JPEG Scripture Publishing for Simple Phones

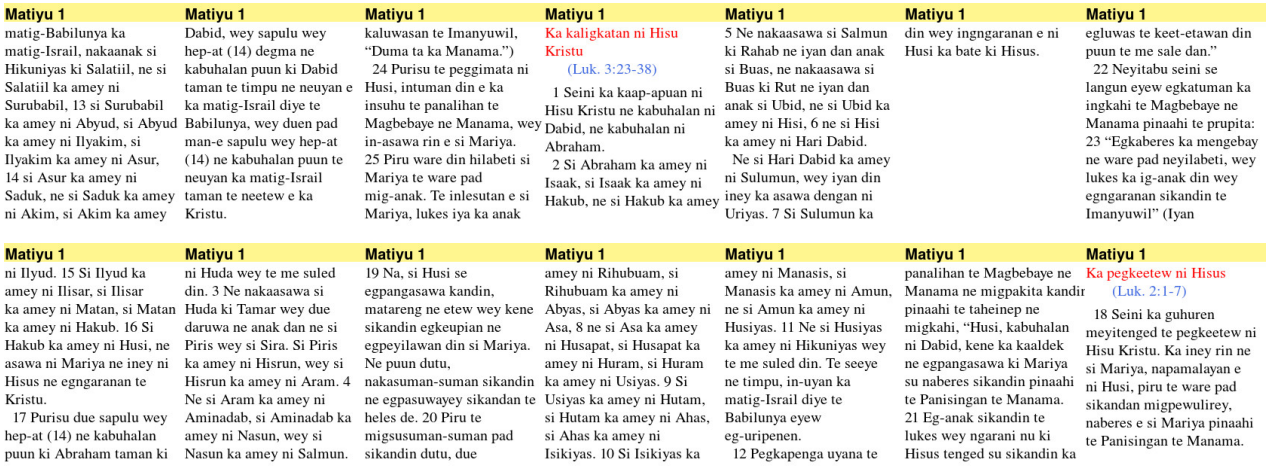
Why make Scripture JPEGs?

There are a range of low-cost phones that don't run Android or iOS, etc. or even Java. However, they do have a camera, and hence they have a way of displaying photo/JPEG files. They also have a SD card slot, and 2GB SD cards are cheaply available.

The Bible Drop Box[1] accepts zipped USFM files (the easiest way is a Paratext backup to file) and can convert them to a PhotoBible. This is a collection of hundreds of JPEG files, each containing 2-3 verses, organised in folders by book and chapter for the phone user to navigate through. After opening one of the images, the left and right navigation buttons on the phone will turn the pages in order.

Unfortunately this was all developed without having access to a phone, so it's depended on others to describe how the phones work. The JPEG files are each 320x240 pixels with a one pixel left-hand margin. The right-hand side of the top line, and the bottom line of the screen/JPEG are used by the phone to display filename and other information, so those areas are left blank in the JPEG files. (It's likely that different phones will work better with different size JPEGs, but we have no information about that yet, and there's no provision for specifying it at this stage.)

Here is sample data from Matthew 1 in a Philippine language. Click on the first image and use the arrows to page through in actual size.



Matiyu 1

matig-Babilunya ka matig-Israil, nakaanak si Hikuniyas ki Salatiil, ne si Salatiil ka amey ni Surubabil, 13 si Surubabil ka amey ni Abyud, si Abyud ka amey ni Ilyakim, si Ilyakim ka amey ni Asur, 14 si Asur ka amey ni Saduk, ne si Saduk ka amey ni Akim, si Akim ka amey

Matiyu 1

Dabid, wey sapulu wey hep-at (14) degma ne kabuhalan puun ki Dabid taman te timpu ne neuyan e ka matig-Israil diye te Babilunya, wey duen pad man-e sapulu wey hep-at (14) ne kabuhalan puun te neuyan ka matig-Israil taman te neetew e ka Kristu.

Matiyu 1

kaluwasan te Imanyuwil, “Duma ta ka Manama.”)
24 Purisu te peggimata ni Husi, intuman din e ka insuhu te panalihan te Magbebaye ne Manama, wey in-asawa rin e si Mariya.
25 Piru ware din hilabeti si Mariya te ware pad mig-anak. Te inlesutan e si Mariya, lukes iya ka anak

Matiyu 1

Ka kaligkatan ni Hisu Kristu
(Luk. 3:23-38)
1 Seini ka kaap-apuan ni Hisu Kristu ne kabuhalan ni Dabid, ne kabuhalan ni Abraham.
2 Si Abraham ka amey ni Isaak, si Isaak ka amey ni Hakub, ne si Hakub ka amey

Matiyu 1

5 Ne nakaasawa si Salmun ki Rahab ne iyan dan anak si Buas, ne nakaasawa si Buas ki Rut ne iyan dan anak si Ubid, ne si Ubid ka amey ni Hisi, 6 ne si Hisi ka amey ni Hari Dabid.
Ne si Hari Dabid ka amey ni Sulumun, wey iyan din iney ka asawa dengan ni Uriyas. 7 Si Sulumun ka

Matiyu 1

din wey ingngaranan e ni Husi ka bate ki Hisus.

