter License Id and Password that you received when you purchased the license on the new screen.

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Once you tap the “Deactivate” button the Product will communicate to our server. If the license is validated the Product will be deactivated and your license is released. You will receive confirmation message box on your device.

You can activate the released license on the other Android platform now.