Learn to adjust height / width for barcodes designed in new symbology.

I search SDN and found some information to develop and embed barcode in SAPSCRIPT and Smartforms. Some information is related to Barcode designed in New Technology (or New Symbology as some of us call it).

SAP Note 645158 provide some guidelines on Barcode in New Technology.

Major advantage for using new technology - No intermediate DIMM / SIMM module required. Easy Maintainance of barcodes, barcode is send as image to printer hence it can be printed on inkjet or Laser printer (without any firmware installed).

Now a days, many of SAP Customers are turning to Smartforms for designing Label. In past, Labels were mostly designed in SAPCRIPTS. Barcode designed in new technology can used in Smartforms as of now. Space is of prime importance while designing label. In such cases, barcode design plays a crucial role.

Adjusting width / height of barcode (Alignment - Normal) :

This depends on which symbology is being used. As per SAP Note 645158, following symbologies are currently supported by New Technology -

- Code39
- Code128
- Interleaved 2of5
- PDF417
- Code93

**WIDTH :**

we will discuss how to adjust width of barcode depending on symbology used.

- Code39 and Interleaved2of5

  1. Parameter **Narrow module width** determines width of narrowest module of bar code. 1 being narrowest and 10 being widest.
  2. Parameter **Bar Ratio** determines ratio between narrowest and widest bar in the barcode.value - 20 to 30. 30 means 3:1 ratio while 20 means 2:1 ratio.
  3. Number of maximum characters that will be used to generate barcode. If you are using some variable used to barcode value, please keep in mind, barcode width will keep on changing depending on number of characters in the variable. Example : Variable with 10 character will produce narrower barcode than variable with 13 character. If this is disturbing your layout you may consider padding 0s, if Client and user can adjust barcode reading software accordingly. For testing purpose, it's better to use maximum number of characters in variable used for barcode.

All above factor need to be adjusted, this will be **Trial and Error** exercise to determine which one fits in your space and at the same time need to make sure that it can be read by RF Gun used by Client. RF Gun may not be able to read too narrow bar, or it may not be able to resolve between bars with too little difference.

- Code128 and Code93

Width adjustment is bit more simpler in this case. One need not worry about parameter **Bar Ratio**. Parameter **Narrow module width** and Number of maximum characters needs to be considered for this symbology. Explanation goes same as above.

- PDF417

This is most complex of all to design, being a 2D barcode. Unlike other symbologies, height also varies for this barcode. To determine width for this barcode parameters **narrow width module** and number of maximum characters need to be considered. Additionally, following parameters also need to be considered :

  1. **Number of Columns** - Being a 2D barcode, one need to maintain ratio of column / row. i.e. how may characters need to be represented in column and how many characters need to be represented in rows. Permitted value are from 1 to 30. This need to be determined in a wise way along with Paramters **Security level, number of rows** and **Truncation**.
  2. **Security level** - This parameter has default value 0. Permitted values are 1-8. Increasing Security level will increase barcode size. Although it will increase error correction capability of barcode. Moreover, PDF417 is 2D barcode, hence barcode size will increase width as well as height depending on values given to parameters **Number of Columns** and **Number of rows**.
  3. **Truncation** - X means yes. It will indicate if right row indicator and stop pattern are to be truncated. This can be used to save some space.
HEIGHT :

- Code39, Interleaved 2of5, Code128 and Code93

Height determination is relatively easier task for 1D barcodes. Parameter \textit{Linear Height} need to be adjusted. Moreover, there are no other factors affecting height for 1D barcodes. permitted value for this parameters are 1-9999. Value of 600 is equal to height of 1 INCH. It can be increased / decreased as per requirement.

- PDF417

Height determination for PDF417 is equal complex, this being 2D barcode. Parameter \textit{Linear height} has no effect on height of barcode in this case.

Parameters \textit{single row height, security level, Number of columns, Number of Rows and Truncation} will decide height of barcode. Refer related links to get a step by step tutorial on creating new barcode, creating smartstyle embedding it in smartform.