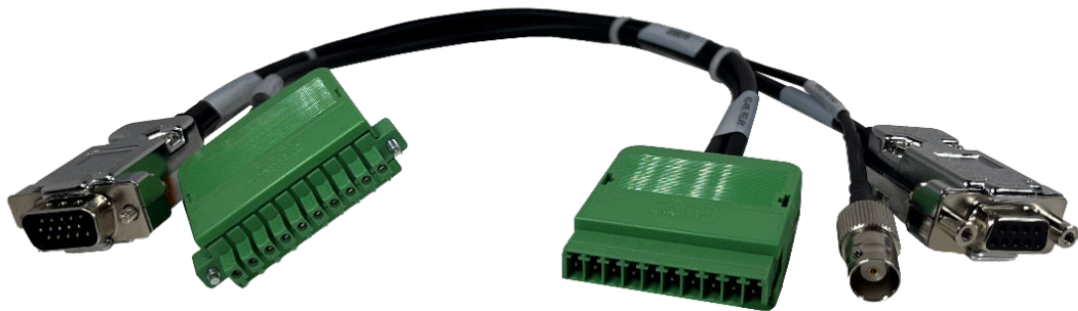


NetClock/NENA Breakout Cable

For SecureSync 2400 Model

Product Option Guide



Introduction

The NetClock/NENA Option is a user-selectable kit for the SecureSync 2400 that serves as a drop-in replacement for the NetClock 9483 NENA-Compliant Master Clock interfaces.

The NetClock/NENA Option Kit uses the 15-pin multi-I/O connector (found on the main board of the unit), and the 1204-0F Alarm Relay option card, to connect to the NetClock/NENA Breakout Cable. This cable provides the same three output interfaces as found on the NetClock 9483: BNC IRIG Out, RS-232 on DB9, and RS-485 and Alarm Relay on a shared terminal block, allowing users to swap in the 2400 system with seamless integration to end devices.

Components

The NetClock/NENA Option Kit (2400-0000-0705) includes the following materials:

- NetClock/NENA Breakout Cable (CA08R-0000-0010)
- NetClock/NENA Option Manual (this document, 2400-5000-0705)

Also required (must be ordered separately):

- **Alarms/Relay Option Card (1204-0F):**
The 1204-0F card can be installed in any open slot. The terminal block connector will be used in conjunction with the NetClock/NENA Breakout Cable. For information on this card, see https://safran-navigation-timing.com/manuals/2400/Content/NC_and_SS/Com/Topics/OPTCARDS/OC_List/Alrm_Rlay_O.htm

Installation

1204-0F Option Card Installation

For customer installation of the 1204-0F card on a SecureSync 2400 unit already in your possession, follow the instructions in the Option Card Field Installation Guide to ensure that you safely install the 1204-0F. The Option Card Field Installation Guide is shipped with option cards ordered separately from SecureSyncs, and is also found here:

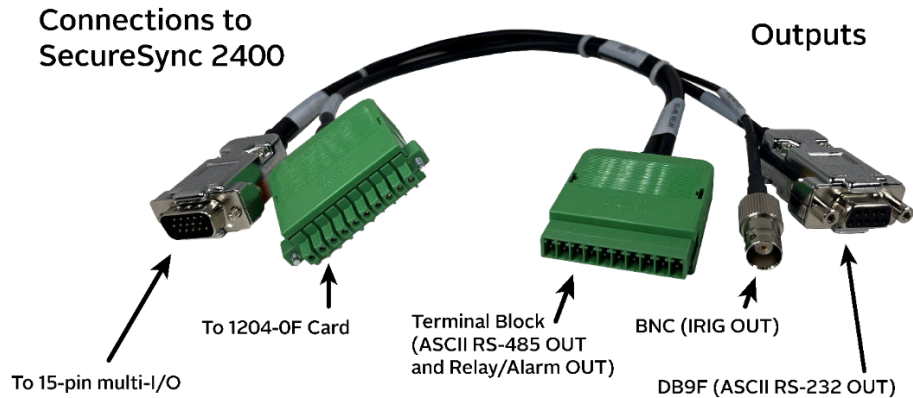
<https://safran-navigation-timing.com/document/option-card-installation-guide/>

Warning: Field installation of option cards by end users is potentially dangerous and requires strict adherence to all safety warnings and cautions. Personal injury and permanent equipment damage can occur. Do not attempt to install the card without referring to the Option Card Field Installation Guide.

