

BULLETIN BUL-063

# Safety Direct Field Programming

This procedure describes how to update the firmware of the Safety Direct.

## Requirements

- Windows XP 32-bit PC with available USB port
- FTDI virtual com port (VCP) drivers: <u>http://www.ftdichip.com/Drivers/VCP.htm</u> Or C:\GC07\RFU\Drivers\FTDI-VCP.zip.
- Kairos Autonomi djMultiSerial installer. This is provided by the Kairos engineering team, or by contacting Kairos for the latest version.
- Appropriate firmware version (.bin file). One is provided in the installer.

## Procedure

1. Locate and double-click the djMultiSerial.exe file. In the Setup window that opens, click the Install button.



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2. When the screen shows an active "Next >" button, click it.

📉 Pronto4 Software Suite MultiSerial-v1.0 Setup	
Installing Please wait while Pronto4 Software Suite MultiSerial-v1.0 is being installed.	$\langle\!\!\langle$
Extract: iPlotLibrary.ocx 100%	
Registering: C:\GC07\DLLs\djSVL.dll         Extract: djToolSet.dll 100%         Registering: C:\GC07\DLLs\djToolSet.dll         Extract: Doevents.dll 100%         Could not find symbol: DllRegisterServer         Extract: EnhancedRNDF.dll 100%         Registering: C:\GC07\DLLs\EnhancedRNDF.dll         Extract: inhancedRNDF.dll 100%         Registering: C:\GC07\DLLs\EnhancedRNDF.dll         Extract: i]11.dll 100%         Could not find symbol: DllRegisterServer         Extract: IPDNSLookUP.ocx 100%         Registering: C:\GC07\DLLs\ipdnslookup.ocx         Extract: iPolsLinerserver         Extract: iPolsLinerserver         Extract: IPONSLookUP.ocx 100%         Registering: C:\GC07\DLLs\ipdnslookup.ocx         Extract: iPolsLinerserver	
Nullsoft Install System v2.36	Cancel

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3. When the screen shows an active "Finish" button, click it.



- 4. Ensure the FTDI virtual com port driver has been loaded. For more information see the Kairos "Loading Windows Drivers" bulletin.
- 5. Ensure that the Safety Direct power switch is in the Off position.
- 6. Use a USB cable to connect the diagnostic port of the Safety Direct to the programming cable that has djMultiSerial.exe loaded.
- 7. Connect one end of the USB cable to the bottom connector of the Safety Direct and the other end to an available port on the programming computer.
- 8. The PC should try and install 2 serial ports. Install the VCP drivers if not already installed.
- 9. Configure the installed serial ports as COM10 and COM12. The rest of the instructions assume this order.
- 10. On the programming computer launch C:\GC07\djMultiSerial.exe.
- 11. In djMultiSerial, verify COM12 is open and "DTR" is in uppercase.
- 12. In djMultiSerial, verify COM10 is closed.
- 13. Power on the Safety Direct.

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14. Launch the RFU (C:\GC07\RFU\RFU.exe).

皾	Rabbit Field Utility				
Eile	<u>S</u> etup <u>P</u> orts <u>H</u> elp				
	Firmware Setup Firmware Image :   Processor Type : • Rab	bbit 4000+ C Rabbit 2000/3000			
	Ports				
	Port Statu	us	Progress		
	🗖 СОМ1				
	COM10 (USB)				
	COM12 (USB)				
				Start	<u>C</u> ancel

15. Select the .bin file from File→Find Flash Image. The default location for the firmware files is C:\GC07\RFU\Firmware.

🖻 Rabbit Field Utility		
ile Setup Ports Help	_	
Find Flash Image		
Exit 0 C:\KA\Rabbit\KARemote66\UDP_SRV3.bin 1 E:\RabbitFU\UDP_SRV.bin	- \UDP_SRV3.bin 2000/3000	
Ports Port Status COM1 COM10 (USB) COM12 (USB)	Progress	
	<u>Sla</u>	t <u>C</u> ancel
any Confidential	Safety Direct	

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### 16. For Processor Type select "Rabbit 4000+".

📸 Rabbit Field Utility					
Eile	<u>S</u> etup <u>P</u> orts <u>H</u>	elp			
	Firmware Setup Firmware Image : Processor Type :	C:\KA\Rabbit\KARemote66\UD	P_SRV3.bin 0/3000		
Γ	Ports				
	Port	Status	Progress		
	COM1				
	COM10 (USB	I			
	COM12 (USB	J			
L					
				S <u>t</u> art <u>C</u> ancel	el

## 17. Select the lowest number serial port (e.g. COM10 (USB)).

📸 Rabbit Field Utility		×
<u>File S</u> etup <u>P</u> orts <u>H</u> elp		
Firmware Setup Firmware Image : C:\KA\Rabbit\KARemote66 Processor Type :  Rabbit 4000+  C Rabbit	\UDP_SRV3.bin	
Ports		
Port Status	Progress	_
🗖 СОМ1		
🔽 [СОМ10 (USB]		
Г COM12 (USB)		
	<u>Start</u>	

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#### 18. Go to Setup $\rightarrow$ Communications.

