

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL



Free 2-year warranty
in North America and EU only

This guide is to assist you with the set-up and use of your **Magicard™** Secure ID card printer.
The printer models covered by this document include:-

Magicard Rio 2e Series

Secure ID card printer.

Magicard Tango 2e Series

Secure Double-sided ID card printer.

Magicard Tango +L Series

Secure Double-sided ID card printer with integrated laminator.



standard



standard



standard



Tango 2e
only



Standard



option



option



option



pending



age 1 of 44



Issue 3.00 09.02.2007



www.ultramagicard.com

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Index

Before Use	3
Safety Instructions	3
About this guide.....	3
1. Installing the Printer	4
2. Installing the <i>UltraDriver</i>	6
Installing to USB.....	6
Installing to Parallel (LPT)	8
Installing to Ethernet.....	9
3. Choosing the right Dye-Film Ribbon	11
4. Loading the Dye-Film Ribbon	12
5. Choosing the right Lamination Film (Tango +L Only)	12
6. Loading the Laminate Roll	13
7. Choosing the right Cards	14
8. Laminating Cards	15
9. Loading the Cards	16
10. Cleaning your Printer	17
Cleaning is Important.....	17
Cleaning is Easy and Inexpensive.....	17
The Magicard Cleaning System.....	17
Cleaning Supplies.....	18
Every 350 Prints or Sooner	18
Every 1000 Prints	19
Cleaning the Printhead	19
11. Printer Driver settings	20
The Printer Tab.....	20
The Card Front & Card Back Tabs	22
The Laminating Tab: (This option is only available on the Tango +L)	28
The Advanced Tab:	29
The Magnetic Encoding Tab:.....	31
The Save & Restore Tab:	32
12. Uninstalling the <i>UltraDriver</i>	33
13. Magicard Support Utility	34
14. Troubleshooting	36
15. Warranty	39
UltraCoverplus™ Extended Warranty & Loaner Service	39
Limited Warranty Information.....	40
16. Technical Support, Service, and Warranty Enquiries	41
17. Contact Us (Sales):	42
18. EMC	44
Federal Communications Commission (FCC) Statement	44
Canadian Department of Communications Statement.....	44
EU Declaration of Conformity	44

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Before Use

Safety Instructions

Please read all of these instructions before using your printer. Observe the markings on the rear panel of the printer.

- To prevent electric shock do not remove covers.
- Do not attempt to service the printer yourself.
- There are no user serviceable parts inside. In the event of malfunction, refer servicing to your nearest Ultra Electronics Service Center.
- Use only a power source within the limits marked on the rear panel label.
- Take care not to spill any liquid on the printer.
- Ensure that the power supply cord is not longer than 6 feet (2 metres) and includes a properly grounded connection.
- If using this printer in Germany:
To provide adequate short-circuit protection and over-current protection for this printer, the building installation must be protected by a 16 Amp circuit breaker.
Bei Anschluß des Druckers an die Stromversorgung muß sichergestellt werden, daß die Gebäudeinstallation mit einem 16-AÜberstromschalter abgesichert ist.

Warnings, Cautions and Notes

Throughout this guide and in text on the CD, the following conventions are used to identify important information.

- WARNING** - Warning messages indicate where personal injury could result from not following the correct procedures.
- CAUTION** - Caution messages indicate where damage to equipment could result from not following the correct procedures.
- NOTE** - Notes convey important information that is identified within the text.

When Handling the Printer

Avoid touching the thermal printing edge of the thermal printhead. Grease and contamination will shorten its life.

Before transporting the printer, remove the dye film and card hoppers.

Pack the printer in its original packaging.

If you have a problem with the installation or operation of your Magicard printer, please first recheck to ensure that you have followed the instructions given in this guide and on the CD ROM.

We also recommend that you visit our website www.magicard.com where additional FAQs and technical support information is available, and a 'contact us' email form to report any problems.

About this guide

The information contained in this guide is subject to change without notice.

Ultra Electronics Limited shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance or use of this material.

This document contains proprietary information belonging to Ultra Electronics Limited and may not wholly or partially be copied, stored in a data retrieval system, disclosed to third parties or used for any purpose other than that for which it was supplied, without the express written authority of Ultra Electronics Limited. All rights are reserved.

Magicard® is registered as a trademark with the United States Patent and Trademark Office, Reg. No. 2,197,276.

The HoloKote™ feature of Magicard® printers is protected by US PATENT No: 5,990,918 and by European PATENT SPECIFICATION EP 0 817 726 B1.

Microsoft and Windows are trademarks of Microsoft Corporation.

Copyright 2006 Ultra Electronics Limited.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

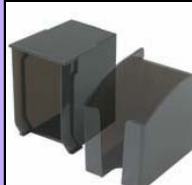
1. Installing the Printer

1. Unpacking

Rio 2e/Tango 2e



Hopper and Stacker



Power Cable



USB Cable



Driver CD



2. Consumables

Cleaning Cards & Roller



Dye Film and Cards



Note: To complete installation and begin using your printer you will require a roll of Magicard dye-film and cards (not included).

3. Printer location requirements

- Sufficient space for:
 - opening the top cover
 - cable access at the rear.
 - allowance for air circulation.
- An adequately ventilated dust free room.
- Access to a properly grounded power supply.
- Ambient temperature +10 to 30 degrees C.
- Relative humidity 20 - 70%.
- Protection from direct sunlight and chemicals.
- Protection from abrupt temperature changes.

4. Attach the card output stacker



Insert the card collection stacker into the aperture in the front panel and hook into place. The stacker can hold up to 50, 30mil thick cards, after which it should be emptied. The printer can be operated without the stacker if you wish.

5. Attach the Card Feed Hopper

1. Open a clean pack of cards and make sure they are not sticking together. Load the cards into the feed hopper. Avoid touching the card surfaces because finger marks can effect image quality.

Note: When using magstripe cards, ensure the stripe is on the right and underneath when viewed from the front.



2. Tilt the loaded hopper back as shown, and lower gently into the receptacle at the rear of the printer. You will be able to lower the hopper about an inch (25mm).
3. At this point, tilt the hopper forward to the vertical position and lower all the way down until the hopper is completely within the body of the printer.

6. Prepare the cleaning cassette

Press down on the top cover, operate the top cover release catch and open the cover. First remove the white tape holding the black plastic cleaning cassette. Grip the handle between finger and thumb, then push and release the cleaning cassette. Remove the



orange tape and protective layer from the disposable cleaning cassette roller.

Note: This is a good time to familiarise yourself with the way that this automatic cleaning system is designed to operate.

Finally replace the cleaning cassette by inserting the roller shaft into the U shaped guides and clicking into place.

7. Install the dye film

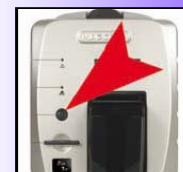
1. Open a new roll of dye film.
2. Place the loaded spool into the rear clips and press it into place. The orientation is correct when the bar code on the end of the spool to the left hand side when viewed from the front. Rotate to make sure that the slot engages with the lug.
3. Place the empty take up spool into the front clips, and adjust the film tension so that the film is lying flat and straight between the two spools.
4. Press the top cover down until it clicks into the closed position. The printer will automatically recognize the type of film that has been loaded.



8. Plug in the printer

Make sure that the printer is turned Off, i.e. the On/Off button is slightly protruding from the front panel.

Plug the power supply lead provided into the socket on the rear panel of your printer, and the other end into a properly grounded electrical outlet.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

9. Print a test card

1. Switch the printer on. You will hear some motor activity and see the indicators flash.
2. When ready, the red Error indicator should be off and the green indicator on.
3. Press and release the small test push button on the rear panel once.
4. After several seconds, the printer will print a test pattern on a card, and feed it to the card output stacker. This indicates that all is well with the printer, i.e. cards loaded, dye film loaded, power is on and lid is closed.



10. Load the CD into your PC

Turn to page 6 for full instructions on how to install the printer drive

CAUTION. Only connect one interface (USB or Ethernet or Parallel) to your PC. Do not connect multiple interfaces, as this can cause incorrect operation.

On completion of installation, you will be able to print cards.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

2. Installing the *UltraDriver*

Installing to USB

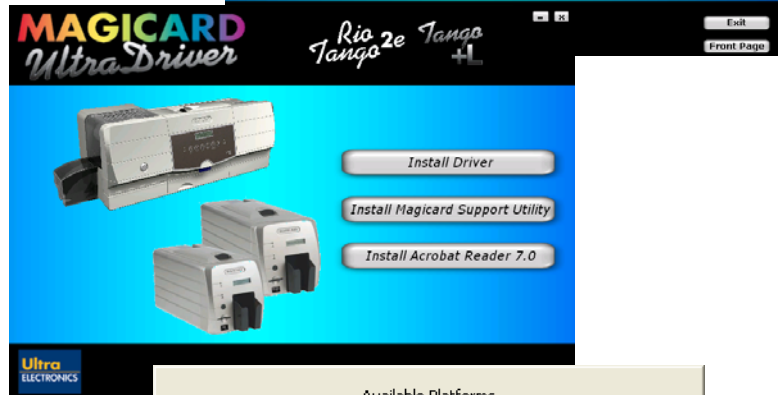
1. **Important** - Make sure the printer is switched off.
2. Load the driver CD ROM into the PC you have connected to the printer.
If the CD does not run automatically, click the start button, then click on "run". Type "D:\autorun" (where D is the drive letter for your CD drive), then press the return key.
The driver CD 'Splash Screen' will appear.
Select your printer model – **Rio 2e** or **Tango 2e** or **Tango +L**.



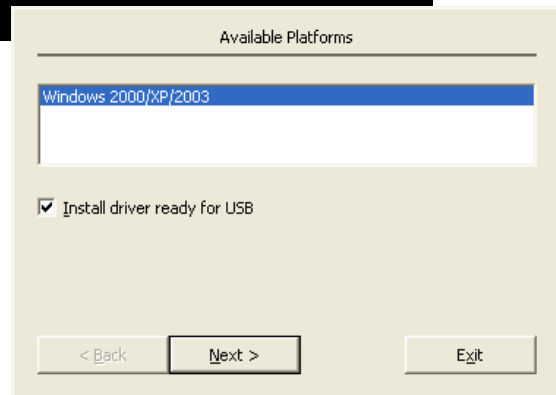
3. Select the "Install Software" option

4. Then select the "Install Driver" option

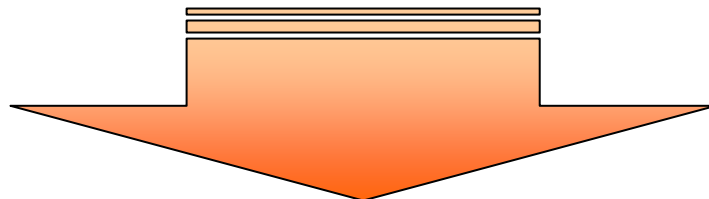
The driver installation will begin and the driver installation window will open



5. Ensure that the "Install driver ready for USB" option is selected, then press 'Next >'



Continued on next page

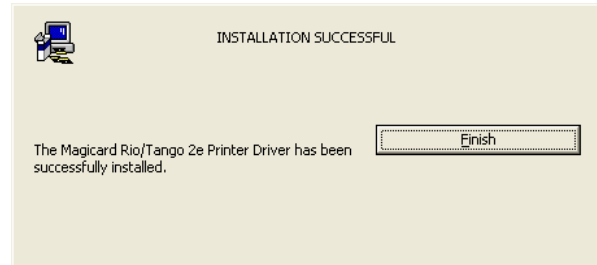


RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Installing to USB continued -

Wait while the USB driver files are installed and registered

6. At the "Installation Successful" window – click 'Finish'.



7. Make sure the printer is connected via the USB cable to your PC. Then switch **ON** the printer.

There will be a short delay while the printer initializes. Then Windows will detect the printer via the USB connection and will complete the installation.



8. It is recommended that you test the new driver installation by printing a Windows **Test Page** from the 'General' tab of the Printer Driver Properties – the Windows Logo should be printed in the centre of the card.

(To configure the new Printer Driver's settings please see **Section 11 – Printer Driver Settings** – for a detailed explanation of each setting).

CAUTION:-

If the computer you are configuring for a USB connection to the Magicard printer has at some time run another manufacturer's printer (e.g. Eltron C-Series printer), a Windows file necessary for the Magicard installation could be missing.

(The symptoms of this are that the computer does not seem to detect the printer's USB connection, and the **Test Page** fails to print).

Recover the file as follows:-

1. Navigate to **c:\windows\inf** (Windows XP) or **c:\winnt\inf** (Windows 2000).
2. Find the file named **usbprint.in**, and then rename it to **usbprint.inf**.
3. Reconnect the USB cable.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Installing to Parallel (LPT)

1. Load the driver CD ROM into the PC you have connected to the printer.
If the CD does not run automatically, click the start button, then click on "run". Type "D:\autorun" (where D is the drive letter for your CD drive), then press the return key.

The driver CD 'Splash Screen' will appear.
Select your printer model – **Rio 2e** or **Tango 2e**.