(If you are receiving this kit with an order for a SecureSync 2400 and a 1204-0F card, your 1204-0F card will be already installed in your unit).

NetClock/NENA Breakout Cable Installation

Once a 1204-OF card is installed in your SecureSync 2400, you can attach the NetClock/NENA Breakout Cable (see image below).



1. On the NetClock/NENA Breakout Cable, connect the terminal block marked CONNECT TO 1204-OF to the terminal block on the 1204-OF card on the rear panel of the SecureSync.
2. Connect the HD15 male marked CONNECT TO 2400 I/O on the NetClock/NENA Breakout Cable to the multi-I/O connector on the main board of the SecureSync 2400.
3. Log on to the Web UI to further configure the Pin Layout. Navigate to **MANAGEMENT > Network > Pin Layout**. From here, you can either:
 - a. Upload a Pin Layout configuration:
 - i. Download the preset pin layout configuration file here:
<https://safran-navigation-timing.com/document/securesync-2400-netclock-ena-breakout-cable-pinout/>
 - ii. In the Actions panel of the Pin Layout page, select Upload Layout and upload the netclockcablepins.json file.
 - iii. In the Actions panel, select Apply Changes.

Caution: Do not skip this step, or your changes will not take effect.

- b. OR, you can manually adjust your pin layout settings using the following steps:
 - i. To eliminate later confusion, first delete four unnecessary signals:

DELETE Pins 1,2, IRIG_IN DCLS
DELETE Pins 15 ATC_IN RS232

DELETE Pins 3, 13, 8 HQ_OUT RS485
DELETE Pins 4,14, 9 HQ_IN RS485

Layout

Pin Number	Signal	Type	
BNC	PPS_OUT	DCLS	
BNC_GND		GND	
6	IRIG_OUT	DCLS	
7		GND	
1	IRIG_IN	DCLS	
2		GND	
15	ATC_IN	RS232	
5	ATC_OUT	RS232	
10		GND	
3	HQ_OUT	RS485	
13	HQ_OUT	RS485	
8		GND	
4	HQ_IN	RS485	
14	HQ_IN	RS485	
9		GND	
11	IRIG_OUT	FM	
12		GND	

- ii. Click on the plus sign in the upper right corner, and **ADD pins 3, 13, & 8 to ATC_OUT | RS485** (as in the following figure) and click Submit.

Add Pin

Signal: ATC_OUT | RS485

Type Filter: RS485

Pins: 3, 13, 8

Submit

Note: If your setup requires an IRIG AM output rather than DCLS, you will also need to **ADD pins 6 & 7 to IRIG_OUT | RS485** to change the signal.

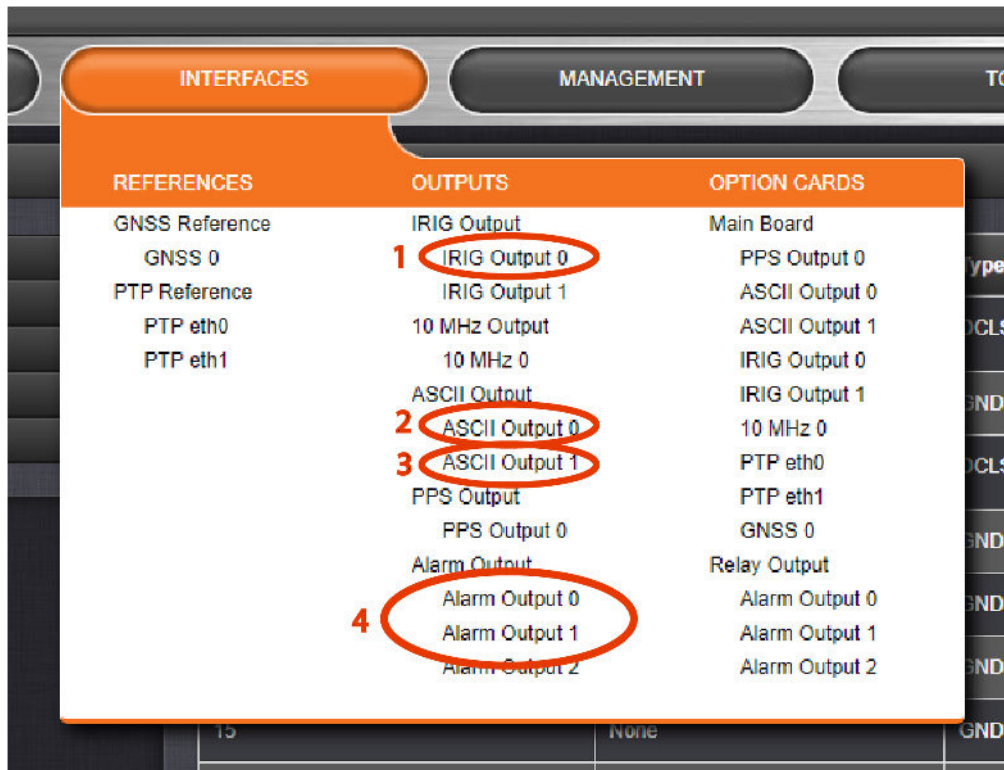
- iii. Your pin layout should now be configured like the following image:

Pin Number	Signal	Type	
BNC	PPS_OUT	DCLS	Delete
BNC_GND		GND	
6	IRIG_OUT	DCLS	Delete
7		GND	
1	None	GND	
2		GND	
15	None	GND	
5	ATC_OUT	RS232	Delete
10		GND	
3	ATC_OUT	RS485	Delete
13	ATC_OUT	RS485	
8		GND	
4	None	GND	
14	None	GND	
9		GND	
11	IRIG_OUT	AM	
12		GND	

- iv. In the Actions panel, select **Apply Changes** to confirm your new pin layout.

Caution: Do not skip this step, or your changes will not be reflected on the unit.

4. Additional Web UI configuration may be necessary based on your application of the inputs and outputs. You can select each output to change specifications (on your IRIG or ASCII signals, for instance). See the following image for reference.

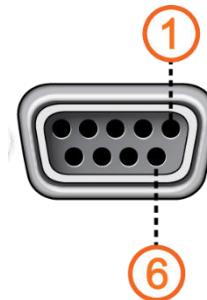


In the Web UI, the following interfaces apply to the NetClock/NENA Breakout Cable:

1. **IRIG-OUT** (found on the BNC connector of the NetClock/NENA Breakout Cable).
2. **ASCII OUT RS232** (found on the DB9F connector of the NetClock/NENA Breakout Cable).
3. **ASCII OUT RS485** (found on the terminal block connector of the NetClock/NENA Breakout Cable).
4. **ALARM/RELAY** signals Alarm Output 0 and 1 (found on the terminal block connector of the NetClock/NENA Breakout Cable. Note: in this setup, Alarm Output 2 is not functional).

PIN	SIGNAL	FUNCTION
1	PPS_OUT	1PPS output
2	SERIAL_OUT_TX	RS-232 Transmit data
3	SERIAL_OUT_RX	RS-232 Receive data
4	NC	No connection
5	GND	Ground
6	NC	No connection
7	NC	No connection
8	NC	No connection
9	NC	No connection

DB9 Pinout



DB9 Output Pins
From terminal end of
NetClock/NENA Breakout Cable



Terminal Block Output Pins,
From terminal end of NetClock/NENA Breakout Cable

Pin	Signal	Direction	Characteristics
1	RS-485 TX+	Out	0V to 3VDC differential, 120 Ω load
2	RS-485 TX-	Out	0V to 3VDC differential, 120 Ω load
3	GROUND	N/A	GROUND
4	Relay 0 NO	Out	Normally Open 30 VDC, 2A max. switching power
5	Relay 0 NC	Out	Normally Closed 30 VDC, 2A max. switching power
6	Relay 0 COMMON	Out	Common Contact 30 VDC, 2A max. switching power
7	Relay 1 NO	Out	Normally Open 30 VDC, 2A max. switching power
8	Relay 1 NC	Out	Normally Closed 30 VDC, 2A max. switching power
9	Relay 1 COMMON	Out	Common Contact 30 VDC, 2A max. switching power
10	GROUND	N/A	GROUND

Terminal Block Pinout

Relay 0		
From Common (pin 6)	To NO (pin 4)	To NC (pin 5)
Power applied. No alarms	Short	Open
Power applied. Alarm active.	Open	Short
No power applied to SecureSync	Open	Short
Relay 1		
From Common (pin 9)	To NO (pin 7)	To NC (pin 8)
Power applied. No alarms	Short	Open
Power applied. Alarm active.	Open	Short
No power applied to SecureSync	Open	Short

Alarm Relay Power Source

More information on standard unit behavior or any other feature or function of the SecureSync 2400 can be found in the user manual at <https://safran-navigation-timing.com/manuals/>

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