MONOTYPE®

New Media Font Technology: Bitmapped Font

- **Hand-tuned for Legibility**
- **Approved by PRC Government**
- **Available in Different Writing Style, Languages, Encodings**

"AgfaMonotype bitmapped font is designed for devices such as set-top-box, mobile phone, PDA to display characters with limited resolution and processing resource. It is also ideal to be embedded into a font for displaying characters in small sizes on a workstation."

Bitmapped Characters

Bitmapped character usually represents character shape by bits of **1**s and **0**s. A **1** represents a black pixel while a **0** represents a white pixel. In the case of gray-scale bitmapped character, each pixel is described by, for example, an eight bit value which represents the "darkness" of a pixel.

Bitmapped characters can be generated from outline font on the fly with a rasteriser. However, even with hinting, such rasterised bitmapped character cannot compare to an hand-tuned bitmapped in legibility. This is especially obvious when the characters are small or resolution is low.

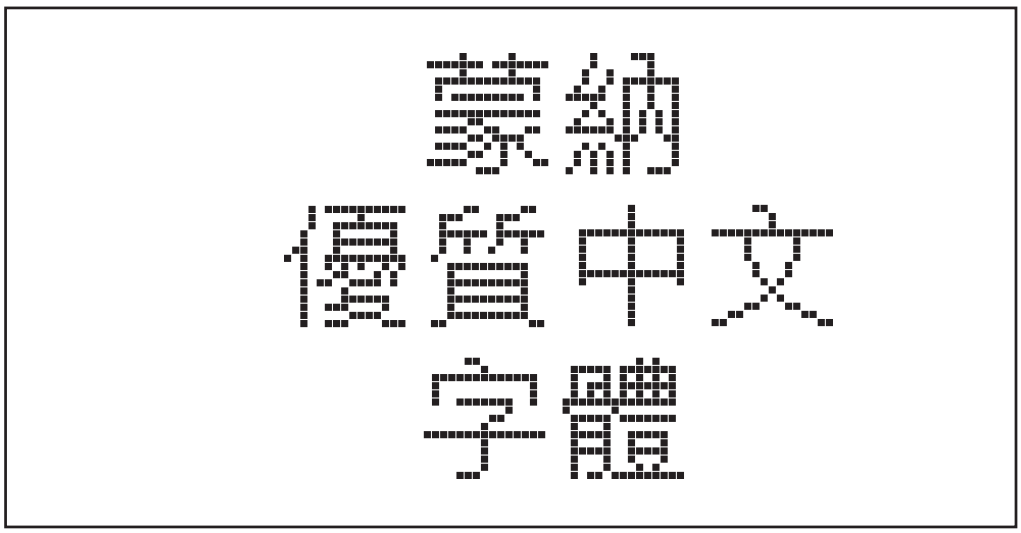

Figure 1: 16x16 bitmapped characters

Comparing with outline characters, bitmapped characters can be displayed easily - no complex algorithm or calcuation is required. However, there are some drawbacks on bitmapped fonts: bitmapped fonts cannot be scaled easily. In addition, storage size of bitmapped font increases with size and they can grow much bigger than outline font.

All bitmapped fonts provided by AgfaMonotype are carefully hand-tuned for good legibility.

AgfaMonotype Design Criteria

Legibility vs Correctness

Fonts are used to convey messages and ideas. Therefore it is important to produce bitmapped fonts that write correctly. However, as pixel size decreases, it is increasingly difficult to maintain character writing.

AgfaMonotype bitmapped fonts provide a good balance between legibility and correctness. At large sizes, writing correctness takes precedence. While at small size, we apply techniques such as stroke drop-out, feature simplications, hence making it more legible and distinguishable.

Writings and Locales

When the Unicode Consortium merging character sets from different locale, they faced a daunting task of unifying Han ideographs. Since Han ideographs (also known as Kanji, Hanja) is adopted by Japan, Korea as part of their language hundreds of years ago, it has been going through evolutions of their own. Characters are created, writtings are modified. Perhaps the most recent one is the creation of simplified Chinese character set in the 1960s.

Due to heritage and other reasons, every country/ location can only accept character writings of what they are accustomed to. Some country goes further as to require character writing certified. Figure 2 illustrates differences (sometimes subtle) in writings of different locales:

Despite the hard work of the Unicode committee, a single Unicode character cannot satisfy all locales.

PRC Approval

Government of the People's Republic of China stipulates that all information technology products sold in the country requires certifications to comply with varies national standards (Guo Biao). Products uses bitmapped font and outline typefaces are under this criteria.

AgfaMonotype bitmapped and outline fonts have received approvals and recommendations from the State Language Committee (SLC) and Committee of Information Technology Standardisation(CITS) indicating compliance and quality.

SLC is a committee under the Ministry of Education and CITS is a committee under Chinese Electronic Standardisation Institute.

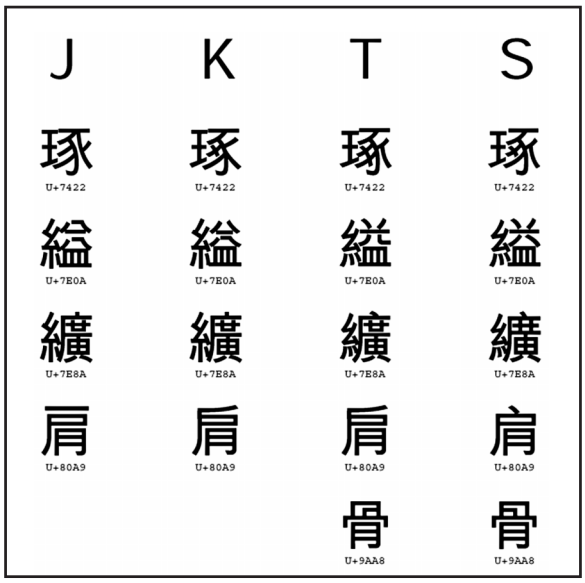

Figure 2: Comparison of writings of different locale

Availability

	11x11	11x12	13x13	13x14	15x15	15x16	17x17	17x18	19x19	19x20	21x21	23x23
HeiS (GB18030)	✓	❍	✓	❍	✓	❍	✓	❍	✓	❍	✓	✓
HeiT (CP950)	✓	❍	✓	❍	✓	❍	✓	❍	✓	❍	✓	
SongS (GB18030)			✓	❍	✓	❍	✓	❍	✓	❍	✓	
SungT (CP950)			✓	❍	✓	❍	✓	❍	✓	❍	✓	
HGGothic (CP932)			✓	❍	✓	❍	✓	❍	✓	❍	✓	
HGMincho (CP932)			✓	❍	✓	❍	✓	❍	✓	❍	✓	
HYGothic (CP949)	✓	❍	✓	❍	✓	❍	✓	❍	✓	❍	✓	
HYMyeongjo (CP949)			✓	❍	✓	❍	✓	❍	✓	❍	✓	

Note : The sizes indicated are maximum glyph size
✓ : available immediately
❍ : available in early 2003