Zebra Developers

Build Your Edge

DataWedge 11.2
OCR and Image Capture

Zebra Developers
Build Your Edge

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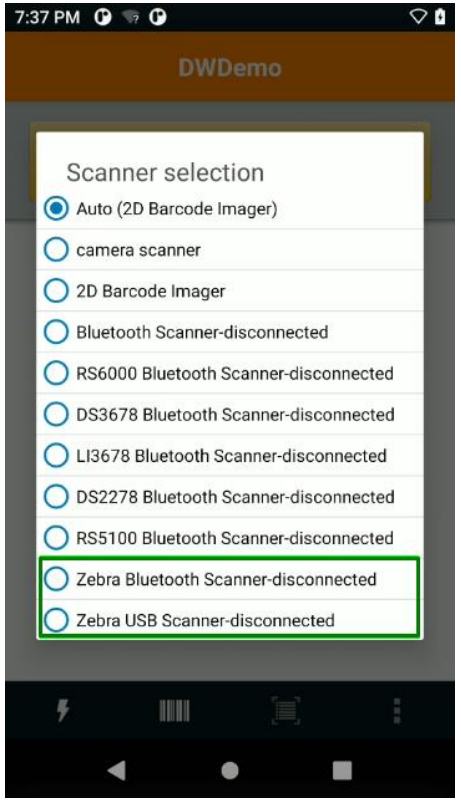
DataWedge 11.2 - OCR and Image Capture

Other DataWedge 11.2 features



DataWedge 11.2 introduced more than just OCR and Image capture:

- Preloaded NG Simulscan templates
- Scan a QR code to launch the embedded URL in a browser automatically
- Friendly Zebra Scanner Interface
- Enhancements to Multibarcode

For more on these features, see:

https://techdocs.zebra.com/datawedge/11-2/guide/about/#newindatawedge112

DataWedge 11.2 - OCR and Image Capture

What is it?

DataWedge 11.2 introduces the Workflow profile which opens up a number of use cases:

- OCR for a number of specified use cases
  - Reading a license plate
  - Reading a Vehicle ID Number (VIN)
  - Reading a tyre ID number (TIN)
  - Reading a meter, e.g. gas or electric
  - Reading an ID document
- Free-form image capture with the **imager** or camera
- The ability to highlight barcodes of interest

NOT to be confused with:

- The existing OCR capability of the barcode input plugin

DataWedge 11.2 - OCR and Image Capture

Prerequisites

To use any of the features featured in this presentation, you will need:

- A Zebra Android device running DataWedge 11.2 or higher
  - Recent LG releases of A10 and A11 include DataWedge 11.2
- A License (for OCR features)
  - Tyre identification number
  - License plates
  - Identification cards
  - Vehicle identification number
  - Meter reading

DataWedge 11.2 - OCR and Image Capture

Barcode Highlighting

Uses:

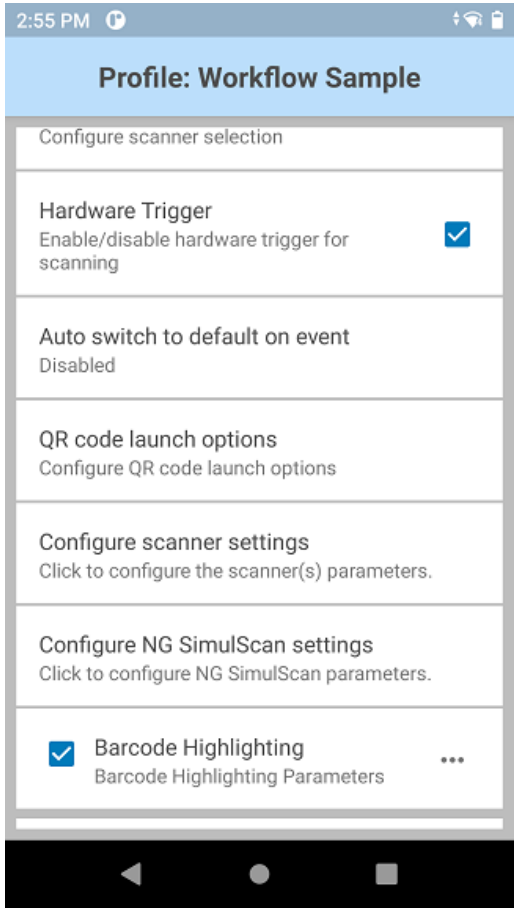
- Provide onscreen feedback to let the operator know which barcodes are being captured
- Help the operator find an item by highlighting the barcode

DataWedge 11.2 - OCR and Image Capture

Barcode Highlighting

Configuration:

1. Enable Barcode Highlighting in the Barcode input plugin
2. Specify the **highlighting** rules:
   - Create a different rule for each barcode type or colour you want to show
   - You can have multiple rules with different colours
3. Specify the **conditions** for the rule:
   - The max / min length of the barcode, any string it might contain, the barcode symbology.
4. Specify the **reporting** rules and conditions.
   - If you do not specify the reporting rule, your barcode(s) will not be sent to your app.
5. Specify the reporting action to have these barcodes returned to the application.



DataWedge 11.2 - OCR and Image Capture

Barcode Highlighting

How to Use:

1. The hardware or software trigger will initiate the scanning session
2. When a barcode meeting the specified criteria is seen in the viewfinder, it will be highlighted.
3. The next trigger will end the session and return decoded barcodes back to the app, if configured to do so.

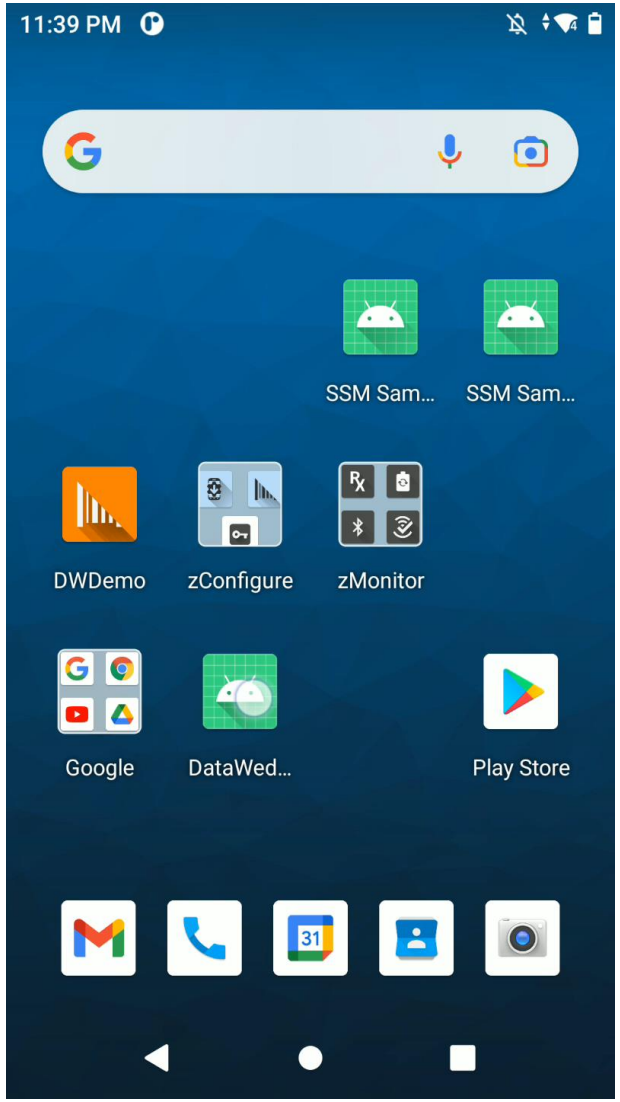
DataWedge 11.2 - OCR and Image Capture

Barcode Highlighting

Demo with the Imager

The video demo shows highlighting barcodes as follows:

