# Creating PDF Files for High-Speed 4-Color CMYK Inkjet Printing for the MCS Harrier

## 1. Introduction

This guide explains how to create 4-color CMYK PDF files for MCS Raptor software and Harrier printer.

Most production PDFs come from composition software such as Quadient Inspire, Solimar Systems, OpenText Exstream, Compart DocBridge, and XMPie.

> **The Raptor RIP prints exactly what is in the PDF. The better the PDF, the better the printed result.**

## 2. Recommended PDF Standards

| Recommended | Acceptable | Avoid When Possible |
|---|---|---|
| **PDF/X-1a** | PDF/X-4 | Generic PDF exports |
| **CMYK images** | ICC-managed RGB | Mixed RGB / CMYK |
| **Embedded fonts** | Outlined fonts | Missing fonts |
| **Vector logos** | High-resolution raster | Low-resolution raster |

## 3. Vector Graphics vs Raster Images

| Recommended — Vector | Avoid — Raster |
|---|---|
| Logos · Text · Barcodes · QR codes · Line art.<br>**Stay sharp at any resolution.** | Raster logos · text · barcodes · line art.<br>**Often print soft or fuzzy.** |

## 4. Composite Black vs K-Only Black

**This is the single biggest issue seen in production. Many composition systems build black as CMYK composite black instead of clean K-only.**

| Composition output | Should be |
|---|---|
| `C 60  M 50  Y 45  K 100` | `K 100` |

Raptor separates composite black into four channels. That suits offset, but it softens small text and line art on inkjet.
**Recommendation:** keep text, barcodes, and small graphics K-only. Use composite black only for rich blacks.

## 5. Image Resolution

| Image type | Recommended |
|---|---|
| Photos | **300 dpi** |
| Logos | **Vector preferred** |
| Screenshots | **300 dpi minimum** |
| Barcodes | **Vector only** |

## 6. Color Space

| Recommended | Avoid |
|---|---|
| CMYK artwork · embedded ICC profiles · a consistent output profile. | Mixed RGB and CMYK · device RGB · uncalibrated colors. |

## 7. Transparency

Live transparency can render differently depending on the RIP.

- Flatten transparency when practical.
- Test transparency-heavy artwork before production.

- Verify gradients after RIP processing.

## 8. Rich Black Usage

| Application | Recommendation |
|---|---|
| Small text | **100% K** |
| Fine lines | **100% K** |
| Barcodes | **100% K** |
| Large solids | Rich black acceptable |
| Photos | Composite black acceptable |

## 9. Total Ink Coverage (TAC)

Excessive CMYK coverage may:

- Increase dry time.
- Increase bleed and show-through.
- Produce muddy colors.

Follow the substrate manufacturer's recommended TAC limit.

## 10. PDF Export Recommendations

### For Quadient Inspire

- Export PDF/X-1a whenever possible.
- Preserve vector objects; avoid rasterizing entire pages.
- Embed all fonts.
- Keep barcodes as vectors.
- Generate K-only text and line art.

### For OpenText Exstream

- Export PDF/X-1a, or validated PDF/X-4.
- Use the production-print PDF driver; keep shared resources cached.
- Embed all fonts; verify glyph coverage for variable data.
- Convert spot colors to process; keep text and barcodes K-only.
- Re-check color and overprint when moving jobs from AFP/IPDS to PDF.

### For Compart DocBridge

- Export PDF/X-1a or optimized PDF — avoid a single flat PDF.
- Preserve vectors; generate barcodes natively as vector, K-only.
- Apply ICC color management on output.
- When converting AFP/PCL to PDF, verify color mapping and resources.
- Validate with DocBridge Delta before printing.

### For XMPie

- Export PDF/X-1a for print output.
- Keep logos and barcodes as vector, not rasterized images.
- Embed all fonts used across variable records.
- Set black text and line art to K-only.
- Verify images are 300 dpi — avoid web-resolution assets.

## 11. Before Sending Files to Harrier

- ☐ PDF/X-1a or validated PDF/X-4
- ☐ Fonts embedded
- ☐ Logos are vector
- ☐ Barcodes are vector
- ☐ Black text is K-only
- ☐ Images are 300 dpi
- ☐ CMYK color space
- ☐ Transparency checked
- ☐ ICC profiles embedded
- ☐ Print sample reviewed