AN995
APPLICATION NOTE

Changing from the ST24xxx and ST25xxx to the M24xxx In Your Application

This document is written for users of the ranges of EEPROM device shown in Table 1.

Table 1. ST24xxx and ST25xxx Devices

V_{CC} = 3.0 to 5.5 V		V_{CC} = 2.5 to 5.5 V	
ST24C01	ST24W01	ST25C01	ST25W01
ST24C02	ST24W02	ST25C02	ST25W02
ST24C04	ST24W04	ST25C04	ST25W04
ST24C08	ST24W08	ST25C08	ST25W08
V_{CC} = 4.5 to 5.5 V		V_{CC} = 2.5 to 5.5 V	
ST24C16	ST24W16	ST25C16	ST25W16
ST24164		ST25164	
ST24E32		ST25E32	
ST24E64		ST25E64	

The above devices, in all variations of package and temperature range, are to be discontinued. They can be replaced by equivalents in the more advanced M24xxx range, shown in Table 2.

Table 2. M24xxx Devices

V_{CC} = 4.5 to 5.5 V	V_{CC} = 2.5 to 5.5 V
M24C01	M24C01-W
M24C02	M24C02-W
M24C04	M24C04-W
M24C08	M24C08-W
M24C16	M24C16-W
M24164	M24164-W
M24C32	M24C32-W
M24C64	M24C64-W

For the majority of applications, the M24xxx devices can be treated as pin compatible with, and functionally equivalent to, the ST24xxx and ST25xxx devices, as listed in the first two columns of Table 3. There are some exceptional cases, though. For these, the third column of Table 3 draws attention to the notes below the table.

Table 3. Approximate Equivalents

Memory Capacity	Previous device	Replacement	Exceptions
1 Kbit	ST24C01	M24C01	Note 2, 3
	ST24W01	M24C01	Note 3
	ST25C01	M24C01-W	Note 2
	ST25W01	M24C01-W	
2 Kbit	ST24C02	M24C02	Note 2, 3
	ST24W02	M24C02	Note 3
	ST25C02	M24C02-W	Note 2
	ST25W02	M24C02-W	
4 Kbit	ST24C04	M24C04	Notes 1, 2, 3
	ST24W04	M24C04	Note 1, 3
	ST25C04	M24C04-W	Notes 1, 2
	ST25W04	M24C04-W	Note 1
8 Kbit	ST24C08	M24C08	Notes 1, 2, 3
	ST24W08	M24C08	Note 1, 3
	ST25C08	M24C08-W	Notes 1, 2
	ST25W08	M24C08-W	Note 1
16 Kbit	ST24164	M24164	
	ST24C16	M24C16	Notes 1, 2
	ST24W16	M24C16	Note 1
	ST25164	M24164-W	
	ST25C16	M24C16-W	Notes 1, 2
	ST25W16	M24C16-W	Note 1
32 Kbit	ST24E32	M24C32	
	ST25E32	M24C32-W	
64 Kbit	ST24E64	M24C64	
	ST25E64	M24C64-W	

Note 1: If, in the application, the Protect Enable (PRE) pin (pin 1) is always held Low, the M24xxx family can be used as a direct replacement for the original device.

If the PRE pin is held High, or is allowed to vary, the replacement is not so direct, and the designer is advised to contact the ST local sales office for technical support (or to e-mail the technical support electronic mail address: *ask.memory@st.com*).

Note 2: If, in the application, the MODE pin (pin 7) is always held Low, the multibyte write mode of the device is never used, and the M24xxx family can be used as a direct replacement for the original device.

If the MODE pin is held High, or is allowed to vary, the replacement is not so direct, and the designer is advised to contact the ST local sales office for technical support (or to e-mail the technical support electronic mail address: *ask.memory@st.com*).

Note 3: If, in the application, V_{CC} is kept in the range 4.5 V to 5.5 V, the M24xxx family can be used as a direct replacement for the original device.

If V_{CC} is used in the range 3.0 V to 4.5 V, the equivalent M24xxx-W device can be used as a direct replacement for the original device.

For current information on ST products, please consult our pages on the world wide web:

www.st.com

If you have any questions or suggestions concerning the matters raised in this document, please send them to the following electronic mail addresses:

apps.eeprom@st.com (for application support)

ask.memory@st.com (for general enquiries)

Please remember to include your name, company, location, telephone number and fax number.