2. Select the "Install Software" option

3. Then select the "Install Driver" option

The driver installation will begin and the driver installation window will open

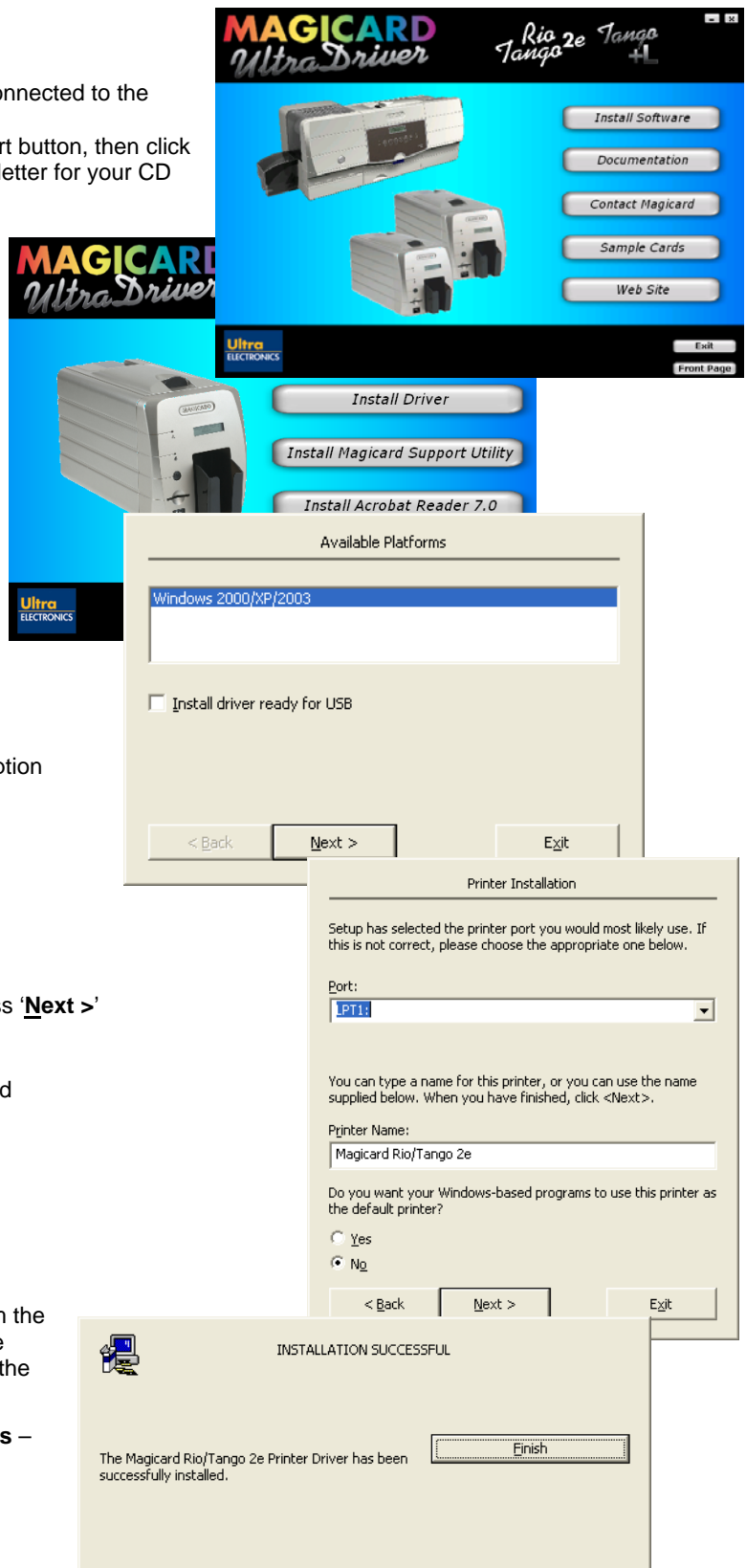
4. Ensure that the "Install driver ready for USB" option is **NOT** selected, then press 'Next >'

5. Select the desired port (usually LPT1), then press 'Next >'

Now wait while the parallel driver files are installed and registered.

6. On successful installation, select "Finish"
 - It is recommended that you test the new driver installation by printing a Windows **Test Page** from the 'General' tab of the Printer Driver Properties – the Windows Logo should be printed in the centre of the card.

(Please see **Section 11 – Printer Driver Settings** – for a detailed explanation of each setting).



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Installing to Ethernet

Important – IT networks can be diverse and complex, therefore it is recommended that this procedure is carried out **only** by your company's **IT Personnel**.

Note – the printer's default IP address mode is '**Dynamic**' (DHCP), therefore when first connected to the network it will request an IP address from the network's DHCP server and will use the address provided by the server. If your network cannot provide a dynamic address, the printer will automatically revert to a default static address of :-

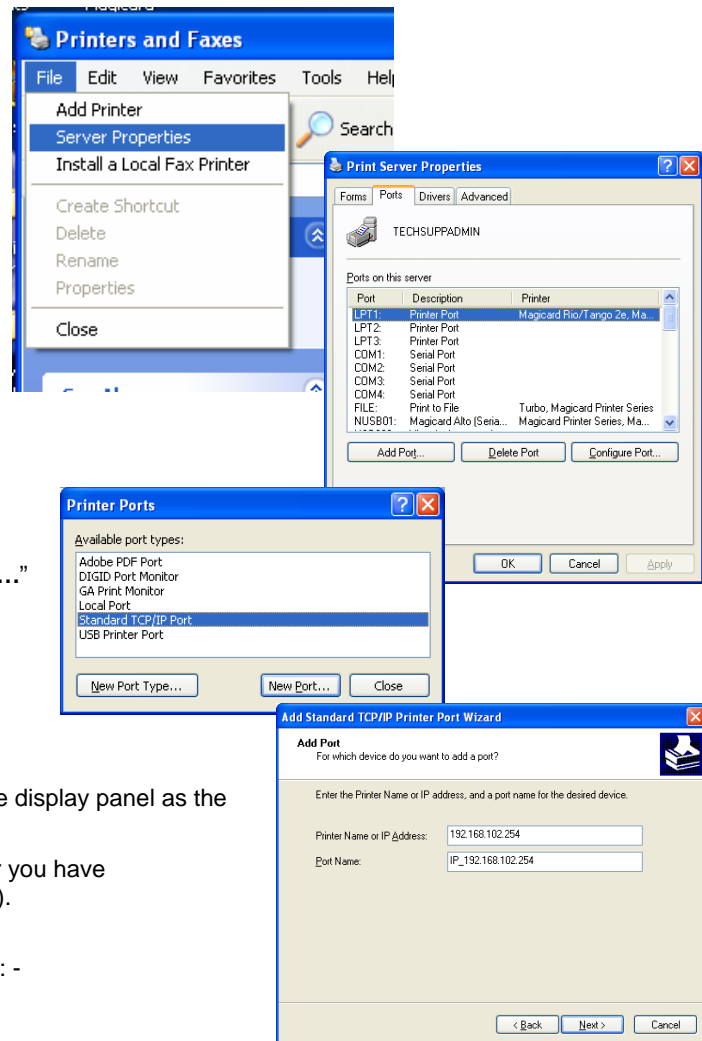
IP Address - 192. 168. 102. 254
Subnet mask - 255. 255. 0. 0
Default Gateway - 192. 168. 101. 1

(If these static address settings do not suit your network's requirements, they can be changed by using the Magicard Support Utility).

1. Ensure that the printer is **connected to a network connector** and then **switch it on**.
2. **Watch the printer's display panel carefully** - as the printer initialises it will detect the network connection and will display its IP address (e.g. 192.168.102.110) - **make a note of the IP address displayed by the printer**.

On the user's PC, add a TCP/IP port :-

3. Go to "Start" >> "Printers and Faxes" >> "File" >> "Server Properties"
4. Go to the "Ports" tab and click on "Add Port ..."
5. Select "Standard TCP/IP Port" then click on "New Port ..."
6. Follow the Printer Port Wizard :-
 - Enter the IP Address of the printer (noted from the display panel as the printer initialised).
 - The Port Name will be entered automatically after you have entered the IP address (e.g. IP_192.168.102.254).
 - Caution - Do not change this name!**
 - When prompted to select the Device Type select : -
 Standard - "Generic Network Card"



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Installing to Ethernet (continued)

7. Load the driver CD ROM into the user's PC.
If the CD does not run automatically, click the start button, then click on "run". Type "D:\autorun" (where D is the drive letter for your CD drive), then press the return key.

The driver CD 'Splash Screen' will appear.
Select your printer model – **Rio 2e** or **Tango 2e**.

8. Select the "Install Software" option

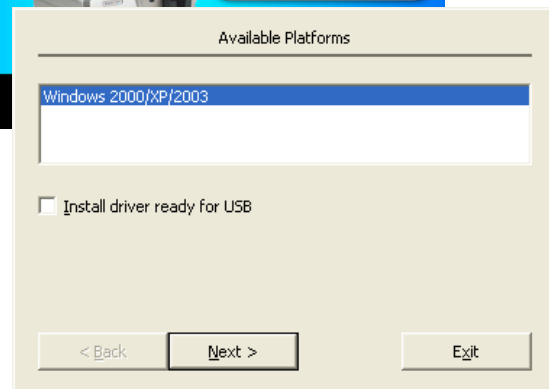


9. Then select the "Install Driver" option



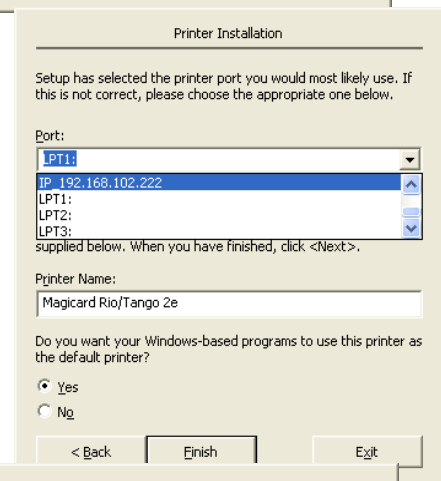
The driver installation will begin and the driver installation window will open.

10. Ensure that the "Install driver ready for USB" option is **NOT** selected, then press 'Next >'



11. Select the select the IP port you have just created, then press 'Next >'

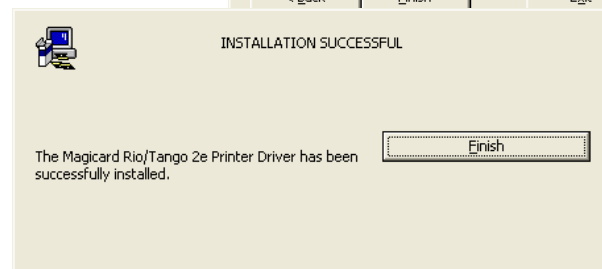
Now wait while the driver files are installed and registered.



12. On successful installation, select "Finish"

- It is recommended that you test the new driver installation by printing a Windows **Test Page** from the 'General' tab of the Printer Driver Properties – the Windows Logo should be printed in the centre of the card.

(Please see **Section 11 – Printer Driver Settings** – for a detailed explanation of each setting).



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

3. Choosing the right Dye-Film Ribbon

- **LC1** dye-film is the appropriate choice for colour printing with both Rio 2 and Tango 2 printers.
- **LC8** dye-film, for the Tango 2 models only, is more economic when printing in colour on one side and black on the other.
- **LC6/LC3** dye-film - where cost is critical, monochrome printing is a fraction of the cost of colour printing.

The table below is a guide to selecting the best dye-film to use for any intended application.



Your Printer ⇕	Full colour cards or monochrome	Ribbon Choice	Cards Per ribbon	Ribbon Panel layout	Part Number
Magicard Rio 2e & Tango 2e & Tango +L	Full Colour	LC1	350 one side only	YMCKO	M9005-751
	Monochrome: Black Red Blue Green Gold Silver White	LC3	1000 one side only	K	M9005-753 M9005-753-1 M9005-753-2 M9005-753-3 M9005-753-5 M9005-753-6 M9005-753-7
	Black & Overcoat	LC6	600 one side only	KO	M9005-756
Magicard Tango 2e Duplex	Colour front & Black back	LC8	300 front & back	YMCKOK	M9005-758
	Colour front & color back	LC1	175 Front & Back	YMCKO	M9005-751

Ribbon Panel Layout Key: Y=**yellow**, M=**magenta**, C=**cyan**, K=**resin**, O=**overcoat (No Colour)**

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

4. Loading the Dye-Film Ribbon

1. Open the top cover by pushing down on it and operating the release catch on the top of the printer.
2. Remove the used dye-film by gently pulling both spools upwards until disengaged from the clips. Take care not to bend and break the clips.
3. Open a new roll of dye-film.
4. Place the loaded spool into the rear clips and press it into place. The orientation is correct when the barcode on the end of the spool is on the left. Rotate the dye film roll to allow the core to lock into position.
5. Place the empty take up spool into the front clips, and adjust the film tension so that the film is lying flat and straight between the two spools.
6. Gently close the top cover until it clicks into the closed position. The printer will automatically recognize the type of film that has been loaded and move it to the correct printing position.



5. Choosing the right Lamination Film (Tango +L Only)

Your Printer ↓	Lamination Film Type	Cards Per Film	Part Number
Magiscard Tango +L	Clear Patch 0.6mil Laminate Roll	255	M9007-231R
	Clear Patch 1.0mil Laminate Roll	255	M9007-230R
	Clear Patch 0.6mil Laminate Roll With Chip Cut-Out	255	TBA
	Holographic Overlay Laminate Roll With Globes Design	500	TBA
	Custom Holographic Laminate Roll Both Patch & Overlay Types Can Be Supplied	255/500	Ask For Details

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

6. Loading the Laminate Roll

Types Of Laminate Roll

The Tango +L printer uses two types of laminate film:

Patch Laminate – This type of laminate roll places a patch on the surface of the card it will leave a small border around the patch (typically 1-2mm). The roll comes in 0.6mil and 1.0mil thicknesses and can incorporate a holograph. Custom holographic designs are available upon request. Contact your dealer for details.