Rabbit Field Utili	ty		
Setup Ports Hel	P		
Communications			
File Locations			
Firmware Image :	J:\KA\Habbit\KAHemote66\	VUDP_SRV3.bin	
Processor Type : 🖲	6 Rabbit 4000+ 🔘 Rabbit :	2000/3000	
Ports			
Port	Status	Progress	
🗖 СОМ1			
COM10 (USB)			
🔲 COM12 (USB)			
			Start Cancel
	Abbit Field Utili         Setup       Ports       Hel         Communications         File Locations         File Locations         File Locations         File Locations         File Locations         File Locations         Fineware Image :         Processor Type :         Ports         Port         COM1         COM10 (USB)         COM12 (USB)	Abbit Field Utility         Setup       Ports         Help         Communications         File Locations         File Locations         Firmware Image :         C:\KA\Rabbit\KARemote66'         Processor Type :         Rabbit 4000+         Ports         Port         Status         COM1         V         COM10 (USB)         COM12 (USB)	Setup Ports Help     Communications   File Locations   File Locations   Firmware Image:   C:XKA\Rabbit\KARemote66\UDP_SRV3.bin   Processor Type:   Processor Type:   Rabbit 4000+   C Rabbit 2000/3000   Ports   Port   Status   Progress     COM1   COM10 (USB)     COM12 (USB)

### 19. Verify the following settings:

📸 Rabbit Field Utili	ity	_ 🗆 🗙
File Setup Ports Hel	P	
Firmware Setup	Communications Options	
Firmware Image :	Serial Options	
Processor Type :	Baud Rates	
Ports Port COM1 COM10 (USE	Debug Baud Rate       115200         Max Download Baud Rate       460800         □ Disable Baud Negotiation         Stop Bits       1         ▼ Enable Processor verification       ▼ Use USB to Serial Converter	
	OK Cancel Help	
	Start	Cancel

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20. Click on the "Start" button of the RFU. The status message should change to "Sending Coldloader".

皾	Rabbit Field Util	ity		
Eile	<u>S</u> etup <u>P</u> orts <u>H</u> e	p		
	Firmware Setup Firmware Image : Processor Type : (•	C:\KA\Rabbit\KARemote66\UDP_SRV3.t ∵Rabbit 4000+	bin	
	Ports			
	Port	Status	Progress	
	COM1			
	COM10 (USB)	Sending Coldloader		
	🔲 COM12 (USB)			
			Start	<u>C</u> ancel

## 21. Then to "Sending Pilot BIOS".

📸 Rabbit Field Uti	lity		
<u>File S</u> etup <u>P</u> orts <u>H</u>	elp		
Firmware Setup Firmware Image : Processor Type :	C:\KA\Rabbit\KARemote66\UDP_SRV3	3.bin	
Ports			
Port	Status	Progress	
🗖 СОМ1			
COM10 (USB)	Sending Pilot BIOS		
COM12 (USB)			
			Start <u>C</u> ancel

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## 22. Then to "Erasing flash".

🗃 Rabbit Field Utility 📃 🗖 🗙				
<u>File S</u> etup <u>P</u> orts <u>H</u>	elp			
Firmware Setup Firmware Image : Processor Type :	C:\KA\Rabbit\KARemote66\UDP_SRV3.	bin		
Ports				
Port	Status	Progress		
🗖 СОМ1				
COM10 (USB	Erasing flash			
COM12 (USB	]			
		Start	<u>C</u> ancel	

23. The contents of the .bin file will then be downloaded to the Safety Direct. Actual bytes will vary from the following figure.

📸 Rabbit Field Utility 📃 🗖 🔀					
File Setup Port	File Setup Ports Help				
Firmware Setu Firmware Ima Processor Ty	p ge : C:\KA\Rabbit\KARemote66\UDP_SF pe :	3V3.bin 00			
Ports					
Port	Status	Progress			
🗖 СОМ1					
🔽 COM10 (	USB) 134959 of 444427 bytes sent				
🗖 COM12 (	USB)				
			Start Cancel		

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24. When the file has been downloaded to the Safety Direct, the following screen will appear.

🛍 Rabbit Field Utility	
<u>File S</u> etup <u>P</u> orts <u>H</u> elp	
Firmware Setup Firmware Image : C:\KA\Rabbit\KARemote66\UDP_SRV3.t Processor Type :	oin
Ports	
Port Status	Progress
Г СОМ1	
COM10 (USB) Elapsed Time: 29.859 seconds	
🗖 СОМ12 (USB)	
	Start Cancel

- 25. Power off the Safety Direct and unplug the USB cable.
- 26. Power on the Safety Direct and verify proper operation.

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