- PDF417 is orange
- Code128 with 12 characters or fewer is blue
- Any other barcode is green
- All orange and blue barcodes are reported



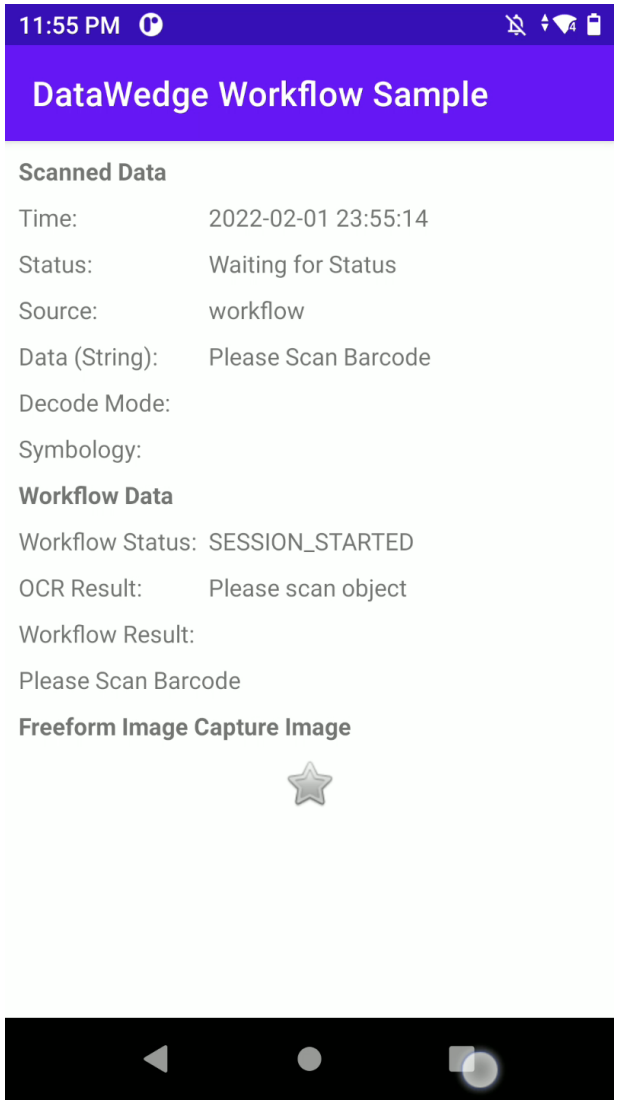
DataWedge 11.2 - OCR and Image Capture

Barcode Highlighting

Demo with the Camera (including configuration)

The video demo shows highlighting barcodes as follows:

- EAN 13 barcodes will be orange
- EAN 13 barcodes will be reported



DataWedge 11.2 - OCR and Image Capture

Workflow: Freeform Image Capture

Uses

- Capture an image through the device imager (scanner), without a camera.
- Capture proof of delivery and the tracking barcode in a single step