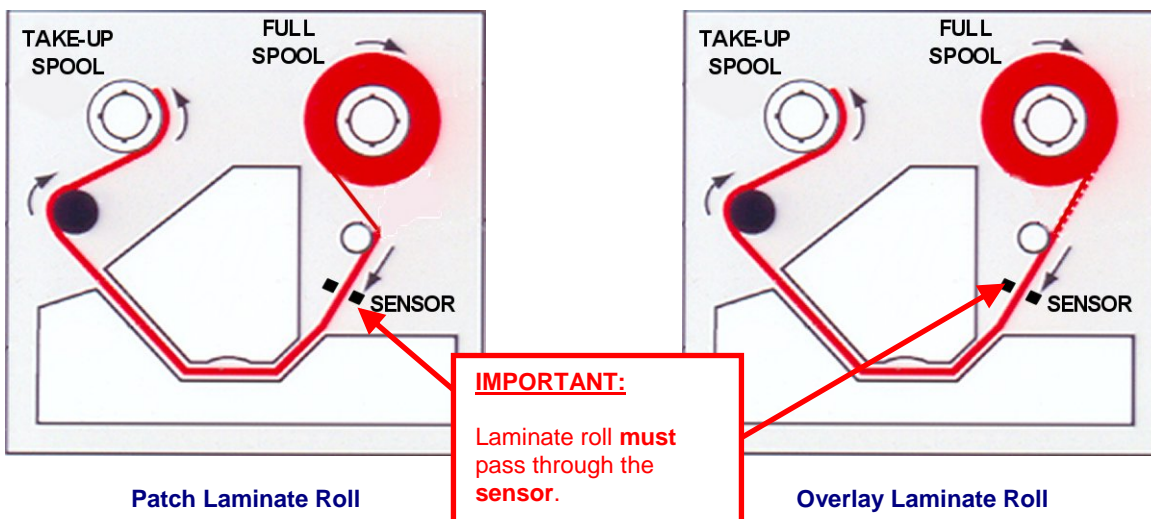
Overlay Laminate – This type of laminate roll covers the full card surface from edge to edge with a thin protective film. It can also incorporate a holograph. Custom holographic designs are available upon request. Contact your dealer for details.



Details of how to replace both types of laminate roll are shown below. Follow the instructions for your roll type.

Load the laminate roll into the laminator following the diagram **below** for your laminate film type (either **Patch** or **Overlay**). Make sure both spools are pushed fully towards the back. The free end of the film can be fixed to the take-up spool with a small piece of adhesive tape.

IMPORTANT: When loading **Patch** type laminate roll, ensure the index marks are towards the **BACK**. Make sure the film passes through the sensor.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

7. Choosing the right Cards

Card Material

Not all white plastic cards are the same. For best image quality always use high quality video grade PVC cards. Pure PVC card stock or laminated PVC/polyester cards are available. The latter are more durable and better suited to heavy use and heat lamination when required. For access control and smart card applications, your dealer should provide the appropriate type for direct to card printing. For good consistent results, stick to a single variety of good quality cards, such as those available from your Magicard dealer.

Card Size:

- Standard (CR80) = 3.375" x 2.125" (86.5 mm wide x 53.98mm high).

Card Thickness:

- | Rio 2e/Tango 2e | Tango +L |
|------------------------------|----------------------|
| • Minimum - 0.020" (0.51mm) | 0.030" (0.76mm) only |
| • Standard - 0.030" (0.76mm) | 0.030" (0.76mm) only |
| • Maximum - 0.063" (1.60mm) | 0.030" (0.76mm) only |



To obtain good quality prints the card must be:

- Glossy white.
- Free from dirt and grease.
- Free from surface contamination.
- Free from pits and bumps in the surface.
- Free from burrs at the edge of the card.
- Completely flat.

Printable area of the card:

Both the Rio and Tango printer offer high quality edge to edge (full bleed) printing. Thus the surface of the card may be printed edge to edge.

Dye cut PVC cards typically have an edge roll off (bevel) which can result in a fine white line around the edge of full bleed printed cards. When setting up your card design using your graphics software on your PC, you should use a maximum page size of 1026 pixels (3.45"/87.5mm) x 642 pixels (2.13"/54mm)

Self-Adhesive Cards

We recommend only self adhesive cards supplied by Ultra Electronics via your Magicard dealership. There are many different types of self-adhesive cards. Thorough investigation and testing has shown that poorer quality or incorrect card types will cause problems in the printer. These problems range from poor image quality, failure to feed from the card hopper and dye-film being cut through to cards getting jammed in the roller mechanism.

Contact Chip Cards

Smart cards must conform to the ISO 7816 specification, with the chip contacts being below the surface of the card. It is unwise to print graphics or text directly adjacent to the chip as image quality may be affected.

For encoding of contact chip cards, a set of pins connects the card chip contacts to a connector on the rear of the printer. This enables the transfer of data from the computer or encoding hardware.

You can encode smart cards while in the printer prior to printing the image, so that it becomes a continuous operation. The printers' firmware has commands to enable software to position the card, allow encoding from an external source and subsequent printing of the related image.

Contactless (Proximity) Chip Cards

Proximity cards must be completely flat with no sign of the chip or antenna being visible in the surface of the card. One of the benefits of your Magicard printer is that contactless cards can be encoded (written to) at the same time as being printed. A communication unit in the printer connects to a connector on the rear of the printer.

This enables the transfer of data to and from the computer or encoding hardware.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

8. Laminating Cards

Suitable Card Types

The table below contains information on some typical card types and their suitability for laminating.

Card type	Suitable for lamination?	Comments
PVC Self-Adhesive.	No	Self-adhesive cards are not suitable for laminating. They may be printed on the Tango +L, but must not be laminated.
PVC Thickness 0.030" (0.76mm)	Yes (one side only)	Cards can be successfully laminated on one side. Double-sided lamination should be avoided however as the extra heat distorts the cards. (Choose PVC/PET composite cards or laminating both sides)
PVC/PET Composite Thickness 0.030" (0.76mm).	Yes (both sides)	This type of card can be printed and laminated on both sides. This is due to the improved thermal stability of the PVC / Polyester material.

Laminator Profiles

The driver has preset profiles for different card and laminate type. Choose the profile which best matches your own circumstances.

Roller Temperature	110	°C
Card Speed	4	mm/s
Pre-Lamination Delay	500	ms
Lamination Length	86	mm
Start Offset	0	50th
End Offset	16	mm
Film Type	Patch Film	

Parameter Adjustments

Temperature, speed and other adjustments can be changed as requires to achieve satisfactory card lamination. After adjustment any changes can be **saved** as a **custom profile** and recalled whenever needed.

Minimum Card Thickness

Cards should be a minimum of 0.030" (0.76mm). Thinner cards can be distorted by the amount of heat required to laminate them.

Lamination Temperature / Speed

Start with the preset profile for your card and laminate type. If after lamination the laminate patch or overlay is peeling from the card, **increase** the **roller temperature** or **decrease** the **card speed**. If the cards are being distorted after lamination then **decrease** the **roller temperature** or **increase** the **card speed**.

See page 27 of this document for further details.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

9. Loading the Cards

1. Lift the card feed hopper vertically until significant resistance is felt, then tilt it backwards until it comes to a stop at an angle of about 30°.

(If it is necessary to completely remove the card feed hopper for any reason, simply lift it again while it is held at this angle.)



2. Open a clean pack of cards.

(Ensure they are not electro-statically charged and sticking together).

Avoid touching the card surfaces as finger oils will degrade the image quality.



3. Tilt the hopper forward to the vertical position, and lower all the way down until it is completely within the body of the printer.

(For loading Mag Stripe or HoloPatch cards see box on the left.)



Loading Magnetic Stripe Cards

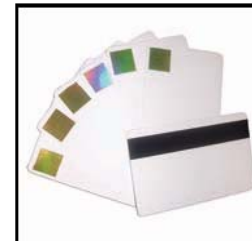
Make sure the stripe is on the right and underneath when viewed from the front of the printer.

Loading HoloPatch® Cards

The standard position gold foil patch on the cards should be on top, and on the right-hand side when viewed from the front of the printer.

Loading Infra-Red Barcode Cards

The black edge must be on the right-hand side when viewed from the front of the printer.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

10. Cleaning your Printer

Cleaning is Important

- The **most important thing** you can do to **ensure card print quality** and the **ongoing reliable operation** of your printer is to **perform regular cleaning cycles** to remove dust and debris from the print rollers.
- Plastic cards attract dust. Dust then gets 'printed' into the card surface causing unsightly blemishes and **possible damage to the printhead**.
- Your Magicard printer has built-in cleaning rollers to remove dust from the card stock. These rollers **need to be cleaned** periodically to remove the dust and debris accumulations.



Cleaning is Easy and Inexpensive

If you have not already done so, **order a cleaning kit** – see the 'Cleaning Supplies' box on the next page.

- A clean printer produces better quality cards, as dust and dirt are not present when the card is being printed.
- A clean printer is much less likely to require factory maintenance, and the print head in your printer will last for many years of normal use. Remember, large particles of dirt can damage the printhead.
- Magnetic encoding suffers when rollers are not clean.

The Magicard Cleaning System

There are three main parts to your printer's cleaning system - a Cleaning Card, a Cleaning Roller and a Cleaning Pen:

1. You use a Cleaning Card to remove dirt from the print path. This should be used after every 350 prints (every time you replace your ribbon). If you print only a few cards a day, we recommend that you clean the printer more often.
2. There is a disposable Cleaning Roller in the printer, which should be replaced after every 1000 prints (roughly after using 3 rolls of ribbon).
3. There is also a Cleaning Pen, which is used to clean the printhead. We recommend you use this if any lines are seen on printed cards.



To clean your printer, follow the three main steps below.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Cleaning Supplies

Three cleaning cards and a cleaning roller are bundled with each new Rio 2 or Tango 2 printer. **You can purchase additional cleaning kits**, which include cleaning cards, rollers and pens.

Cleaning Kits for Europe, Middle East, Africa & Asia

- Part # M9005-761 - 10 cleaning cards, 5 rollers and a cleaning pen.

Cleaning Kits for North and South America

- Part # N9005-761 Medium - 10 cleaning cards, 3 rollers, and 2 cleaning pens.
- Part # N9005-761 Large - 20 cleaning cards, 6 rollers, and 3 cleaning pens.

Step 1. Every 350 Prints or Sooner –

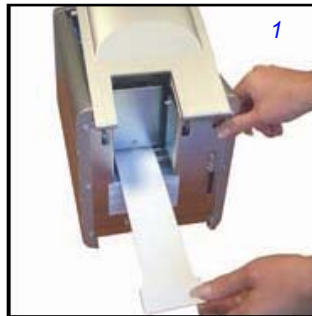
Using a cleaning card

We recommend that you clean your printer using a cleaning card after every **350** prints or each time you replace the dye-film. You should do this more often if you print only a few cards a day.

To clean the card feed mechanism:

- The printer must be switched ON.
- Remove the card hopper and open the top door (the red light comes on).
- Ensure the dye film is not touching the base of the printer inside. If it is, take up the slack by winding the supply spool backwards or remove the dye film before starting the cleaning cycle.
- Take a fresh cleaning card from its packaging.

- Insert the narrow end into the card feed slot (*picture 1*).



- Press the black button on the back of the printer (located above the USB connector). The card is drawn into the printer (*picture 2*) and then ejected. Repeat this several times with both sides of the same card.



- To ensure that the rear feed rollers located under the card hopper are thoroughly cleaned, set the printer to its cleaning cycle, and instead of inserting the card, simply hold it against these rollers (*picture 3*).



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Step 2. Every 1000 Prints -

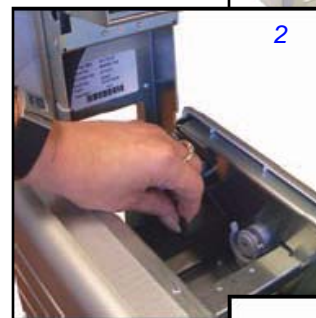
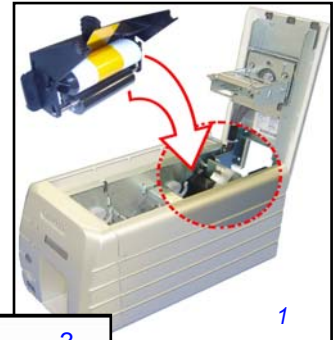
Changing the cleaning roller

There is a **cleaning cassette** inside the printer which holds a **cleaning roller** (*picture 1*). We recommend that this roller is replaced after every **1000 prints**, or **sooner** if it looks dirty.

You re-use the cassette, and you replace the roller within it.

To replace the cleaning roller:

- Switch off your printer.
- Open the top cover. Locate the black cleaning cassette towards the rear of the internal compartment.
- To remove the cleaning cassette, hold it between thumb and forefinger by the tab on the top of the cassette (*picture 2*). Push down lightly on it, and then lift it out.
- You now have the cassette and roller assembly out of the printer. This is a two roller assembly. The bottom roller is permanent and the top (larger) roller is disposable (*picture 3*).
- Remove the used roller from the cassette (*picture 4*).
- Take a **new roller** and **remove the protective white** cover from around the roller.
- Insert the new roller into the cassette, **ensuring** that the **two small springs** are **above** the tacky roller, pushing it against the bottom roller.
- Insert the cassette back into the printer ensuring it is seated correctly.

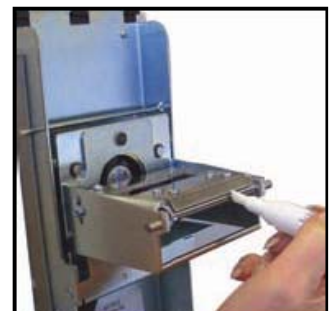


Step 3. Cleaning the Printhead

You should clean the printhead if any lines are seen on printed cards.

To clean the printhead:

- Use the special **printhead cleaning pen** from your Magicard printer cleaning kit. See 'Cleaning Supplies'.
- Open the printer and draw the pen several times across the length of the printhead.

