

Mint^{MT} Multi-Tasking Application Note**AN00151-001 – Using the RoHS compliant NextMove ES and its effect on NextMove ST****Related Applications or Terminology**

- **NextMove motion controllers**

Referenced Controllers

NextMove ES	<input checked="" type="checkbox"/>
NextMove ST	<input checked="" type="checkbox"/>

Definitions

MEX – Mint executable
TF – Target Format

What is RoHS?

The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

The RoHS Directive does not currently apply to medical devices, monitoring and control instruments, large-scale stationary industrial tools, spare parts for the repair or reuse of electrical and electronic equipment placed on the market before July 1, 2006, equipment relating to protection of essential interests of state security, weapons, ammunition and military equipment designed for specifically military purposes, power generation, or to other exempted applications, generally for technical reliability or safety reasons.

For this reason Baldor Products are exempt from European Legislation as the majority of applications are covered under the exemptions. However, it is our policy, where possible and following rigorous testing and strict process controls, to produce RoHS compliant products.

Hardware changes on the new RoHS compliant NextMove ES

The only functional change on the new RoHS compliant card is the use of a new USB controller. This is not backward compatible with the previous USB controller so new firmware is required.

The new card has an orange seven segment display, the previous card has a green display.

To see the revision of the card using Mint WorkBench, use the SupportMe feature; in the Controller Hardware section, the previous card is G171 and the new card is H100.

Firmware compatibility

All firmware releases from Build 5356 are compatible with the new card. In order to download firmware to the card it is essential to use Mint WorkBench v5.5 Build 5555 or later. Using an older WorkBench or using older firmware will result in the error message 'Incompatible firmware for controller'.

Older Mint WorkBench releases, and customer host applications using the Mint ActiveX control before Build 5555, will still communicate correctly with the card, only firmware download is not compatible.

Mint^{MT} Multi-Tasking Application Note

At the time of writing, the card will be shipped with 'Mint Build 5403 USB CANopen'.

Compatibility with existing applications

If the application does not use a Mint program, or the Mint program is compiled and downloaded by the application or Mint WorkBench, then an existing NextMove ES can be replaced with the new version without any changes.

If the application uses a compiled Mint program (.MEX file) then the version of firmware must be taken into account. The Mint language has an internal version number called its target format or TF for short. All firmware before Build 54xx used TF10. Build 54xx firmware adds debugging capabilities and uses TF13. A compiled Mint program is specific to the target format version for which it was compiled and cannot be used on a different target format.

If the existing application uses a compiled Mint program for TF10 then this will not run on Build 54xx firmware (the default shipped with the card). There are two solutions to this; either use Mint WorkBench to recompile the Mint program for the new firmware, or download Build 5356 firmware to the card (which uses TF10).

An embedded application which uses Mint libraries prior to Build 5356 will need to be recompiled.

Summary of changes required:

	Changes Required for RoHS card
No Mint program	None
Mint program compiled and downloaded from Mint Workbench	None
Mint program compiled and downloaded from host application	None
Compiled program (.MEX) downloaded from Mint Workbench or host application	None if previous firmware was Build 54xx. Recompile or change firmware otherwise
Embedded application	Needs to be updated if libraries used older than Build 5356
Use with older versions of Mint WorkBench	None. Firmware download only possible from Mint Workbench Build 5555 onwards
Use with existing host applications	None apart from consideration of Mint program download as mentioned above

How does this affect NextMove ST?

NextMove ST uses the NextMove ES control card mounted on a base card which has the stepper drives and breakout connectors. The base card is not RoHS compliant and there are no current plans to change this.

The considerations of firmware and application compatibility described above still apply to NextMove ST since it uses the new RoHS compliant control card.

Mint MT Multi-Tasking
Application Note**Are the NextMove ES backplanes RoHS compliant?**

No. The NextMove ES backplanes are not RoHS compliant and there are no current plans to change this.

Any change to the device driver?

No. The existing USB device driver can be used.

Order code changes

The following table shows the order codes for NextMove ES and the new RoHS compliant revision.

Description	NextMove ES	NextMove ES RoHS
NextMove ES, USB and RS232, 2 servo, 4 stepper	NES002-501	NES002-501
NextMove ES, USB and RS485, 2 servo, 4 stepper	NES002-502	NES002-502
NextMove ES, USB and RS232, 2 servo, 6 stepper	NES002-503	NES002-503