DataWedge 11.2 - OCR and Image Capture

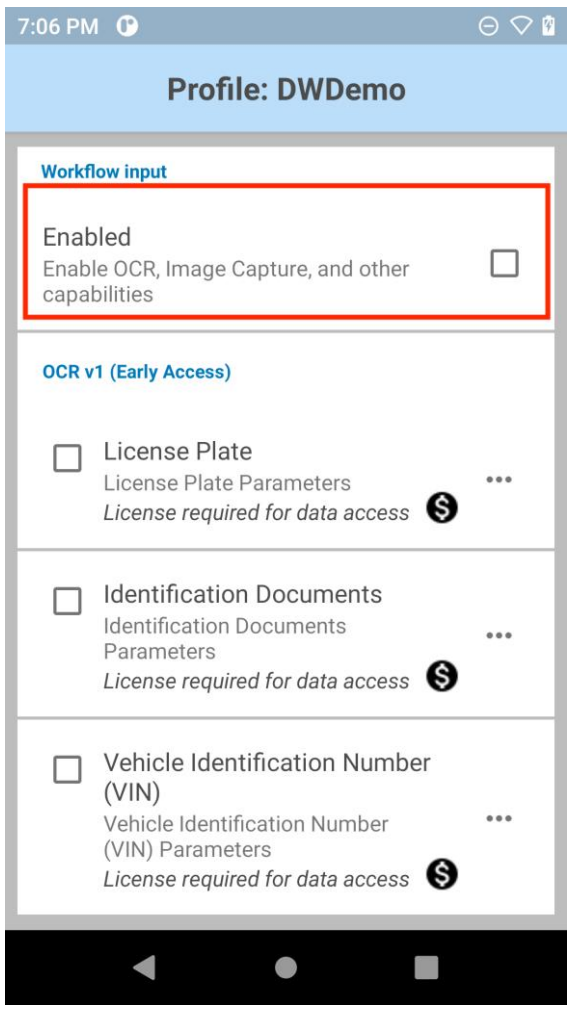
Workflow: Freeform Image Capture

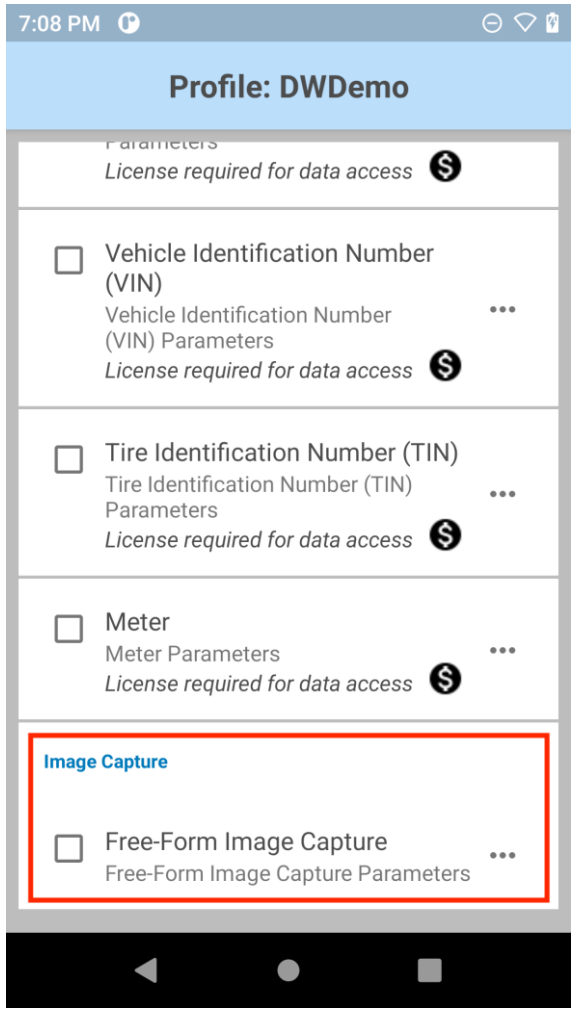
Configuration

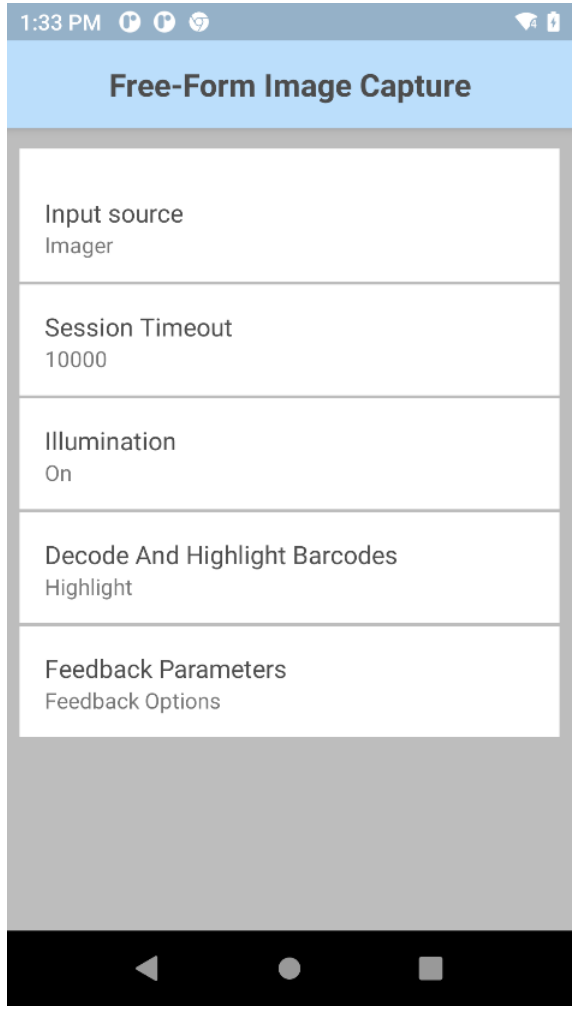
1. Enable the Workflow input plugin. If doing this through the DataWedge UI, you will be prompted that you cannot have both the Barcode and Workflow input plugins active.
2. Scroll down to the 'Image Capture' section of the plugin and enable it.
3. Press the ellipsis to bring up additional parameters
4. Choose the input source, either camera or imager
5. Set the session timeout, in ms. This is the length of time the scanning session will be held open until cancelled, if the trigger was not pulled.
6. Select 'Decode And Highlight Barcodes' to return data. Although set to 'Highlight' only by default, most use cases will also want to return data.
7. Set the additional feedback parameters, such as haptic feedback, LED notification and decode audio feedback. This is the feedback that will be given whenever a new barcode is seen in the viewfinder, so as you pan across multiple barcodes your device will inform you whenever it sees a barcode.

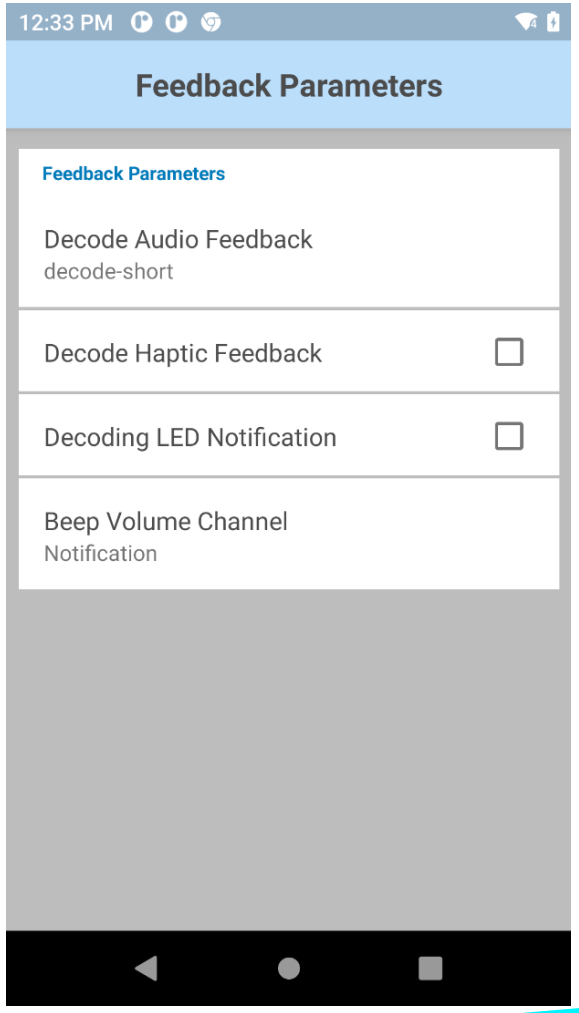
DataWedge 11.2 - OCR and Image Capture

Workflow: Freeform Image Capture









DataWedge 11.2 - OCR and Image Capture

Workflow: Freeform Image Capture

How to Use:

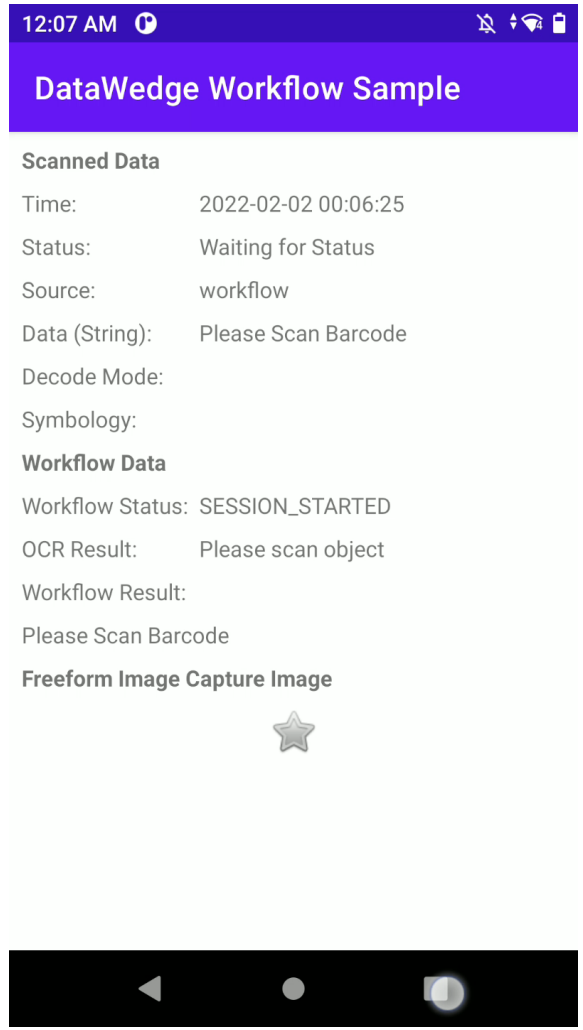
1. The hardware or software trigger will initiate the data acquisition session
2. As the system sees barcodes, it will highlight them to let the user know it has been seen. Note: it is NOT possible to change the highlight colour with freeform image capture.
3. The next trigger press will capture the image, so the user can step back if need be, to ensure the entire object is within view.
4. If the 'Decode / Highlight' option is turned on, it will return the image and the barcodes that had been highlighted.

DataWedge 11.2 - OCR and Image Capture

Workflow: Freeform Image Capture

DEMO

- This demo shows using Freeform image capture to capture a number of barcodes on a single box and return an image of that box using the imager.
- Compare this with the barcode highlighting demo, which did not return an image and only returned a subset of barcodes.