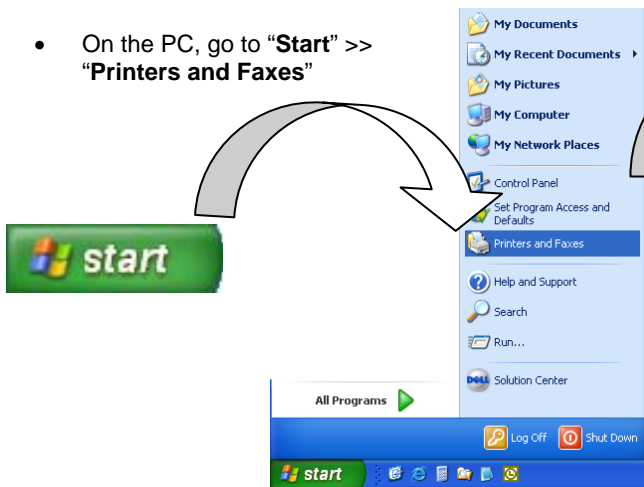


RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

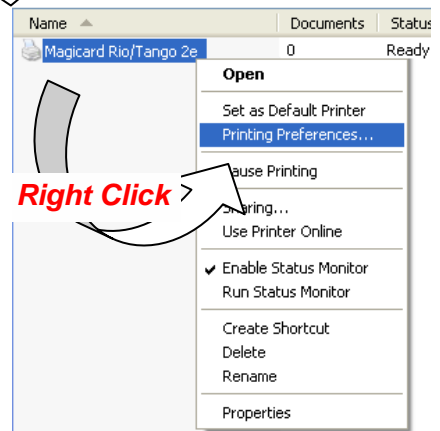
11. Printer Driver settings

To access the Printer Driver Settings :-

- On the PC, go to "Start" >> "Printers and Faxes"



- Right mouse click on the Magicard Rio/Tango 2e printer and select the "Printing Preferences..." option.

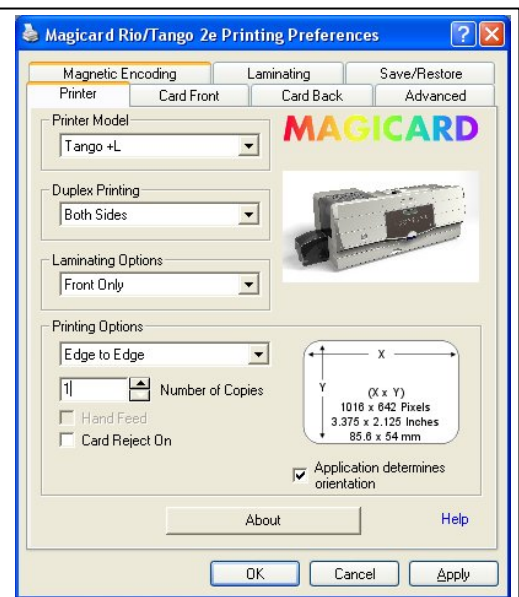


The Printer Tab

Shows which model of printer you are using by displaying a picture and the model name.

The **Printer Tab** will display a diagram showing which card dimensions are compatible with your printer model, and displays the Printing Options that are related to your printer model such as Number of Copies, Hand Feed, Magnetic Encoding Verify and Encode Only.

The individual settings of the **Printer Tab** are explained in detail below.



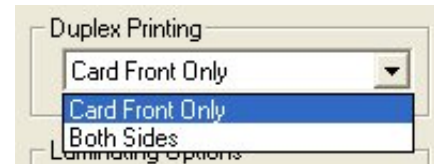
RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Duplex Options:

Use the Duplex Options for selecting single or double sided printing.

Card Front Only:

The printer will only print on the front (upper) surface of the card; this option is default for Rio printers.



Both sides: This option applies to the Tango 2e & Tango +L printer models only.

If a **2-page document** is printed, the printer will print the first page on the front of the card, **flip the card over** and print the second page on the **back of the card** thereby printing on both the front and back of the card in a **single print cycle**. This option is default to Tango printers and is **unavailable to Rio printers** (because the Rio printer is incapable of flipping cards).

Laminating Options: This option applies to the Tango +L printer model only.

Use the Laminating Options to select card front, card back, or double-sided lamination.

None:

The lamination unit on the printer will not be used.

Front Only:

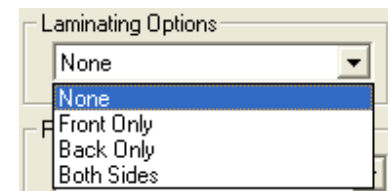
The printer will only laminate the front (upper) surface of the card.

Back Only:

The printer will only laminate the back (lower) surface of the card.

Both Sides:

The printer will laminate both front (upper) and back (lower) surfaces of the card.

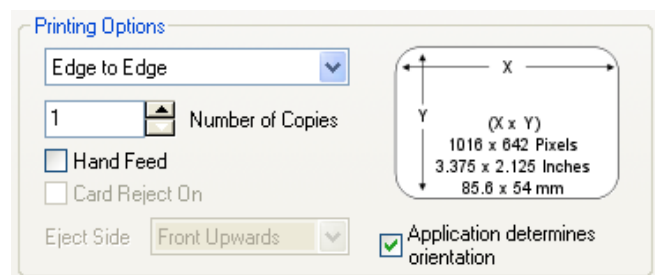


Printing Options:

Within **Printing Options** there are two types of card format that can be selected, either **Edge to Edge** or **White border**, with Edge to Edge the printer will print a card design over the **full surface of the card**, whereas White Border will leave a **small white border around all four edges of the card**, select the option which is most desirable.

Number of Copies:

Controls the number of times the image is printed when you send a card design to the printer, for example if you set the **number of copies** to '5' and send a single card design to print, the printer will produce 5 identical cards. The **default value** for this option is '1'.



Hand Feed: This option applies to the Rio 2e printer model only.

When enabled, the printer will accept cards fed by hand into the **front entrance of the printer** instead of feeding cards from the card hopper at the rear of the printer; this option is **disabled by default**.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Printing Options Continued:

Card Reject On: This option applies to the Tango 2e & Tango +L printer models only.

When enabled, if a card fails to **encode** (during magnetic or proximity encoding) it will be placed in a separate **Reject Hopper** instead of the main card output hopper. Because this option requires the use of the flipper mechanism it is unique to the Tango.

Eject Side: This option applies to the Tango 2e & Tango +L printer models only.

Determines which side of the printed cards is facing upwards when ejected into the **output hopper**, by default the option is set to **Front Upwards**.

Application Determines Orientation:

Almost all software applications provide the user with options to determine page orientation - **landscape or portrait** - when printing.

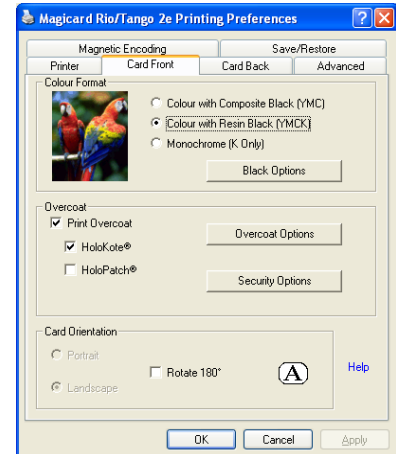
If your application provides these options – leave the **Application Determines Orientation** box ticked.

If your application is one of the few that do not provide these options – un-tick the box and choose your desired orientation in the **Card Front** or **Card Back**

(Tip: the orientation options can usually be found in the 'page setup' or 'badge design' sections of you software application)

The Card Front & Card Back Tabs

Use the **Card Front and Back tabs** to determine how the **front** and **back** of a printed card will be produced. There are a variety of options that will allow detailed **customization** of ID cards - the **colour format** of printed images, **overcoat security** options, and **orientation** of the printed images.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Colour Format

There is a small picture of two parrots, this shows the effects the selected **colour format** will have on the printed images; if the picture of the parrots is in colour you have your printer setup to print **full colour** images, if the parrots are black and white then your printer is setup to print in monochrome only.



Colour with Composite Black (YMC):

When enabled you will be able to print full colour images, and any areas of your card design that are black (RGB value **0,0,0**) including black text and barcodes will be printed with **Composite Black**.

This means that black areas are printed using a **combination** of the **Yellow, Magenta and Cyan** colours from the dye-film ribbon. Use this option if you are printing an image that contains photographs with black areas and your design does not use much black text and you want to keep your printing speeds as fast as possible.

Colour with Resin Black (YMCK):

When enabled you will be able to print full colour images, and any areas of your card design that are black (RGB value **0,0,0**) will be printed either as a **composite** of the 3 colour panels or **directly** from the **resin black panel**.

There are a number of **Black Options** available for the user to select which parts of the image should be printed with the **resin black panel** - these options should be **experimented** with, as both the **definition** and **intensity** of the **black** can be **varied**. Use this option if your card design uses **barcodes** and/or a lot of black text. The printer will use the resin panel to produce **crisp and clear barcodes and text**.

Monochrome (K Only):

This option must be selected if a monochrome dye film (LC3) is being used.

When enabled, **all images** will be printed in the **single colour resin**. Use this option if you want to photocopy your card design, or if your card design only contains black objects and text, or you are using a **Resin-only dye film** and you want a fast and economical print cycle.

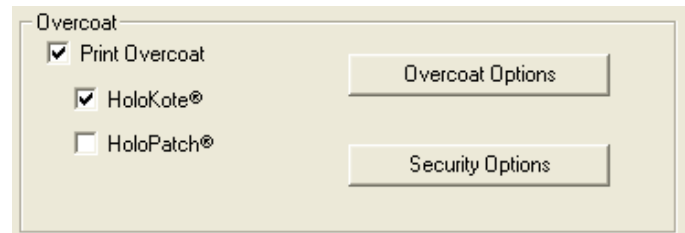
Black Options button:

Click on the **Black Options** button to configure how your printer handles the printing of designs that contain **black** (with a RGB value of 0,0,0). Advanced black options are **not available** if your colour format is set to **Colour and Composite Black (YMC)**.

Overcoat:

Print Overcoat:

When enabled, a **thin transparent layer** of Overcoat will be applied to the card design at the **end of the printing process**. This overcoat **protects** the printed image **from fading and scratching**. Applying overcoat to a card design does not add any more cost to the printing process, and it is **enabled by default**. If it is disabled you will be **warned** about removing the protective layer, the only benefit of disabling Overcoat is a minor increase in print cycle speed but it is **not recommended** due to the **loss of protection**.



When **Print Overcoat** is **enabled**, the areas of the card that are protected by overcoat can be configured by clicking on the **'Overcoat Options'** button.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

HoloKote™:

When enabled, an **anti-copying watermark** is printed across the entire card surface in a 4 x 6 grid (24 evenly spaced icons that are 158 x 149 pixels in size). This watermark becomes visible when the card is viewed at an angle. The patented **HoloKote™ anti-forgery** card protection **eliminates** the threat from **fake IDs** and is **standard** on all Rio 2 & Tango 2 models. There is **no additional cost** involved in printing **HoloKote** cards. There are two internal designs or you can use a 'custom' security logo (e.g. your company's logo) by purchasing a **Custom Key**.

HoloPatch™: This option is **not** available in the Card Back tab.

HoloPatch should only be enabled when you are printing on special HoloPatch cards - these have a blank holographic foil patch in the top right corner of the card. When enabled, one of the HoloKotesecurity logos is highlighted by the highly reflective gold 'super-diffuser' patch, making the logo clearly visible under all lighting conditions. HoloKote™ with HoloPatch™ has a similar appearance to credit card hologram patches.

To learn more about these security features please visit the Magicard website:

<http://www.ultramagicard.com/products-advantages-security.html>



An example of a card with HoloKote™ + HoloPatch™ enabled

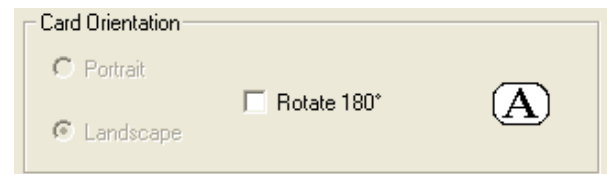
Card Orientation:

Landscape/Portrait:

These options will be disabled if the **Application Determines Orientation** selection is ticked in the **Printer Tab**.

If your software application is one of the few that does not provide the user with options to determine page orientation (**landscape or portrait**) when printing. – untick the **Application Determines Orientation** box and choose your desired orientation here in the **Card Front** or **Card Back** tabs.

(Tip: the orientation options can usually be found in the 'page setup' or 'badge design' sections of you software application)



Rotate 180°:

When selected, the card design will be **rotated by 180°** when printed onto the card. This option is deselected by default.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Black Resin Options:

Halftoning (Monochrome Only):

If printing with **Monochrome** dye-film ribbon, you first **must** select the **Monochrome (K Only)** option in the **Card Front/Card Back** tab; this enables these **Halftoning** options.

There are two **Halftoning** options available – they determine how the printer driver translates **colour images into black and white**. Select the option that works best with your card design, if your card design has two colours only (black and white only) then changing the Halftoning options will not have an effect. Error diffusion is the **default** and **recommended** option as it produces the best results.

All Black in image is printed with:

This option enables the user to select which of the **black** parts of the image should be printed with the **resin black panel**. They should be **experimented** with, as both the **definition** and **intensity** of the **black** can be **varied**.

By default all black objects will be printed in **Resin Black** except areas of black in **pictures**.

It is **not recommended** disabling the 'Pictures use YMC only' option if your card design has **photographs** on it.

It is **possible to configure** whether objects such as **barcodes and text** are printed using **Resin Black** or **Composite Black**, to do this, select **YMC** in the 'All Black in image is printed with:' drop down list.