Matiyu 1

egluwas te keet-etawan din puun te me sale dan.”
22 Neyitabu seini se langun eyew egkatuman ka ingkahi te Magbebaye ne Manama pinaahi te prupita:
23 “Egkaberes ka mengebay ne ware pad neyilabeti, wey lukes ka ig-anak din wey egngaranan sikandin te Imanyuwil” (Iyan

Matiyu 1

ni Ilyud. 15 Si Ilyud ka amey ni Ilisar, si Ilisar ka amey ni Matan, si Matan ka amey ni Hakub. 16 Si Hakub ka amey ni Husi, ne asawa ni Mariya ne iney ni Hisus ne egngaranan te Kristu.
17 Purisu due sapulu wey hep-at (14) ne kabuhalan puun ki Abraham taman ki

Matiyu 1

ni Huda wey te me suled din. 3 Ne nakaasawa si Huda ki Tamar wey due daruwa ne anak dan ne si Piris wey si Sira. Si Piris ka amey ni Hisrun, wey si Hisrun ka amey ni Aram. 4 Ne si Aram ka amey ni Aminadab, si Aminadab ka amey ni Nasun, wey si Nasun ka amey ni Salmun.

Matiyu 1

19 Na, si Husi se egpangasawa kandin, matareng ne etew wey kene sikandin egkeupian ne egpeyilawan din si Mariya. Ne puun dutu, nakasuman-suman sikandin ne egpasuwayey sikandan te heles de. 20 Piru te migsusuman-suman pad sikandin dutu, due

Matiyu 1

amey ni Rihubuam, si Rihubuam ka amey ni Abyas, si Abyas ka amey ni Asa, 8 ne si Asa ka amey ni Husapat, si Husapat ka amey ni Huram, si Huram ka amey ni Usiyas. 9 Si Usiyas ka amey ni Hutam, si Hutam ka amey ni Ahas, si Ahas ka amey ni Isikiyas. 10 Si Isikiyas ka

Matiyu 1

amey ni Manasis, si Manasis ka amey ni Amun, ne si Amun ka amey ni Husiyas. 11 Ne si Husiyas ka amey ni Hikuniyas wey te me suled din. Te seeye ne timpu, in-uyan ka matig-Israil diye te Babilunya eyew eg-uripenen.
12 Pegkapenga uyana te

Matiyu 1

panalihan te Magbebaye ne Manama ne migpakita kandir pinaahi te taheinep ne migkahi, “Husi, kabuhalan ni Dabid, kene ka kaaldek ne egpangasawa ki Mariya su naberes sikandin pinaahi te Panisingan te Manama.
21 Eg-anak sikandin te lukes wey ngarani nu ki Hisus tenged su sikandin ka

Matiyu 1

Ka pegkeetew ni Hisus
(Luk. 2:1-7)
18 Seini ka guhuren meyitenged te pegkeetew ni Hisu Kristu. Ka iney rin ne si Mariya, napamalayan e ni Husi, piru te ware pad sikandan migpewulirey, naberes e si Mariya pinaahi te Panisingan te Manama.

Preparing your USFM files

If your USFM files contain TOC3 lines, the folder names will use those book abbreviations for the folder names. If they contain TOC1 or TOC2 or h lines, the vernacular name of the book (and the chapter number) will be displayed at the top of each page.

How it works

All of the folders and files (apart from the initial OT and NT folders) are numbered (with leading zeroes like 001) in order to sort correctly on the phone. They are also created in the logical order, so the time stamps on the files should also be in a logical order.

As of writing there is still something we don't understand about the sorting of the JPEGs on the phone, and by default they are not sorted in the correct order. There is an extra manual step required to correct this. We believe we could solve this problem if you have a phone and could help us to do some testing on the phone's sorting algorithms. (It might sort by filename, filedate, or even by internal JPEG information fields which we don't currently fill.)

The output is packaged as a zip file for downloading and installing on the SD card. The whole Bible is around 500MB (make sure you use a download manager for downloading this) -- the OT is also zipped separately (around 350MB) and the NT also (around 150MB).

Hopefully most of the instructions on the Bible Drop Box[2] submission page are clear.

Be sure to check the **PhotoBible export** box because it's not enabled by default.

You will receive an automatic response email after your files have been processed and it will contain the link to a private web page. About half-way down that page, you should find the link to the created PhotoBible files.

Recommendations

I would suggest that you think of this PhotoBible output like a printed Bible -- you wouldn't distribute it widely until you'd proof-read it to check for typesetting errors. As of this writing, it's been checked for one project, but as mentioned above, without access to a phone myself, I can't make many guarantees. The export engine is a very simple typesetting system, and occasionally a line goes very close to the right margin (and possibly a letter is lost from time to time, although I haven't found any yet).

PhotoBible only works for left-to-right languages. It hasn't been tested on non-Roman fonts yet.

It would be nice to have the verse numbers done in a smaller font, or even a different colour, but unfortunately the current software system doesn't allow this. (I tried and failed. For those who want technical information, the Bible Drop Box is all written in Python3, it runs on Ubuntu Linux, and the PhotoBible export runs the Imagemagick convert command-line program to do the export. It was developed quickly as a proof-of-concept for a PNG language -- perhaps we might find a better way to do it in the future especially if there's any Linux gurus reading this.)

If you have any questions or comments about the PhotoBible or the Bible Drop Box, feel free to email me at Freely dot Given dot org at gmail dot com.

-- Robert Hunt

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[1] http://freely-given.org/Software/BibleDropBox/

[2] http://freely-given.org/Software/BibleDropBox/