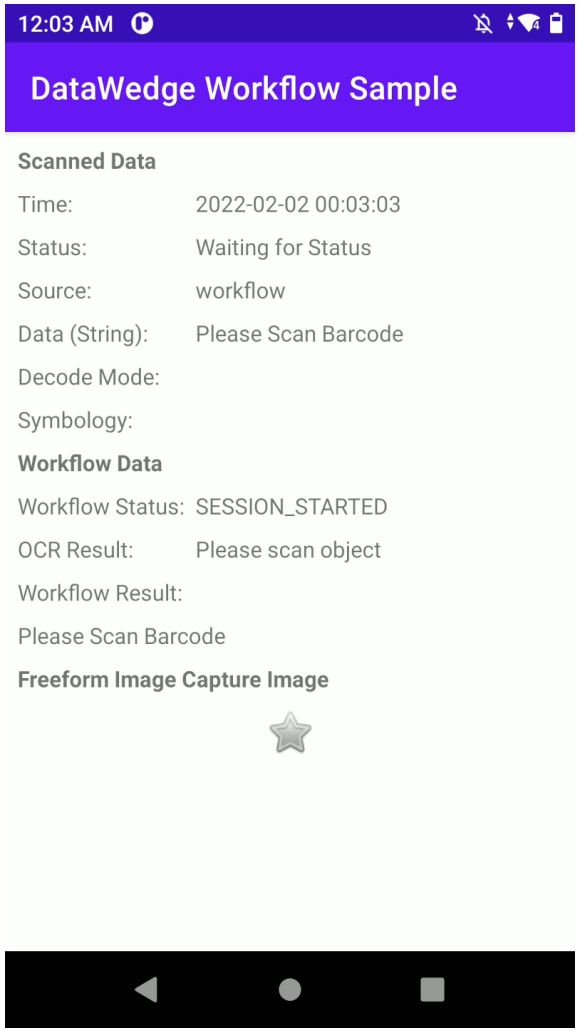


DataWedge 11.2 - OCR and Image Capture

Workflow: Freeform Image Capture

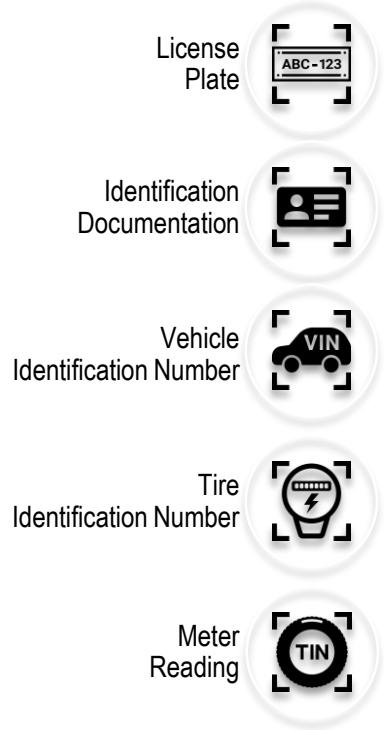
DEMO

- This demo shows using Freeform image capture to capture many barcodes by panning across a shelf.
- Note how the barcode does not have to be included in the final image to be included in the decode results.



DataWedge 11.2 - OCR and Image Capture

Workflow: OCR



DataWedge 11.2 OCR is Early Access ONLY – Not intended for production

Currently supports a limited number of devices including: MC3300x, TC52/HC, TC52x/HC, TC57,TC57x, TC52ax, TC72, TC77, MC3300x, ET56-Android

Future releases will support all SD660 devices

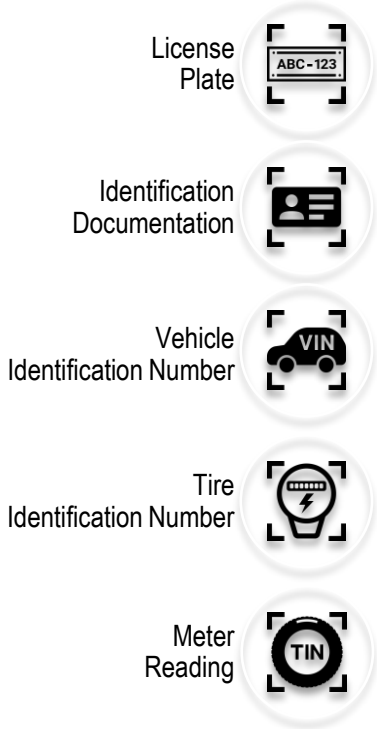
Uses:

- Use-case based OCR of real world objects:
  - License plates
  - Identification documents
  - VIN
  - TIN
  - Meters

DataWedge 11.2 - OCR and Image Capture

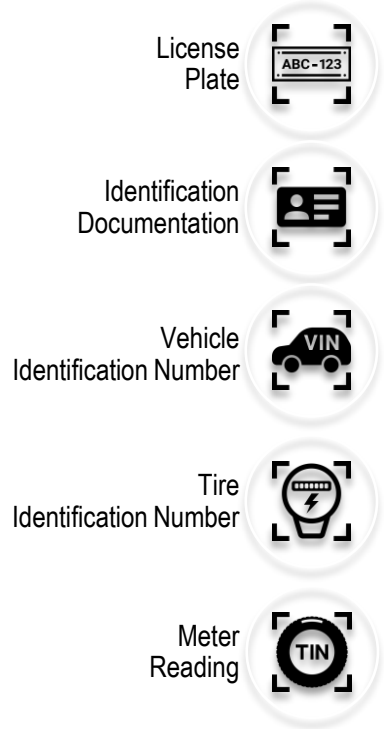
Workflow: OCR: Licensing

- OCR is a licensed feature
- See your sales representative for pricing
- Sold as term-based licenses
- Each OCR feature licensed individually
- **Use DWDemo to experiment with the feature for free**
- To apply a license, see: https://techdocs.zebra.com/licensing/process/
  - On device
  - Mass deployment



DataWedge 11.2 - OCR and Image Capture

Workflow: OCR



Configuration (Overview):

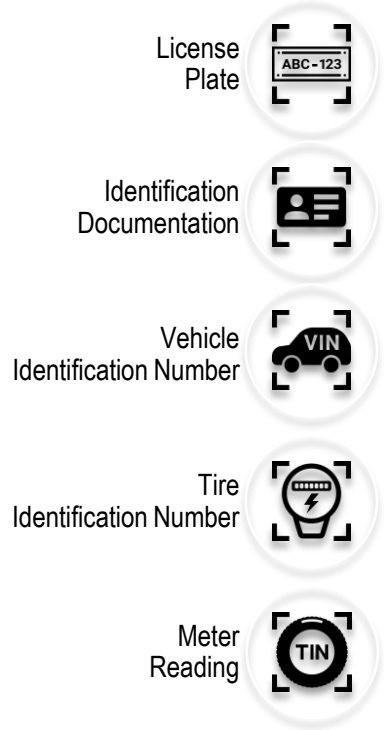
1. Enable the Workflow input plugin. If doing this through the DataWedge UI, you will be prompted that you cannot have both the Barcode and Workflow input plugins active.
2. Scroll down to the desired OCR section of the plugin and enable it.
3. Press the ellipsis to bring up additional parameters
   - Parameters will differ depending on the OCR section you have selected

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR

How to Use:

1. Use the hardware or software trigger will initiate the data acquisition session
2. As the system performs OCR, it will highlight the area it is recognising
3. Once recognised, the data will be returned to the calling app. Do **NOT** press the trigger to capture the data.



DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: License Plates

Regional support:

- Most US states (early access)
- All US states (Rev A)
- Many EMEA / EU countries
- For a full list, see https://techdocs.zebra.com/datawedge/11-2/guide/input/workflow/#licenseplatessupported

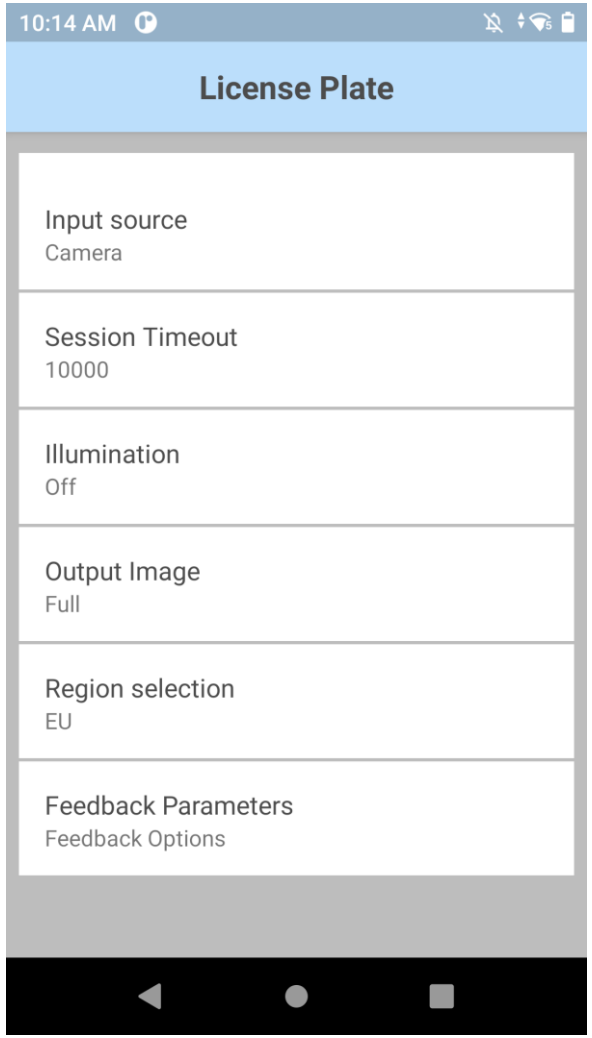
Returned data:

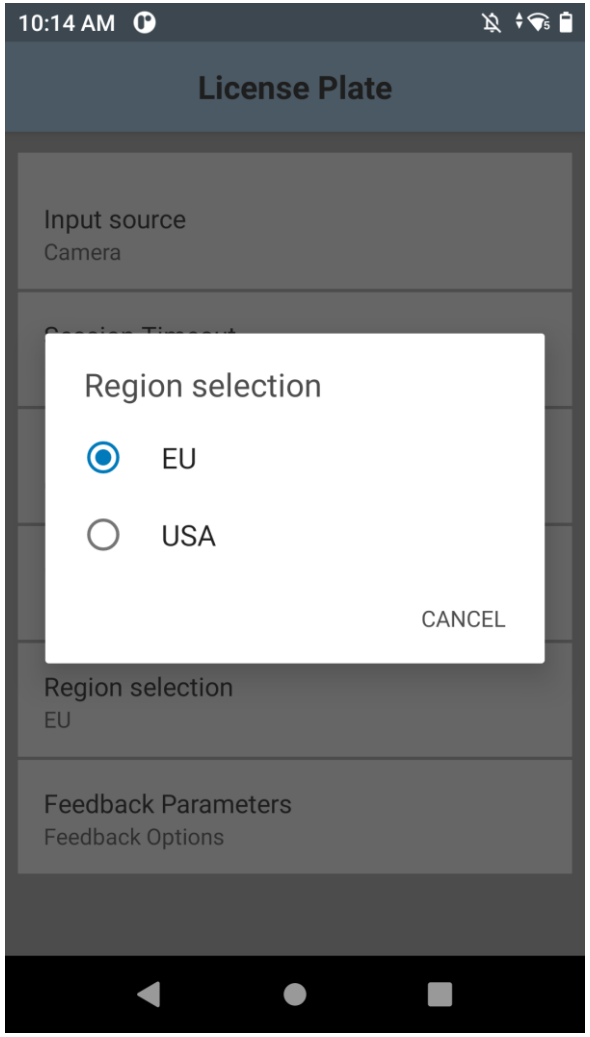
- Single string, the recognised plate

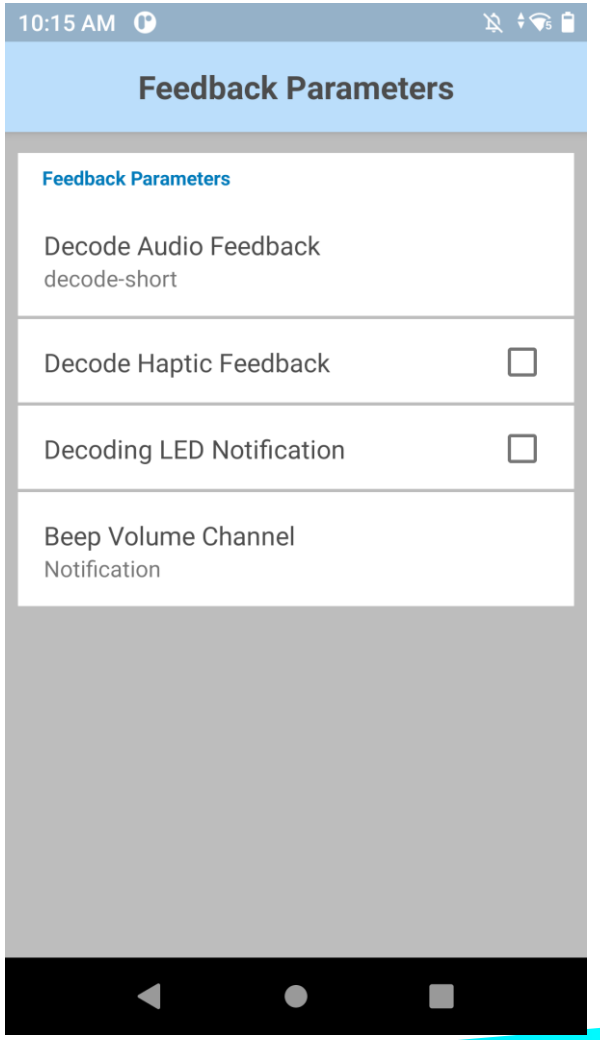
DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: License Plates

Configuration:







DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: License Plates

Configuration:

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Vehicle Identification Numbers (VIN)

Automatic recognition of ISO-compliant ISO3779 VINs from automobile windshields or paper documents with the following characteristics:

- Consists of 17 characters (digits and capital letters)
- Horizontal or vertical format

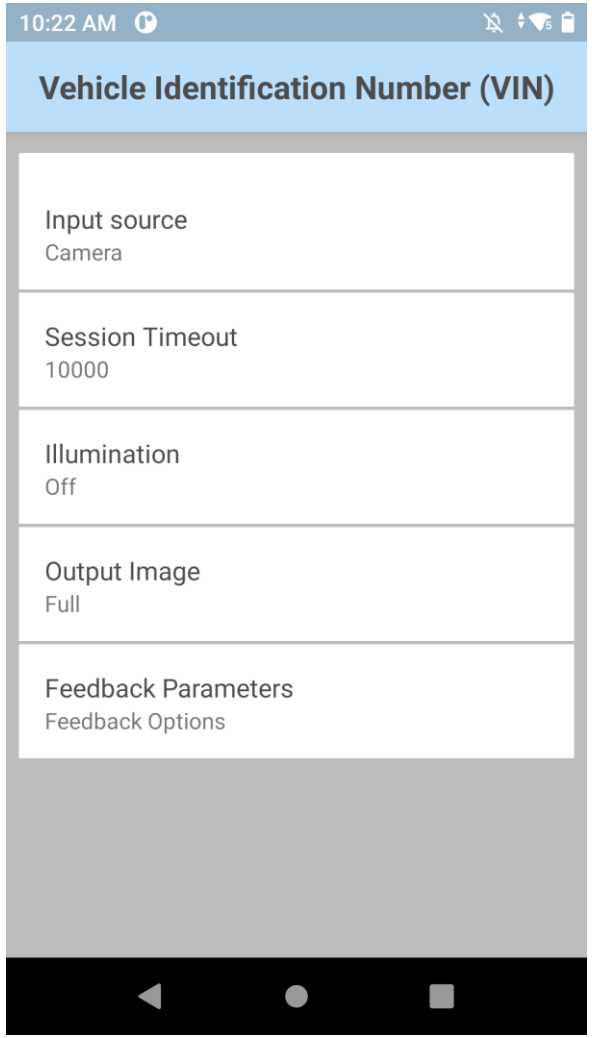
Returned data:

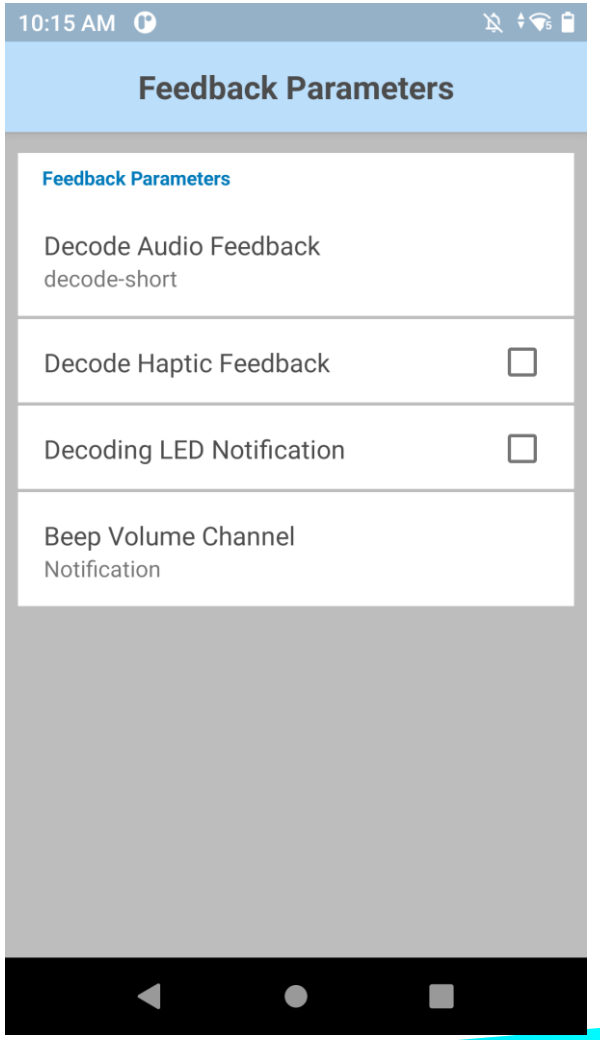
- Single string, the recognised VIN

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Vehicle Identification Numbers (VIN)

Configuration:





DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Vehicle Identification Numbers (VIN)

Demo:

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Tyre Identification Number (TIN)

Regional support:

- US DOT (**Early Access**):
  - US DOT 1
  - US DOT 2
- Universal (**Full Release**)

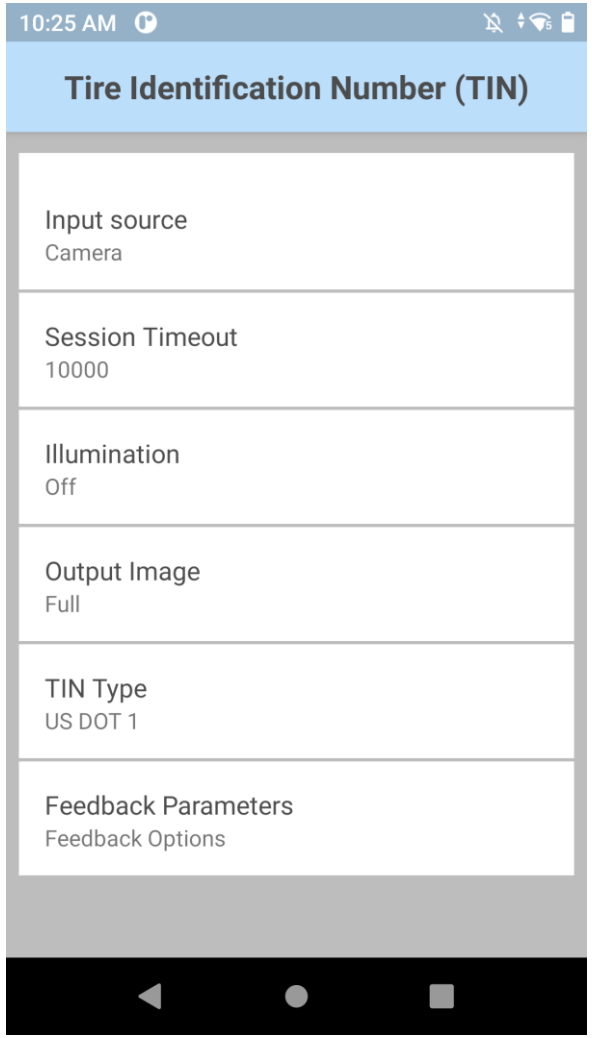
Returned data:

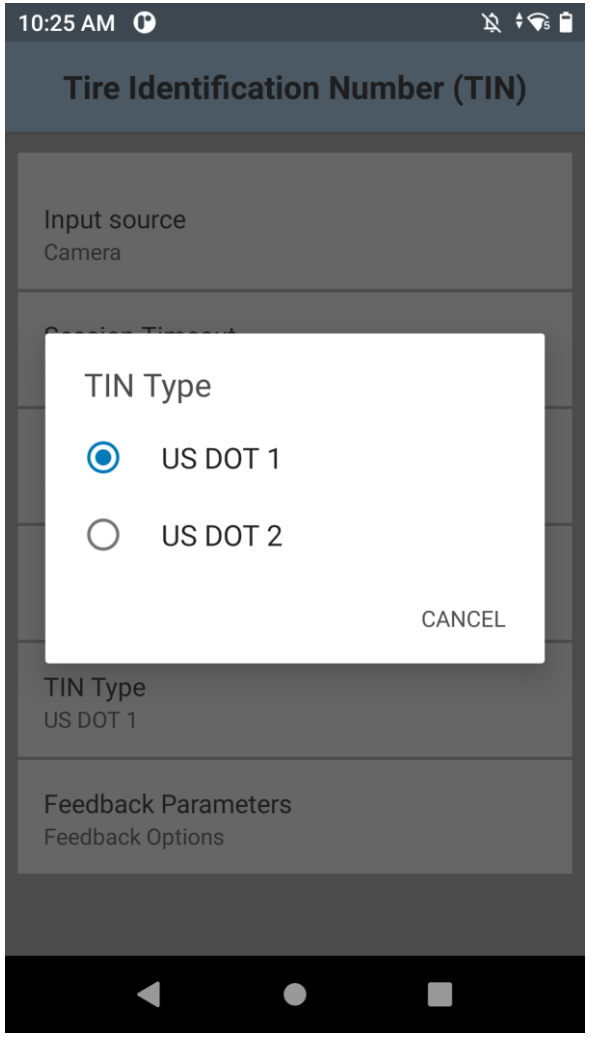
- Single string, the recognised TIN

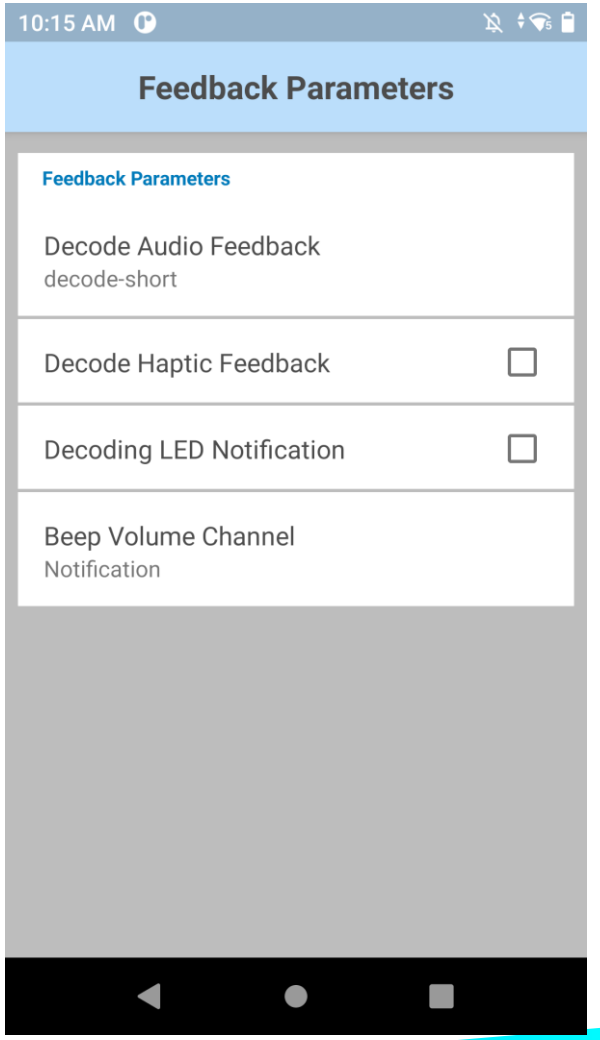
DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Tyre Identification Number (TIN)

Configuration:







DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Tyre Identification Number (TIN)

Demo:

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Meters

Meter types supported:

- Analog – commonly electricity, gas or water meters
  - Optimal performance up to 3 decimal digits and 4-10 pre-decimal digits.
  - Supports black and white backgrounds.
- Digital – commonly heat meters:
  - Read from LCD and LED displays
  - Typically, 7-segment display with at least 3 digits
  - Dot matrix display – automatic comma detection for commas displayed as a separate character
  - Heat meter with 4-6 pre-decimal digits and up to 3 decimal digits

- Dial – commonly electricity meters
- Supports 4 and 5 main dials and up to 1 (red) decimal dial (labeled with numbers)

- Only numeric values are returned
- Read black or red dials on white background.
- The dials are not required to be in a straight line and can be arranged in an arc or slightly shifted.