Three options will be enabled:

Mono bitmaps use K-Resin:

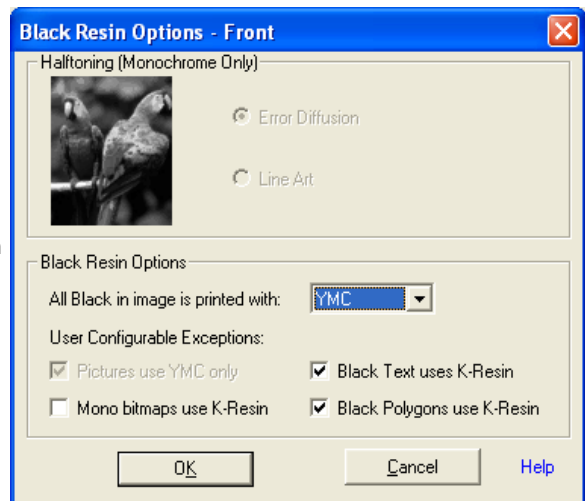
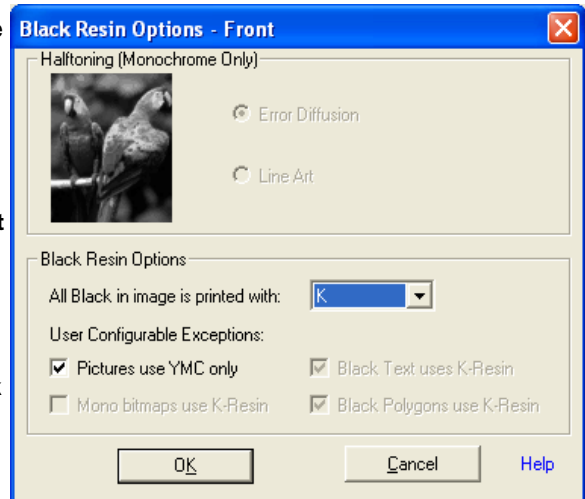
Mono (monochrome) bitmaps are pictures formatted to contain only black (RGB value of **0,0,0**) and white (RGB value of **255,255,255**). Many ID badging applications generate barcodes as monochrome bitmaps, so when enabled, barcodes will be printed in resin black. This **improves clarity** and makes barcodes **easier to read** with conventional barcode scanners.

Black Text uses K-Resin:

When enabled, all black (RGB value of **0,0,0**) **text** in your card design will be **printed in Resin Black**. This **improves clarity** and is **highly recommended** if your card design uses black text or 'True Type' **Barcodes**. This option is enabled by default.

Black Polygons use K-Resin:

When enabled, all black (RGB value of **0,0,0**) **Polygons** (simple shapes such as **squares, triangles** and **rectangles**) in your card design will be printed in **Resin Black**. This **improves clarity and contrast** of the polygons. This option is enabled by default.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Overcoat Options:

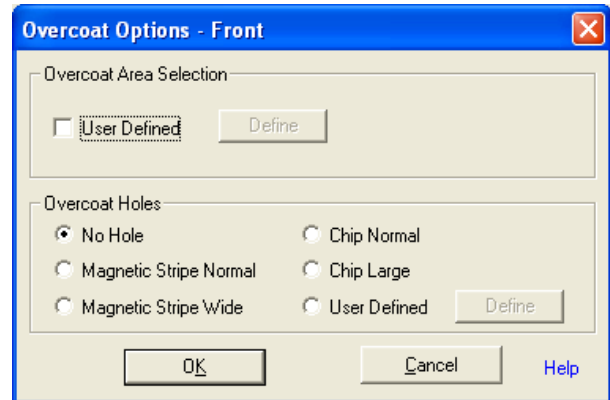
By default the printer will print the **transparent protective overcoat** layer over the entire surface area of the card. The **Overcoat Options** window provides advanced controls for **customising** the size and position of the **area covered**, and to **insert 'holes'** (of no overcoat) into that overcoat area.

Overcoat Area Selection:

When enabled, the **User Defined** option gives access to the **overcoat area definition window**; click on the **'Define'** Button to access these options.

Overcoat Holes:

An **overcoat hole** is an area on the card that will have **no overcoat** printed on it. A variety of **pre-set Overcoat Holes** can be selected for use with **magnetic stripe** and **smart chip** cards. (The holes will conform to the ISO standard positions). Alternatively, the **User Defined** option provides advanced controls for creating **customised overcoat holes**, click on the **'Define'** Button to access these options.

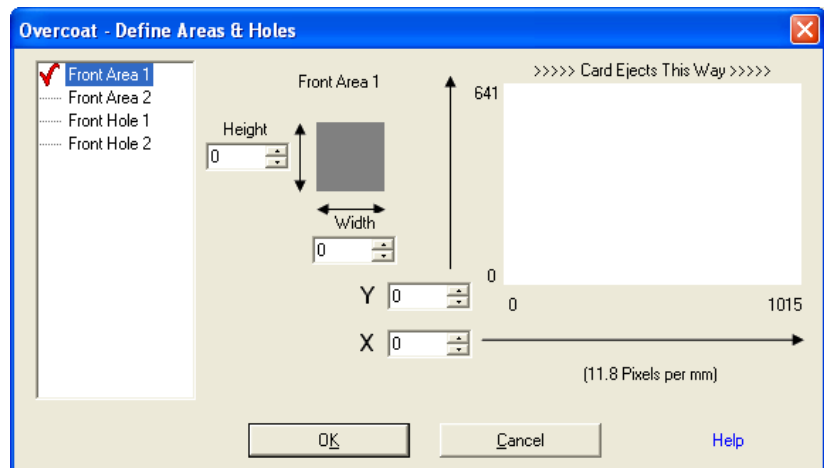


Overcoat – Define Areas & Holes:

User Defined Overcoat Areas & Holes are created by entering the **size** and **position** of the **coverage area or hole**. It is possible to define up to **2 Overcoat Coverage Areas** and up to **2 Overcoat Holes**, these will appear in a preview window in the right hand side, **Areas** will appear as **Grey polygons** and **Holes** will appear as **Black polygons**.

Defining a custom coverage area (or hole):

- 1) Select one of the available **Profiles** from the list on the left side of the window - its details will be displayed on the right side along with a preview.
- 2) **Define** the **size (height and width)** of the required **coverage area (or hole)** and it will be displayed as a rectangle in the preview window - use this rectangle to gauge the height and width values correctly.
- 3) **Move** the rectangle to the **required position**. Positioning is based on a **grid reference** using an **X** (left/right) and **Y** (up/down) axis and moving in units of pixels (Tip: there are 11.8 (approx. 12) pixels per millimetre (mm)). Use the preview as a guide while increasing/decreasing the **X** and **Y** values.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Security Options:

HoloKote™ is a **high security** system that ensures cards cannot be **cloned**. This special feature automatically prints a high security **watermark** into the overcoat panel during the print cycle without incurring **extra** consumable costs. With the Rio \ Tango 2e, the HoloKote pattern can be **customised** to your logo and text.

HoloKote™ Watermark Selection:

The **Watermark Selection** options present two different **HoloKote™** Designs. Either can be chosen and be applied to the printed cards; the **UltraSecure™** logo is selected by default but can be changed by clicking on the option button of the alternative **Interlocking Rings** design.

SecureShield™:

CAUTION: this option should only be enabled if you use a laminator in conjunction with your regular printer, if you do not use a laminator then you should leave this option disabled. **SecureShield** will perform in a similar way to **HoloKote** in that it will print a **4 x 6** grid of graphic icons onto the card, but unlike **HoloKote** it will **not** print the **overcoat** between the graphics, this is done so that the **HoloKote** watermark is clearly visible through the laminate film and so that the laminator film on the Sicura can **stick** to the printed card more effectively.

Disable Custom Key:

The disable custom key option is intended for users who have purchased their own custom **HoloKote™** dongle. Select this option to print cards without applying the custom logo to the card design. This option is disabled by default.

HoloKote™ Watermark Rotation:

The **HoloKote™** design can be rotated when it is printed regardless of whether it is an in-built design or a custom design stored in a dongle, using the drop down list the logo can be rotated in increments of 90°. **No rotation** is selected by default.

HoloPatch™:

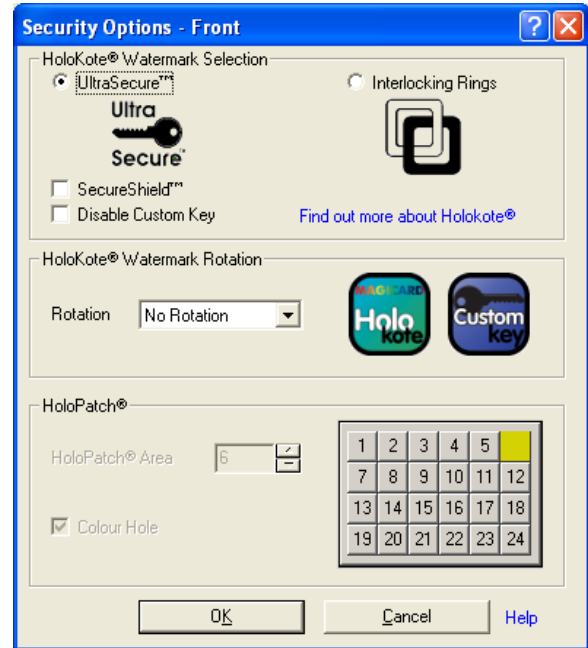
HoloPatch™ works with **HoloKote** to produce a **highly visible** gold seal on the card, printed using special card stock. **These options are not available in the 'Card Back' tab.**

HoloPatch™ Area:

The **HoloPatch** area selection option can be changed from **1 to 24**. Each number corresponds to a different position on the **grey grid** to the right, and causes the printer to place a **HoloPatch logo** at that location on the card. This should be selected to match the location of the **gold HoloPatch foil square** attached to the **unprinted HoloPatch™ card stock**.

Colour Hole:

When enabled, the **Colour Hole** option will prevent any colour from being printed over the **gold HoloPatch foil square** attached to the **HoloPatch™ card stock**. This option **improves HoloPatch clarity** and **appearance** when printing card designs with colour over the entire area of the card.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

The Laminating Tab: (This option is only available on the Tango +L)

The **Laminating Tab** allows the customization of some of the lamination unit parameters. You can also load and save custom profiles allowing simple changeover between different card materials, etc.

Laminate Only

This option will make the Tango + L bypass the printing stage and laminate the card, this option can be used to laminate cards that have already been printed providing that they do not have an overcoat or laminate layer already applied to them.

Profile Name

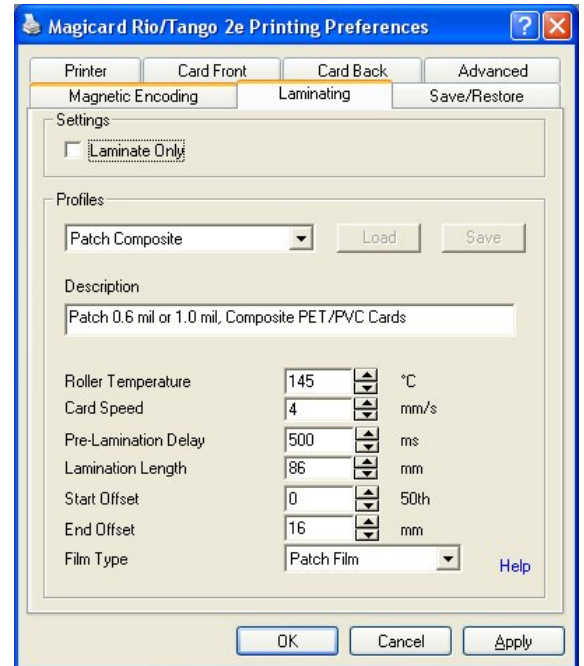
A list of pre-set profiles that have been setup by the manufacturer, it is possible to create additional profiles by selecting 'custom profile'

Load & Save

The load and save buttons are only available if 'custom profile' is selected from the profile name list. The save button will save all current laminator settings to a .LMP file in the location chosen by the user, the load button is used for loading any .LMP files that have been saved. This function is useful for transferring settings between driver versions and different PC systems.

Description

A line of text that describes the currently selected laminator settings profile, this text usually contains the type of cards and laminator film that should be used with the selected profile.



Roller Temperature	Adjusts the heated roller temperature of the laminator unit in degrees C. Low temperatures will result in laminator panel not adhering to the card. High temperatures can cause the card to distort due to excessive heat. It is recommended that only small adjustments are made. Adjustment is in units of 1°C.
Card Speed	Specifies how fast the card travels during the lamination process, increases or decreases overall lamination time. Low speeds can cause the card to distort due to excessive heat. High speeds will cause the card to receive insufficient heat to adhere to the laminate, it is recommended that only small adjustments are made. Adjustment is in units of 1mm/s.
Pre-Lamination Delay	Specifies the length of time the laminator will pause after the card has been moved into position and before the lamination process commences. This allows time for the card to cool after the printing process. Adjustment is in units of 100ms (3000 = 3secs).
Lamination Length	Specifies the length of card that the heated roller will laminate onto. Adjustment is in units of 1mm.
Start Offset	Adjust the positioning of the laminate patch at the start of the card, Adjustment is in units of 1/50 th mm. (100 = 2mm)
End Offset	Adjust the positioning of the laminate patch at the end of the card. Adjustment is in units of 1mm.
Film Type	Select the type of laminate film that you have loaded, either overlay (hologram) laminate film, or patch (sequential) laminate film.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

The Advanced Tab:

The **Advanced Tab** allows the customization of some of the **advanced technical settings** related to **colour correctness** and **image positioning** on the printed card.

Colour Control:

The Colour Correction options provide software 'Gamma Curves' to correct for different characteristics of thermal printheads and dye-films. Three choices are available - **None**, **Gamma 1**, and **Gamma 2**. It is recommended that the setting is left on the default **Gamma 1** option (which gives more accurate colour reproduction).

ColourSure™ Printing:

When selected, ColourSure **slows** down the **speed of printing**. This **improves** image **quality**, especially when printing images with lots of **dark colours**.

Colour Adjustment:

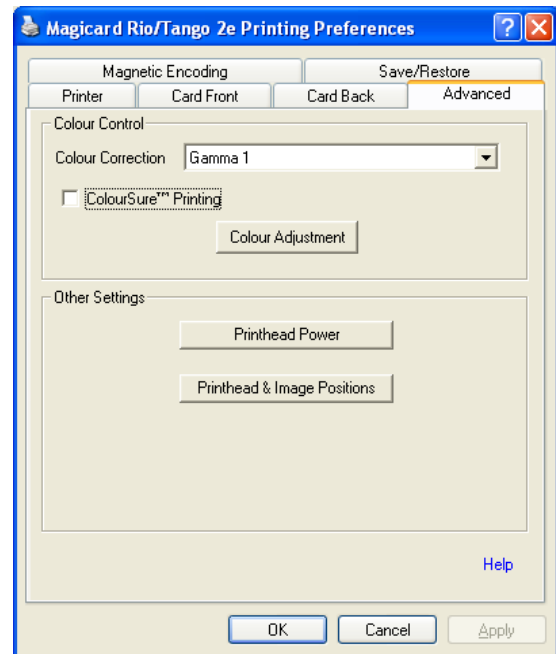
To change the **colour strength** of a printed card, or its **brightness**, **saturation** or **contrast**, click on the '**Colour Adjustment**' button.

Printhead Power:

Changing the Printhead power will **increase** or **decrease** the **density** of the colours that are printed on the card, to access the Printhead Power options click on the '**Printhead Power**' button.

Printhead & Image Positions:

To **alter** the **position** of the printed image on the card or **add / remove white borders** on a printed card design, click on the '**Printhead & Image Positions**' button



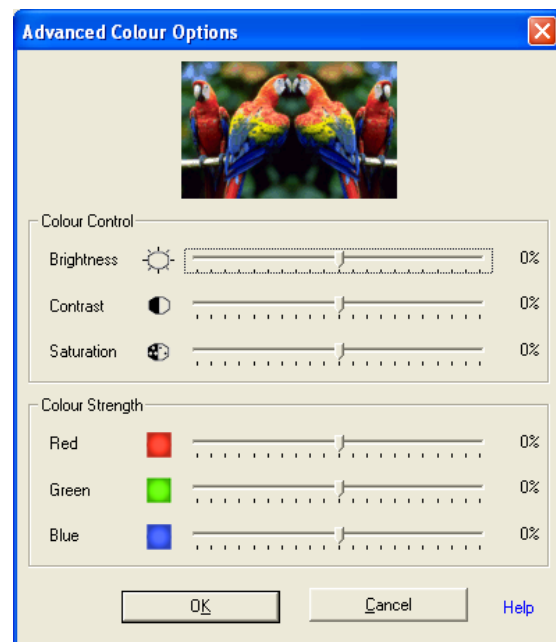
Advanced Colour Options:

To **alter** the **position** of the printed image on the card or **add / remove white borders** on a printed card design, click on the '**Printhead & Image Positions**' button.

The **Advanced Colour Options** provide controls for fine tuning the colour output of the printer. The card design can be **darkened**, **lightened**, made **brighter** or appear **faded**, even specific colour levels can be adjusted by changing the position of the **colour strength** sliders.

The **preview picture** at the top of the window will show the results of any adjustments.

Note: **All** colours in an image design are a mixture of red, green and blue (RGB). So any change in the strength of one of these 3 colours (RGB) will affect **every** colour that is composed using the changed colour, so the results may not be as expected; for this reason it is recommended that colour control and colour strength sliders remain at their default settings.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Printhead Power:

These options provide control over the degree of **printhead 'heating' power** applied to the cards and dye-film ribbon **during the printing process**.

Yellow, Magenta, Cyan (YMC):

An increase or decrease in the YMC Power will result in an increase or decrease in the colour density – images will be **darkened** or **lightened**.

Black Resin:

An increase or decrease in the Black Resin Power will result in an increase or decrease in the 'boldness' of black text and barcodes.

Overcoat:

An increase or decrease in the Overcoat Power will result in an increase or decrease in the visibility of the HoloKote anti-forgery images.

Caution: Very low Overcoat Power settings can cause side effects such as card images fading over time, and also negate the HoloKote® anti-forgery card protection system.

Caution: Very high settings of any of these Printhead Power sliders can cause side effects such as incorrect or distorted colours, breaking of the dye-film ribbon, and even damage to the thermal printhead.

Tip: In the event that the dye-film ribbon **breaks** due to **over-heating**, it can be repaired using **Adhesive Tape**; attach the broken section together and then wind up the **black take-up spool** by hand for roughly two full turns. Then, before printing again, **turn the printer off** and back on again and reduce the Power settings so the dye film does not break again.

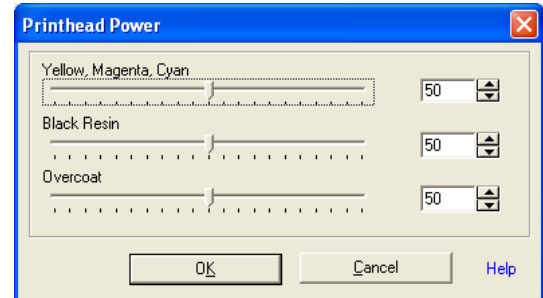


Image Position:

The **Image Position** options enable the user to make **small adjustments** to the **position** of the **printed image** on the plastic cards - this can be useful for **eliminating** unwanted **white borders**. All adjustments are with reference to the card viewed in **landscape**.

Up/Down:

Slider moved upwards: the image will move upwards on the card.

Slider moved downwards: the image will move downwards.

The adjustment is calibrated to: **12 steps = 1mm** (approx).

Image End:

Slider moved left: the End of the Image will move left (closer to the end of the card).

Slider moved right: the End of the Image will move right (away from the end of the card).

The adjustment is calibrated to: **12 steps = 1mm** (approx).

Note - The Image Start is unaffected.

Caution: Moving the Image End slider too far left can result in the image being printed beyond the end of the card – this will cut the dye-film ribbon.

Image Start:

Slider moved left: the Start of the Image will move left (away from the start of the card).

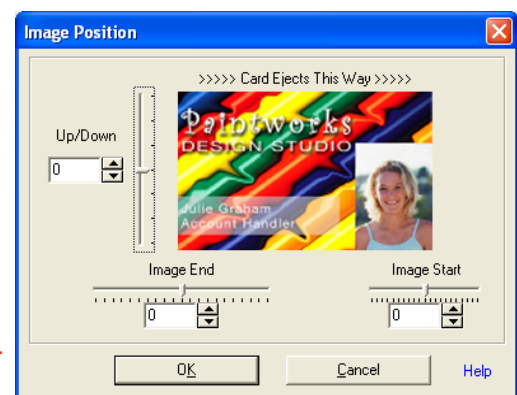
Slider moved right: the Start of the Image will move right (closer to the start of the card).

The adjustment is calibrated to: **10 steps = 0.1mm** (approx).

Note - Any movement of the Image Start position will have a corresponding effect on the Image End position.

Caution: Moving the Image Start slider too far right can result in the image being printed beyond the start of the card – this will cut the dye-film ribbon.

Tip: In the event that the dye-film ribbon **breaks** due to **printing beyond the edges of the card**, it can be repaired using **Adhesive Tape**; attach the broken ends together and then wind up the **black take-up spool** by hand for roughly two full turns. Then, before printing again, **turn the printer off** and back on again and change the Image Position settings so the dye film does not break again.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

The Magnetic Encoding Tab:

Magnetic encoding options only apply to printer models that have a magnetic encoder installed

Card Settings:

Encode Only:

This option will enable the user to carry out magnetic encoding from a badging application without printing the associated image, this is useful for encoding cards that are already in use. No dye film will be used.

Perform Verification:

When enabled, the printer will self-check (verify) all magnetic encoded cards prior to printing the image - to ensure that encoding has been successful.

Any unsuccessful cards will be re-encoded up to 3 times. If still unsuccessful, the card will be rejected and the printer will give an error message.

Performing verification will increase the time to print but it will improve encoding reliability. In the interest of speed this option is turned off by default.

Track Options:

Application Determines Encoding Settings:

When selected, the **format** of the magnetic encoding will be **determined by the users badging application**.

This option is recommended for users of proprietary badging applications.

Auto Insert Encoding Settings:

When enabled the format of the magnetic encoding will be determined by the following options:

Coercivity:

This is a measurement of a magnetic materials resistance to being magnetised. Set this option to match the **Coercivity** of your cards, either Low Coercivity (**LoCo**) or High Coercivity (**HiCo**) cards can be encoded. The coercivity your cards should be clearly labelled on the cards' packaging.

Bits per Char:

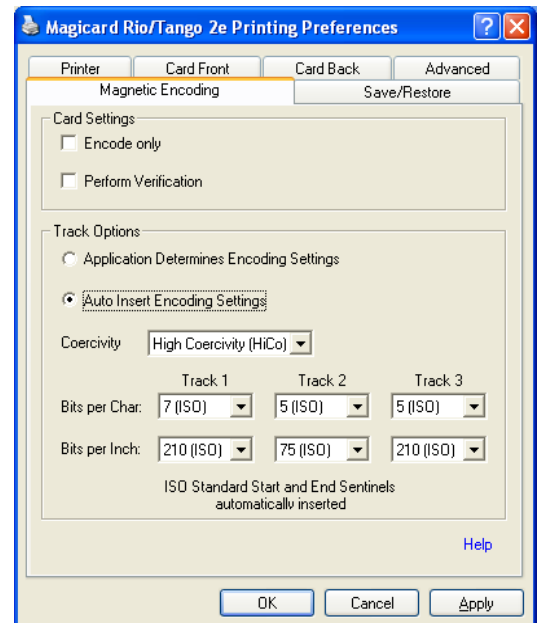
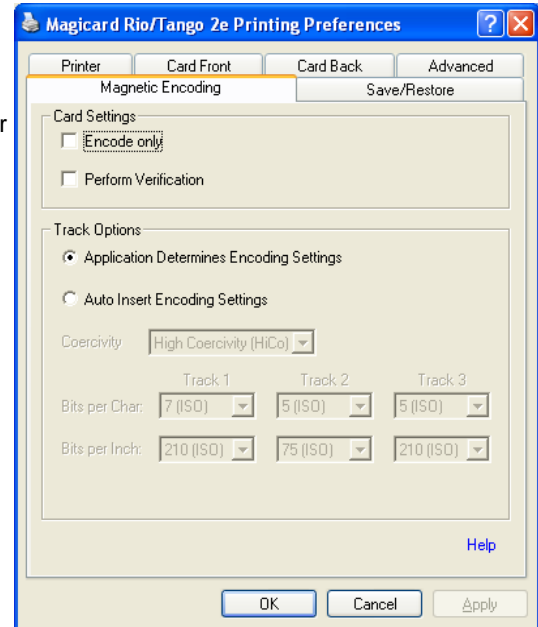
Use these drop down lists to select how many **binary bits** should be used to encode **each character** of magnetic data. The **recommended** standard **ISO** settings (International Standards Organisation) are:-

- Track 1** - 7 Bits per Character
- Track 2** - 5 Bits per Character
- Track 3** - 5 Bits per Character

Bits per Inch:

Use these drop down lists to select how many **binary bits** should be encoded in each **inch length** of magnetic stripe. The **recommended** standard **ISO** settings (International Standards Organisation) are:-

- Track 1** - 210 Bits per Inch
- Track 2** - 75 Bits per Inch
- Track 3** - 210 Bits per Inch



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

The Save & Restore Tab:

The **Save & Restore Tab** is used to save your driver settings to a file, restore the settings from a file, or restore the settings to the original defaults.

If you change your driver settings it is recommended that you save these settings to a file, doing so will allow you to:

- Backup and restore your driver settings
 - In case your driver is updated
 - In case your driver settings are changed
 - In case your driver is re-installed
- Migrating your driver settings to other PC systems
- Create driver settings profiles for your card designs

The Save & Restore Settings:

Restore Settings from File:

This button is used to load '**Settings Files**' (files with an **.MDS** extension). These contain driver settings that have been saved using the **Save Settings to File** button.

Save Settings to File:

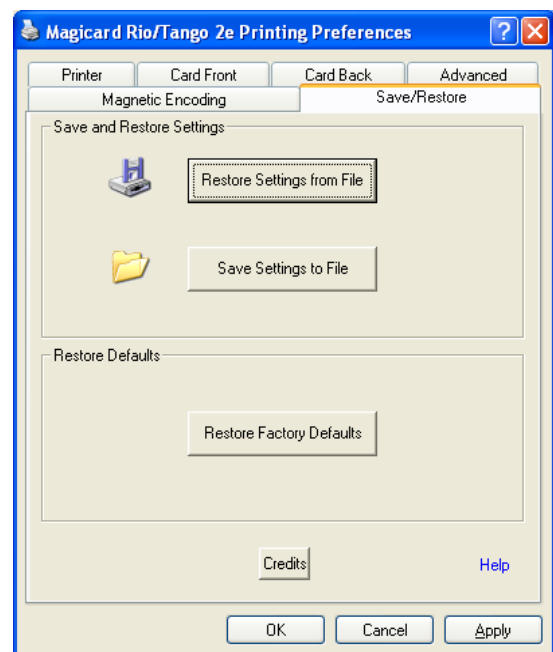
This button is used to **save** the **driver settings** to a file with an **.MDS extension**. This allows for the **backup** of driver settings in case the driver is uninstalled or updated, and has a variety of other possible advantages such as **sharing driver settings between computers** and **creating driver profiles** for different card designs.

Restore Defaults:

Restore Factory Defaults:

This button is used to **reset** all the **settings** in the driver to their original default settings. Be sure to **back up** your driver settings if you want to keep a record of them, this can be done by using the **Save Settings to File** button.