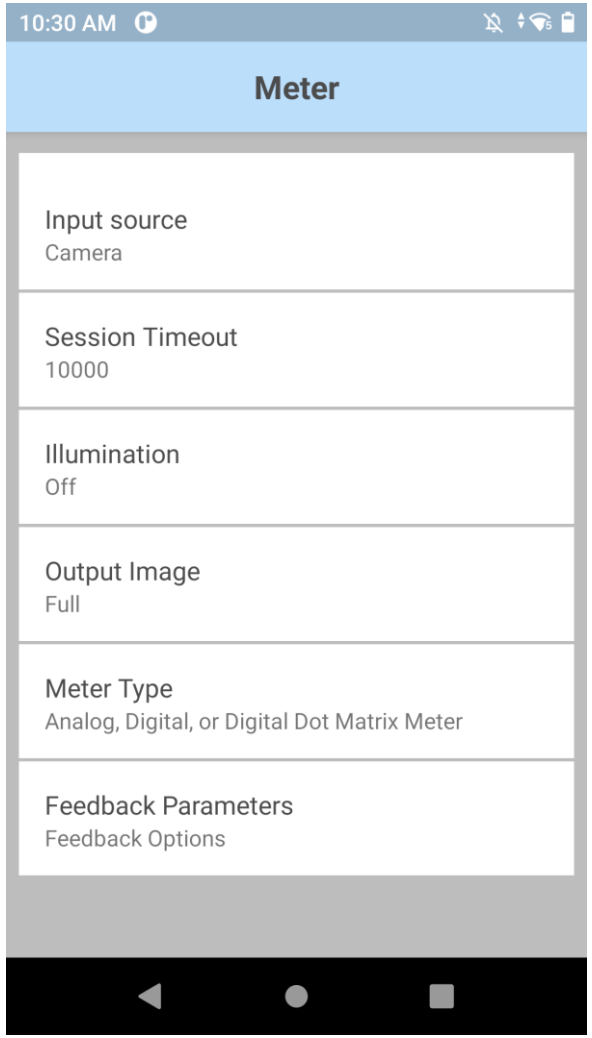
DataWedge 11.2 - OCR and Image Capture

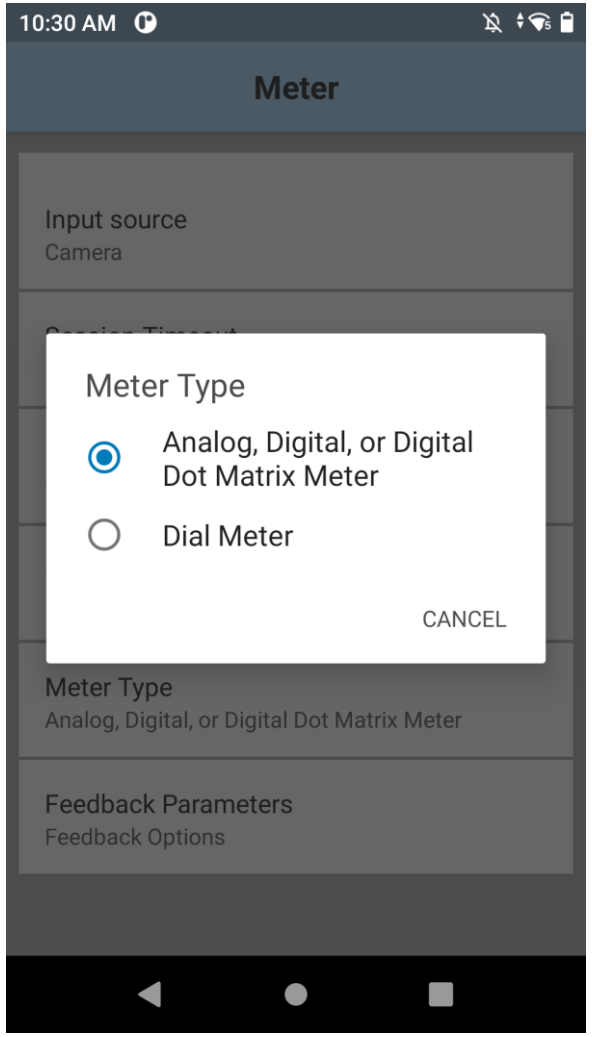
Workflow: OCR: Meters

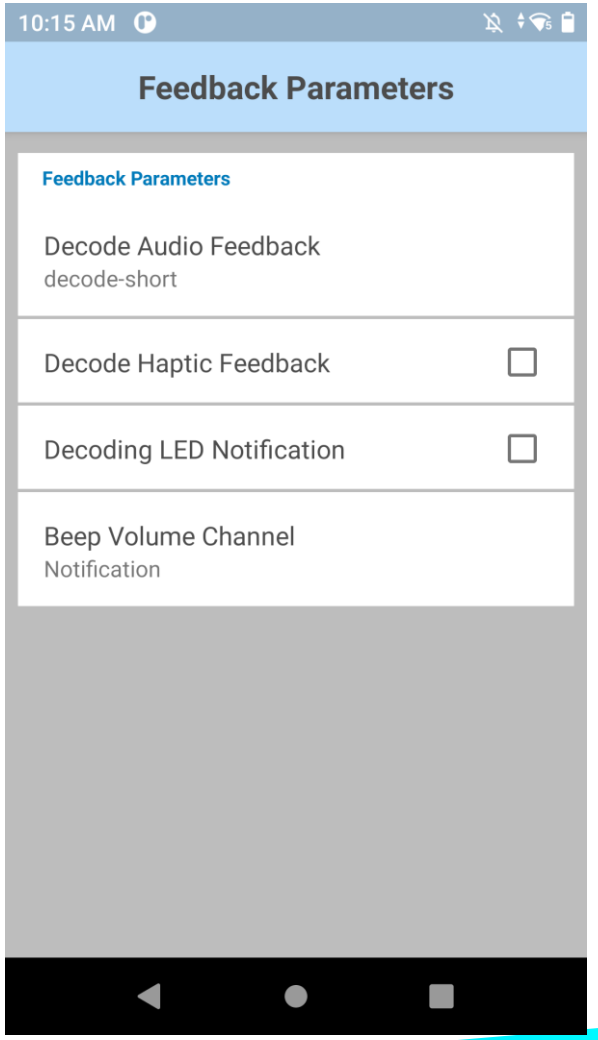
Configuration:

Returned data:

- Single string, the read meter







DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Meters

Demo:

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Identity Documents

Automatic recognition of different identification cards and driver's licenses based on region:

- Driver's Licenses: Europe, US, Canada, Australia, New Zealand
- National/Resident ID Cards: Europe, US, Mexico

For a full list of supported documents, see https://techdocs.zebra.com/datawedge/11-2/guide/input/workflow/#identificationdocumentssupported

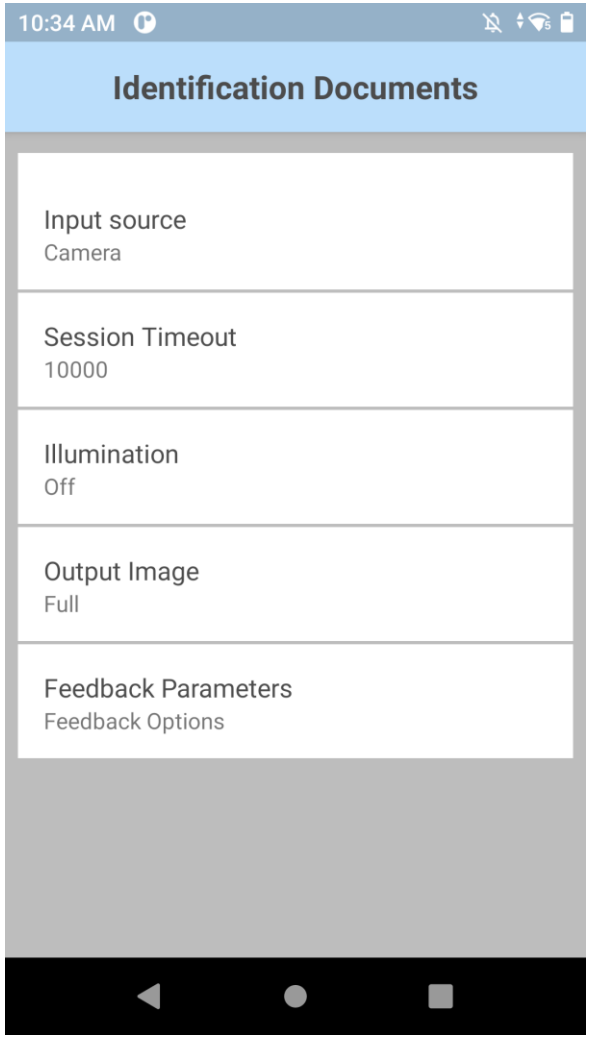
Returned data:

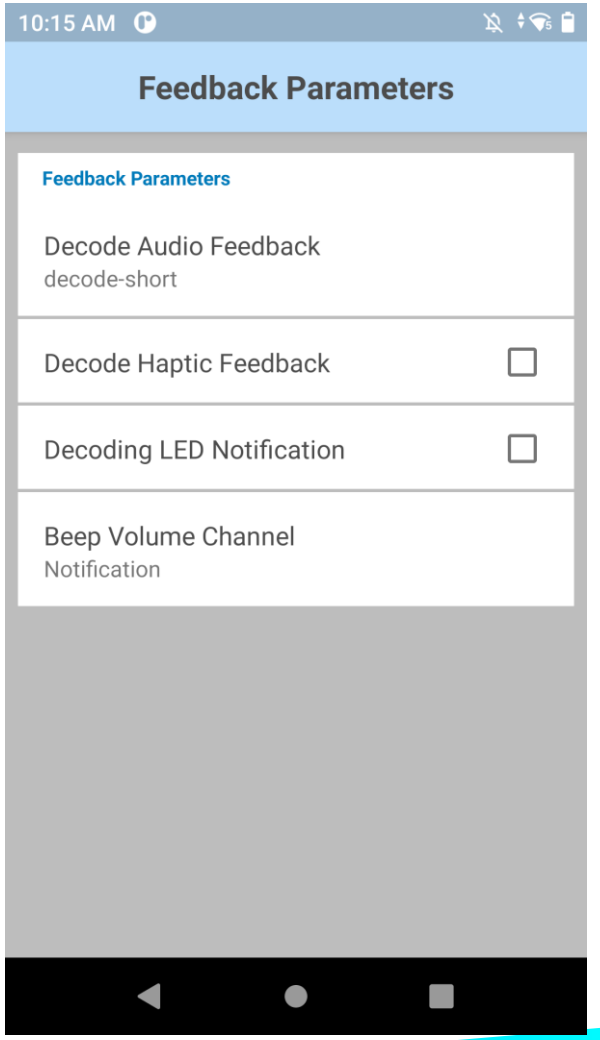
- **Fully parsed data** as a JSON Object
- About 55 fields, see https://techdocs.zebra.com/datawedge/11-2/guide/programmers-guides/workflow-input/#identificationdocument

DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Identity Documents

Configuration





DataWedge 11.2 - OCR and Image Capture

Workflow: OCR: Identity Documents

Demo

DataWedge 11.2 - OCR and Image Capture

Resources

- Licensing process: https://techdocs.zebra.com/licensing/process/
- Documentation:
  - Workflow Input Plugin: https://techdocs.zebra.com/datawedge/11-2/guide/input/workflow/
  - SetConfig API: https://techdocs.zebra.com/datawedge/11-2/guide/api/setconfig/
  - SwitchDataCapture API: https://techdocs.zebra.com/datawedge/11-2/guide/api/switchdatacapture/
  - New notifications for Workflow: https://techdocs.zebra.com/datawedge/11-2/guide/api/registerfornotification/
- Programmer's guides:
  - Barcode Highlighting: https://techdocs.zebra.com/datawedge/11-2/guide/programmers-guides/barcode-highlight/
  - Workflow: https://techdocs.zebra.com/datawedge/11-2/guide/programmers-guides/workflow-input/
- YouTube:
  - Zebra Engineer's code walkthrough: https://youtu.be/dDCnVpmVbD0
  - Playlist of videos in this presentation: https://youtube.com/playlist?list=PLj8D9Diz5FBqN1LH4HN5OOTFTUHs927aH
- **Unofficial** sample app: https://github.com/darryncampbell/DataWedge-Workflow-Sample

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Questions?

http://developer.zebra.com

Zebra Developer Community – LinkedIn Group

@ZebraDevs