Note - The driver will ask for confirmation before going ahead with the restore.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

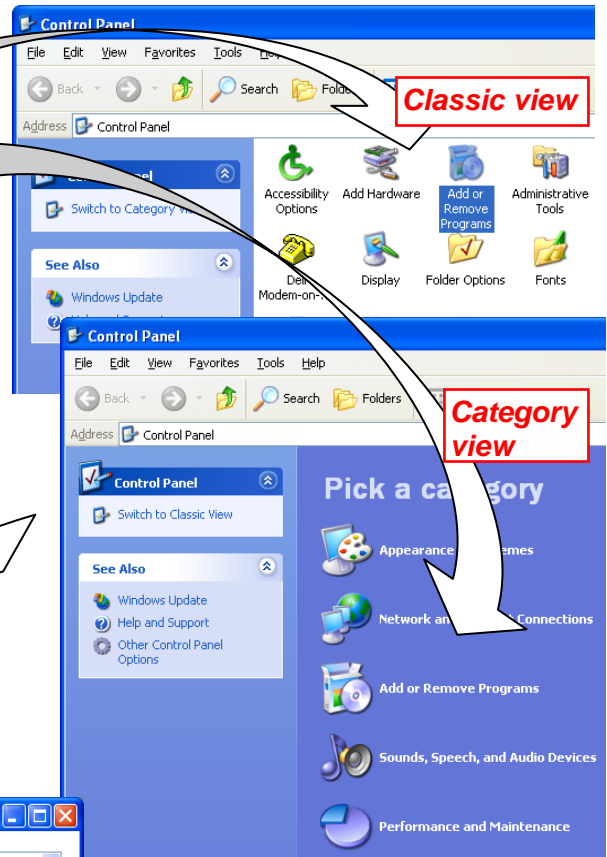
12. Uninstalling the *UltraDriver*

To delete the *UltraDriver*:-

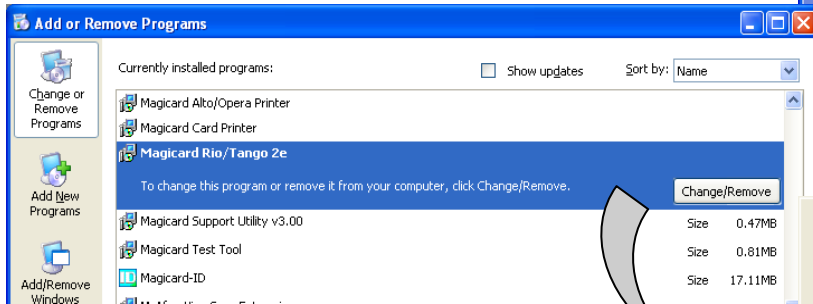
- On the PC, go to "Start" >> "Control Panel"



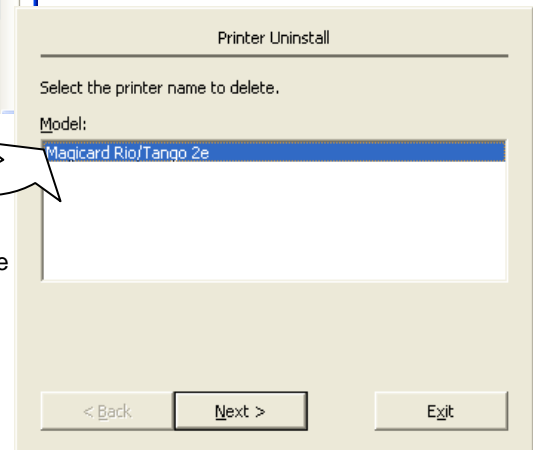
- Then select "Add or Remove Programs"



- Select the "Magicard Rio/Tango 2e" entry, and click on "Change/Remove"



- Choose the "Magicard Rio/Tango 2e" you wish to remove (there may be more than one), and click "Next"



- Lastly - just follow the on-screen prompts!

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

13. Magicard Support Utility

The **purpose** of this utility is to provide advanced **diagnostic and configuration tools** for use **when contacting your Magicard Technical Support office**. However, it can also be used to **upgrade the firmware** within the printer.

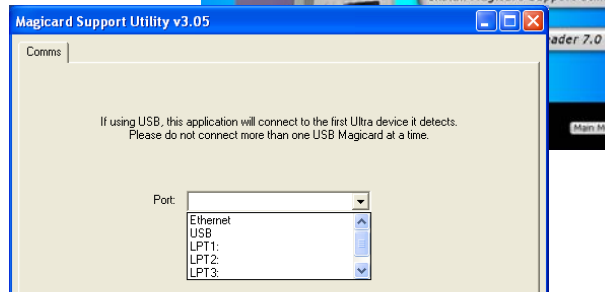


1. Install the **Magicard Support Utility** from the **Driver CD**

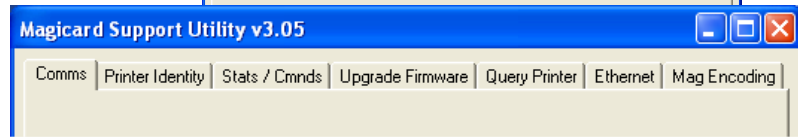
2. Then double **click** on the 'MSU' **desktop icon**



3. **Select the port** to which the **printer is connected**

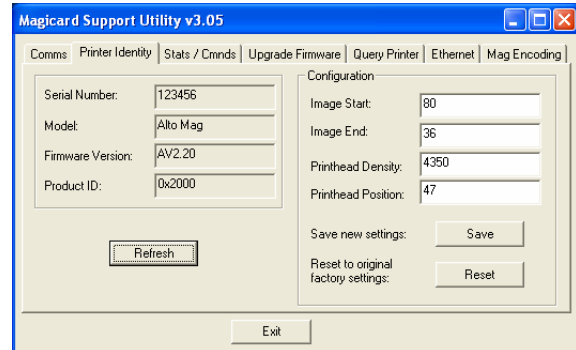


Six new tabs will appear:



Printer Identity:

It is **recommended** that the user **does NOT change** any of the **settings** shown in this tab **unless requested** to do so by **Magicard Technical Support**.



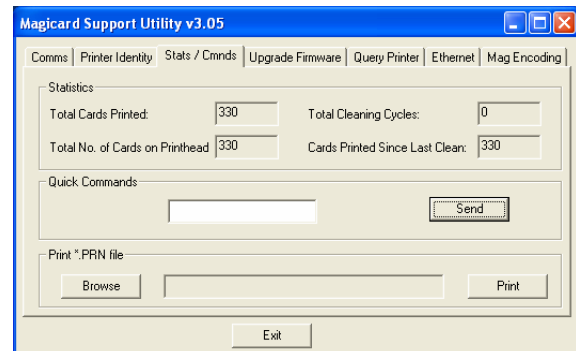
Stats / Cmnds:

This tab contains 3 separate areas:

Statistics – shows valuable information on printer usage.

Quick Commands – enables the user to send special commands to the printer (usually used for fault diagnosis). **Do not use unless requested** to do so by **Magicard Technical Support**.

Print *.PRN file – enables the user to send previously saved print data to the printer.

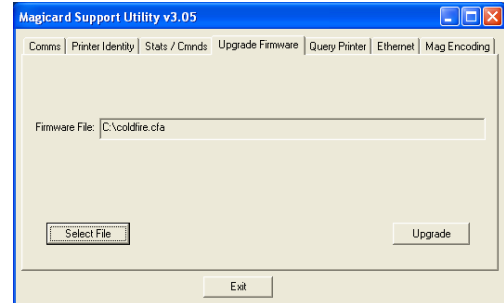


RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Upgrade Firmware:

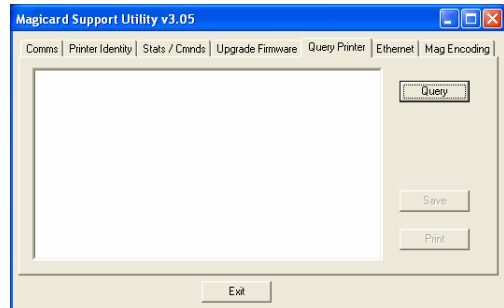
Use the controls in this tab to upgrade the printer's firmware.

Note - Latest firmware files can be downloaded from the Magicard web site at www.magicard.com



Query Printer:

Collects advanced diagnostic data from the printer. If you experience a problem, you may be asked to email the results of the query to Magicard Technical Support for analysis



Ethernet:

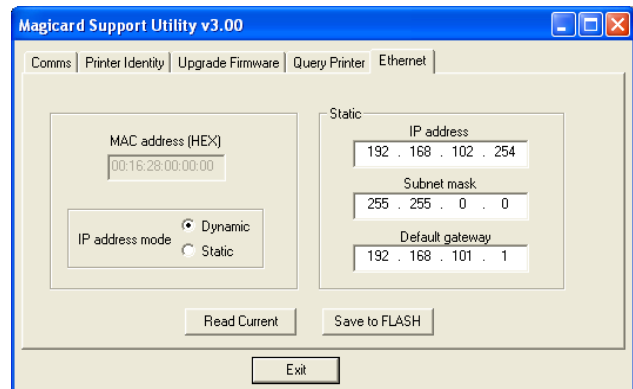
Press the 'Read Current' button to read the printer's current IP settings.

The printer's **default** IP address mode is 'Dynamic' (DHCP). If the user's network cannot provide a dynamic address or uses **static** addressing, the printer will use a **default static address**.

To alter the default static address:-

1. Connect the printer via the USB or the Parallel port.
2. Select 'Static' IP address mode on the left of the window.
3. Enter the correct IP address, Subnet mask, and Default gateway for your network.
4. Press the 'Save to FLASH' button.
5. **Turn** the printer **OFF**, and then back **ON** again.

The IP settings will now be changed.

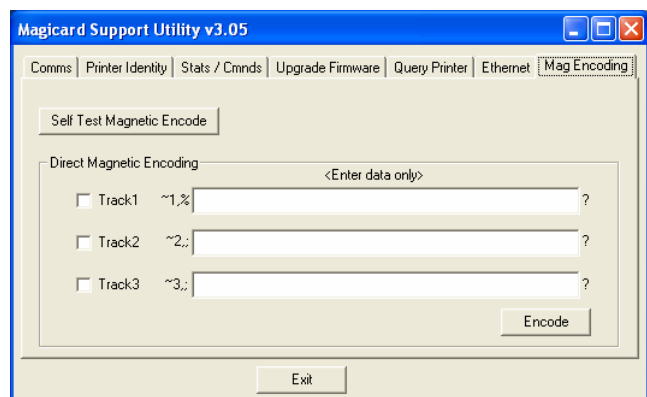


Mag Encoding: For use with Mag encoding models only.

Self Test Magnetic Encode button – enables the user to confirm the integrity of the printer's mag encoding operation.

Direct Magnetic Encoding – the user can encode cards directly from this tool. To use this tool:-

1. Ensure mag stripe cards are loaded in the card hopper.
2. Select the track(s) that you wish to encode and enter the data to be encoded.
3. Click on the 'Encode' button.



RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

14. Troubleshooting

Table 1 - Printer Prints but with Image Quality Problems

Problem	Probable Cause	Solution
Mis-registration of Colours (Ghosting on Photographs etc)	1. Card is slipping due to dirty rollers.	1. Clean all rollers.(See section 7 of this document).
Small Areas of Wrong Colour (Small areas where 1 or more colour layers have been missed from the image).	1. Dust and debris on surface of the card. (white ovals) 2. Contaminated with oily deposits (darker blotches) 3. Card surface uneven (White patches) 4. Slight cutting of dye film (Jagged scratches) Printhead density too high (Jagged scratches)	1. Ensure cards are kept clean, and protected from dust & debris. 2. Replace cards with clean ones and do not handle print surface. 3. Replace cards. 4. Reduce printhead power setting, or determine which end of card is cutting the film & adjust image start or end position accordingly.
Dark or lighter vertical lines on card (always in the same place)	1. Card striking something during the print process. 2. Card not running smoothly along the platen runway.	1. Check print path is clear 2. Contact Magicard Tech Support for advice on clearing the platen.
Vertical white line down one or both ends of card.	1. Incorrect driver setting. 2. Image page size incorrect. 3. Incorrect image start or end position settings.	1. Ensure the driver is not set to white border. 2. Ensure page size 86.9mm x 54mm with margins at 0 in badging application. 3. Adjust settings in driver.
White line along length of all cards (always in the same place).	1. Printhead has damaged heating elements	1. Contact Magicard Tech Support for advice on printhead cleaning or replacement.

Table 2 - Dye Film Problems

Problem	Probable Cause	Solution
Printer does not recognise dye film type. (Print colours may be very pale but with good black text)	1. Dye film incorrectly loaded 2. Incorrect type of dye-film	1. Reload the dye film 2. Reload the dye film correctly. (See section 3 of this document).
Printer cannot position the dye film. (Prints colours in wrong places).	1. Dye film incorrectly loaded.	1. Reload the dye film correctly. (See section 3 of this document).
Dye film cutting during the print operation	1. Dye film sticking to card. 2. Image printing over the ends of the card.	1. Ensure cards are not already used. Then lower the printhead power settings. 2. Adjust either the image start if cutting at beginning of film panel, or the image end if cutting at rear of film panel.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Image is printed outside the colour panels. (Puts a coloured band across one end of card).	<ol style="list-style-type: none"> 1. A used roll of dye film has been fitted. 2. Take-up spool wound too loosely. 	<ol style="list-style-type: none"> 1. Fit a new roll of film. 2. Remove loose film.
Areas of dye film peeling off card. Dark mosaic like image.	<ol style="list-style-type: none"> 1. Card has been used and has overcoat layer printed on it. 	<ol style="list-style-type: none"> 1. Use only brand new cards, not cards which have failed to print fully.
Out of Dye Film Error	<ol style="list-style-type: none"> 1. Out of dye film. 2. Dye film incorrectly fitted. 3. Dye film not moving. 	<ol style="list-style-type: none"> 1. Replace dye film. 2. Reload the dye film correctly. (See section 3 of this document). 3. Check film spools are free to turn.
Cards printed incorrectly after switching between YMCK and black film	<ol style="list-style-type: none"> 1. Failure to re-set driver settings 2. A used roll of dye film has been fitted. 	<ol style="list-style-type: none"> 1. Set correct the driver settings for Colour Format. 2. Replace dye film with a new roll.

Table 3 - Card Feed Problems

Problem	Probable Cause	Solution
Cards failing to travel correctly through the printer. Gives error message:- "Card not found".	<ol style="list-style-type: none"> 1. Dirty rollers. 2. Incorrect card size. 	<ol style="list-style-type: none"> 1. Clean the rollers. (See section 7 of this document). 2. Fit correct cards. (See section 4 of this document).
Cards fail to feed from hopper. Error message: "Printer may be out of cards".	<ol style="list-style-type: none"> 1. Card hopper is empty.. 2. Rear hopper rollers are dirty. 3. Card Thickness adjustment is set too small (sometimes accompanied by squeaking noise from the hopper). 4. Static causing cards to stick together (sometimes accompanied by squeaking noise from the hopper). 	<ol style="list-style-type: none"> 1. Refill hopper with cards. 2. Clean hopper rollers using fresh cleaning card. 3. Adjust to correct thickness. 4. Remove cards from hopper. Fan to cards to separate them. Return cards to hopper (very common with mag stripe cards).
Cards fail to feed from hopper. Error message: "Card not found".	<ol style="list-style-type: none"> 1. Cleaning cassette 'tacky' roller incorrectly fitted. 	<ol style="list-style-type: none"> 1. Remove cleaning cassette, check that the two small springs are above the 'tacky' roller. Replace the cleaning cassette (see page 17)
Printer feeds more than one card from the hopper	<ol style="list-style-type: none"> 1. Card gate (thickness) adjustment set too large (Often causes dye film to snap). 	<ol style="list-style-type: none"> 1. Adjust to correct thickness.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Table 4 - Magnetic Encoding Problems

Problem	Probable Cause	Solution
Magnetic Encoding results are inconsistent	<ol style="list-style-type: none"> 1. Card slipping when moving over the recording head. 2. Incorrect cards fitted HI-Co / Lo-Co 	<ol style="list-style-type: none"> 1. Clean all rollers are clean. (See section 7 of this document). 2. Ensure the correct cards (Hi-Co or Lo-Co) are being used.
Cards do not encode	<ol style="list-style-type: none"> 1. Card incorrectly oriented when fed into printer. 2. Driver selections are incorrect for encoding. 3. Incorrect or defective cards. 	<ol style="list-style-type: none"> 1. Position card with the stripe underneath and to the right when inserting into printer. 2. Check the Printer driver settings are correct. 3. Ensure the correct cards (Hi-Co or Lo-Co) are being used.

Table 5 Lamination Problems

Problem	Probable Cause	Solution
Lamination patch or overlay is peeling off the card.	<ol style="list-style-type: none"> 1. Roller temperature too low. 2. Lamination speed too fast. 3. Cards contaminated (fingerprints, grease, etc). 	<ol style="list-style-type: none"> 1. Increase roller temperature. 2. Decrease lamination speed. 3. Cards must be clean and dry.
Laminated cards are bent or distorted.	<ol style="list-style-type: none"> 1. Roller temperature too high. 2. Lamination speed too slow. 3. PVC cards are unsuitable for double-sided lamination. 4. Cards too thin. 	<ol style="list-style-type: none"> 1. Decrease roller temperature. 2. Increase lamination speed. 3. Use composite PET/PVC cards for double sided lamination (see page 13) 4. Minimum recommended card thickness for laminating is 0.030" (0.76mm).

Table 6 Driver Related Problems

Problem	Probable Cause	Solution
Slow Information download from computer to printer	<ol style="list-style-type: none"> 1. Computer polling access control system in background 2. Corrupted Driver or spooler 	<ol style="list-style-type: none"> 1. Operate from a dedicated PC 2. Update with latest driver.
No information download between PC and Printer but printer can print internal test cards	<ol style="list-style-type: none"> 1. Driver settings incorrect. 2. Incorrect port selected. 3. Driver corrupted 	<ol style="list-style-type: none"> 1. Using MSU check communication between PC and printer, if OK check the driver settings. 2. Check port selection in driver properties. 3. Update with latest printer driver.
Prints stuck in spooler	<ol style="list-style-type: none"> 1. Printer communication blocked. 2. Damaged file is at front of print queue. 	<ol style="list-style-type: none"> 1. Clear the spooler and reset the printer. 2. Delete the damaged print if necessary, and reset the printer.

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

15. Warranty

UltraCover^{plus}™ Extended Warranty & Loaner Service

If you purchased your Magicard printer in North America or the EU, you should be covered by our **free** two year UltraCover^{plus}™ extended warranty and loaner program. Outside of these territories our standard one year limited warranty applies (See below).

Ultra will:

- Replace a failed printhead without charge whatever the cause of failure (provided Ultra consumables have been used exclusively).
- Repair a failed printer without charge.
- Provide a loan unit on request to replace a printer returned for repair.
- Pay for all shipments to the customer.

You must:

- Keep this warranty information in a safe place.
- Contact the service line above if you have a problem.
- Promptly ship to Ultra:
 - A failed printhead for replacement.
 - A failed printer for repair.
 - A loan printer when your unit is returned.
 - Pay for all shipments to Ultra.

Making a Claim

- a). If your product is exhibiting a problem and is covered by UltraCover^{plus}, FIRST contact our Technical Support team for troubleshooting. The phone number is listed below.
- b). If Technical Support cannot solve the problem and your product is defective, a Manufacturer's Return Authorisation Number (MRAN) will be issued to you. Please have the product's model and serial number ready for warranty verification. (See label on the rear of the printer).
- c). Once it has been verified that you product is covered by UltraCover^{plus}, please ensure the consignment address is forwarded before 1pm so that there is no delay in shipment of a loan printer if required.
- d). On receipt of the loan unit, please ship the defective product to your Magicard Service Center promptly to avoid rental charges for the loan unit. Retain all necessary items for your with the loan unit.
- e). The product should be securely packed in its original packaging with a description of the problem and quoting the MRAN number. Please also mark the MRAN number on the outside of the shipping carton.
- f). If your defective unit is not receiver within one week of the loan machine being dispatched from Ultra, a rental charge will apply.
- g). Once your product has been repaired it will be shipped back to you. On receipt, please return the loan unit promptly. After a period of one week, unless agreed in writing by Ultra, a rental charge will become payable.
- h). Insurance and shipping costs incurred in sending the original product for service and returning the loan unit are the responsibility of the customer. Ultra will pay freight costs to ship the loan unit out and to return the repaired item. If your printer is not covered by UltraCover^{plus}, it may still be covered by our standard 12 month warranty

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Limited Warranty Information

- 1). **Coverage:** Ultra Electronics Ltd Warrants that the MAGICARD printer shipped with this Warranty statement will conform to the manufacturers specifications and be free from defects in materials or workmanship for a period of **12 months** from the date of original purchase by the user, but there are additional conditions on the printhead Warranty (see paragraph 2).
- 2). **Limited Printhead Warranty:** Ultra warrants that, under normal use and service, thermal printheads will be free from defects in material and workmanship for a period of twelve (12) months from the date of original purchase or for a quantity of 40,000 printed cards, whichever comes first, provided that Ultra-approved card media is utilised. If a Warranty claim is submitted for a defective printhead, Ultra will have the right to inspect the printhead and samples of the printed and blank ID cards used with it for the purpose of verifying that the claimed defect has not been caused by non- Ultra approved media, or by foreign particles or substances which have caused chemical or physical damage. Ultra's decision in any such claims shall be final.
- 3). **Warranty Claims:** If the MAGICARD printer proves defective during this period, please contact the Ultra Service Center, at the address and telephone/fax number given below. The Ultra Service Center personnel may first ask you to carry out certain simple checks to confirm the nature of the problem, and if a return is appropriate they will give you a Return Authorisation Number and consignment instructions to the appropriate repair center. Ultra will, at its option, repair or replace the defective parts at no charge to the customer.
- 4). **Warranty Limitations:** The Warranty does not apply to MAGICARD printers that have been:
 - Damaged through physical or electrical mishandling.
 - Damaged through operation in environments which are outside normal office conditions in terms of corrosive atmosphere, temperature, humidity, shock or vibration.
 - Improperly installed or interfaced to other products which may exhibit software problems or expose the MAGICARD to improper voltages or control signals.
 - Fitted with dye film rolls from any source other than Ultra Electronics, or have been used to print on anything other than card surfaces which are approved by Ultra and which will generally be made of PVC, be completely flat, and be free of harmful particles or substances.
 - Serviced or interfered with by anyone other than an Ultra Authorised Service provider.
- 5). **Shipping:** Insurance and shipping costs incurred in sending the MAGICARD printer for Warranty service are the responsibility of the customer. Whenever possible Ultra Service Centres will use the same class of shipping service selected and paid for by the customer to return the printer. Return shipping costs from Ultra to the customer will be at Ultra's expense. After obtaining the Return Authorisation Number as described above, the printer should be securely packed in its original packaging with proof of date of purchase and a note describing the problem and quoting the Return Authorisation Number. The printer must be sent to the service center address supplied with the Return Authorisation Number by the main service center. This address may be different to the address listed below, but will generally be closer to you. Please also mark the Return Authorisation Number on the outside of the shipping carton. All customs duties and taxes, if applicable, are the responsibility of the customer.
- 6). **Applicability:** The Warranty and remedy provided above are exclusive and in lieu of all other warrants, either express or implied, including but not limited to, implied warranties of merchantability and fitness for a particular purpose. Any statements or representations made by any other person or firm are void. Neither Ultra Electronics Ltd nor its affiliates shall be liable for any loss, inconvenience, or damage, including direct, special, incidental, or consequential damages, resulting from the use or inability to use the Ultra product, whether resulting from breach of Warranty or other legal theory even if Ultra has been advised of the possibility of such damage or loss.
- 7). This Warranty is governed by the laws of England. Any dispute arising out of or relating to this Warranty shall be submitted for arbitration of this dispute or disputes pursuant to the rules and regulations of the UK Arbitration Act. This Warranty gives you specific legal rights, and you may also have other legal rights which vary from country to country so the above limitations and exclusions may not apply to all customers.



MAGICARD

www.ultramagicard.com

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

16. Technical Support, Service, and Warranty Enquiries

If you experience a problem or have warranty enquiries, call or fax our service center or visit our web site at (www.ultramagicard.com)

CALL EU +44 (0) 1305 762 115

Ultra Electronics Limited
MAGICARD Service Centre
Waverley House, Hampshire Road, Granby Estate
Weymouth, Dorset, DT4 9XD, UK
Fax: +44 (0) 1305 777 904
Email: customer_service@ultra.co.uk

**CALL USA (425) 556 9708
or 877 236 0933 (toll free)**

Ultra Electronics Inc.
MAGICARD US Service Center
6711 - 176th Avenue NE
Redmond, WA 98052, USA
Fax: (425) 556 3962
Email: ussupport@ultramagicard.com

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

17. Contact Us (Sales):

Sales and Service Center for North and South America



Ultra Electronics Card Systems
6711 - 176th Avenue NE,
Redmond, WA 98052, USA.

Tel: (425) 556-9708
Fax: (425) 556-3962
Email: USsales@UltraMagicard.com
Web: <http://www.ultramagicard.com>

Sales and Service Center for the UK, Europe and Rest of World



Ultra Electronics Card Systems
Waverley House, Hampshire Road,
Granby Estate, Weymouth,
Dorset, DT4 9XD UK.

Tel: +44 (0) 1305 784738
Fax: +44 (0) 1305 777904
Email: UKsales@UltraMagicard.com
Web: <http://www.ultramagicard.com>

Sales for Latin America



Contact: Luis de la Cruz
Office: 425-556-9708
Cell: 617-501-0078
Fax: 425-556-3962
Email: ldelacruz@ultramagicard.com

Sales for Europe



Contact: Joyashree Ghosh
Tel/Fax: +331 60 19 22 08
Mobile: +336 82 99 59 21
Email: joyashree.ghosh@wanadoo.fr

Sales for Germany & Austria



Magicard Master Dealer for Germany and Austria
HEYDEN-SECURIT GmbH
Am Stadtwalde 47
D-48432 Rheine

Tel/Fax: + 49 (5971) 9876-0
Mobile: + 49 (5971) 9876-54
Email: info@heydensecurit.de
Web: <http://www.magicard.de>

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

Sales and Service for Russia



AAM Systems
14 Krasnokazarmennaja Str.,
Moscow, 111250, Russia.

Tel: (007) 902 677 4394

Fax: (007) 095 362 7262

Email: aam@aamsystems.ru

Web: www.aamsystems.ru

Sales and Service for Singapore & Malaysia



Paclin Office Products PTE Ltd
Blk 3023, Ubi Road 3,
#04-03/04/05 Ubiplex,
Singapore, 408663.

Tel: (00 65) 67429255

Fax: (00 65) 6742 8744

Email: sales@paclin.com.sg

Web: www.paclin.com.sg

RIO 2e, TANGO 2e & TANGO +L Printers USER MANUAL

18. EMC

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canadian Department of Communications Statement

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

EU Declaration of Conformity

The EU Directives covered by this Declaration

89/336/EEC Electromagnetic Compatibility Directive, amended by 92/31/EEC & 93/68/EEC

72/23/EEC Low Voltage Equipment Directive, amended by 93/68/EEC

The Product Covered by this Declaration

Magicard Rio 2/Tango 2 Card Printer

The Basis on which Conformity is being Declared

The product identified above complies with the requirements of the above EU Directives by meeting the following standards

EN 55022:1998+A1:2000 - Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement

EN61000-3-2:2000 – Limits for harmonic emissions

EN61000-3-3:1995+A1:2001 – Limitation of voltage fluctuations and flicker in LV supply systems.

EN 55024:1998+A1:2001+A2:2003 – Information technology equipment – Immunity characteristics – Limits and methods of measurement.

BS EN 60 950-1: 2001 - Safety of Information technology Equipment Including Business Equipment.

The technical documentation required to demonstrate that the product meets the requirements of the Low Voltage Directive has been compiled and is available for inspection by the relevant enforcement authorities.