

Pyromate Wireless Modem V1.00

The Pyromate Wireless Modem receives an audio line level signal encoded with FSK Time Code information and converts it to a RS232 serial output for use by the Nighthawk, Smarthawk firing panels and the Smartfire firing system. There are several features and modes of operation to aid in the successful operation of Synchronized Timed Firing of pyrotechnic scripts. This unit will operate as a modem, as a radio link or a modem and radio link combined.

This modem unit contains both a modem section and a radio section. The radio section provides a wireless link for the remote communication of Timecode. The wireless modem will serve as either a transmitter or receiver in Radio Mode or Radio Modem Mode depending on how it is configured.

FSK Timecode

What is FSK Timecode?

FSK is the acronym for Frequency Shift Keying. It is a method for encoding digital information in a format that can be stored and transferred using standard audio equipment. Timecode is an information stream that is used to identify unique points in time. A time code point occurs as a burst of shifts in audio tone. The FSK Timecode stream used by the Pyromate firing systems has the time points occur every 1/10th second with a maximum range of 109 minutes and 13.5 seconds. To make use of this information a device called a *modem* is required to convert the encoded audio signal into a digital data stream. The data is encoded by a modem using two sinusoidal frequency tones, 1200 cycles and 2100 cycles. 1200 cycles or Hz is the frequency for zero or *space* and 2100 Hz is the frequency for one or *mark*. Each time code point contains seven encoded 8-bit characters grouped together, with each group separated by *space*. Computer terminology refers to a group of associated data as a record, which is what a Timecode point is.

Setting up time code

Typical use of Timecode is to record a separate audio Timecode track, coinciding with a music track, that will allow external equipment to synchronize to the music or event as the recorded tracks are played. A lead-in of 1 minute of valid Timecode before the music begins is strongly recommended. This will allow for verification and/or correction of possible audio source problems before the 1st fire event is to take place.

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Controls and Status



Front Face – Antenna port, Status and Controls

OFF/on and volume control

This knob, located to the right on the front face of the modem is used to turn on the modem. The knob will also control the volume for the audio input. This control will not affect the level of the audio input, but is meant to allow the input Timecode to be monitored. The OFF position is located at approximately 5 o'clock. The three o'clock position is the maximum volume for the input audio. Input and output RCA signal levels are not adjustable.

MODE switch

This is a three position switch that controls the functional mode of the unit. Set to the top position, the mode is RADIO only. Set to the center position, the mode is MODEM only. Set to the bottom position, the mode is RADIO MODEM.

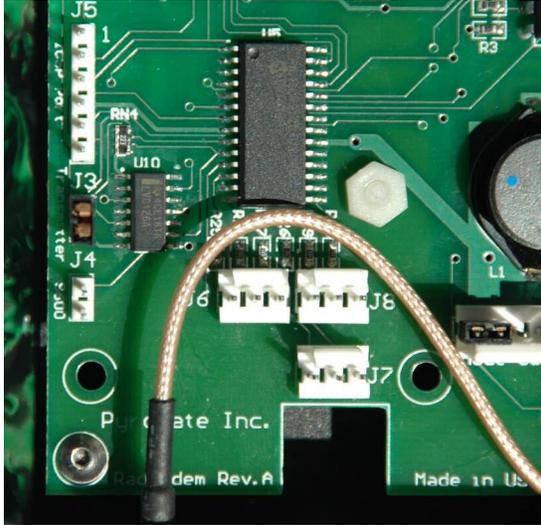
NH/COMP slide switch

This slide switch located on the back face below the serial RS232 connector swaps the TX and RX lines of the RS232 connector, allowing for straight thru or NULL modem connection.

Transmit/Receive Jumper

This jumper, located inside the case is used to determine whether the radio section is a transmitter or a receiver. When the jumper block is placed across the two pins of J3, the radio will operate as a transmitter. When the jumper is placed on only one pin of J3 or removed completely, the radio will operate in receive mode. This is located inside the case, as this setting will only rarely be altered.

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Internal Transmitter Jumper J3

RADIO status

This illuminated status indicates that a radio mode is selected. A solid red color shows that the radio portion is set to transmit. There must never be more than one transmitter active at a time as interference will result and communications will be impacted. A flashing green color indicates that the radio portion is in RECEIVE mode but is not picking up a valid transmitter signal. When the indicator is a solid green color, a valid transmitter signal is being received by the radio and a link has been established.

DATA status

This indicator shows activity for the digital data lines. A flashing green color shows data transitions on the outgoing TX line. A flashing red color indicated transitions on the incoming RX line.

MODEM status

This indicator shows that a modem mode has been selected. A solid red color indicates that the input audio is not receiving a signal of sufficient level to detect Timecode. When the indicator is green, the level of the input audio is high enough to resolve Timecode. If the indicator is not a flickering green, the level is varying.

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Inputs and Outputs



Rear Face – Inputs, Outputs and NH/COMP switch

POWER jack

The modem requires a power source providing +12V DC capable of delivering 1 Amp for the radio in transmit mode. The plug must be center ring positive.

OUTPUT RCA connector

This connector is for the audio output of Timecode. The signal level must be adjusted at the external device receiving the signal. Output signal level is 1.0VAC RMS or 1.4 peak.

INPUT RCA connector

This connector is for the input for the audio Timecode signal. The signal level must be adjusted at the external device providing the signal. Usable signal input range is ~0.2 to 2.0 VAC peak, not to exceed a maximum of +4 db.

RS 232 connector

This DB9 Female connector is either a DCE or DTE device depending on the position of the NH/COMP slide switch. With the slide switch set to COMP the connector is a DCE device that will connect straight thru to a computer serial port. With the slide switch set to NH the connector is a DTE device that will connect straight thru to a Nighthawk panel. The signal levels are RS232 levels with pins 2, 3 and 5 required for operation.

RP SMA Antenna connector

This threaded connector is reserved for the reverse-polarity SMA fitting on the antenna appropriate for the installed radio. Use of any antenna not approved for use by Pyromate is not allowed and will violate FCC regulations.

Internal Speaker

The internal speaker plays the amplified signal from the input RCA connector. This allows the verification of the incoming Timecode to make sure the correct audio track is being routed to the modem. Volume is controlled by the Volume/OFF Knob on the front face.

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Functional Modes

The following table lists the possible status LED combinations by operational modes.

RADIO Receiver	RADIO LED	DATA LED	MODEM LED
Receiver, No Link	Flashing Green	Off	Off
TX activity, No Link	Flashing Green	Flickering Red	Off
Linked Receiver Idle	Solid Green	Off	Off
Linked Receiver TX active	Solid Green	Flickering Green	Off
Linked Receiver RX active	Solid Green Solid	Flickering Red	Off
Linked Receiver TX & RX	Green	Flickering Yellow	Off
RADIO Transmitter	RADIO LED	DATA LED	MODEM LED
Transmitter Idle	Solid Red	Off	Off
TX activity	Solid Red	Flickering Green	Off
RX activity	Solid Red	Flickering Red	Off
TX and RX activity	Solid Red	Flickering Yellow	Off
MODEM only	RADIO LED	DATA LED	MODEM LED
No audio input	Off	Off	Solid Red
No audio input, RX to output	Off	Flickering Red	Solid Red
Audio input Carrier present	Off	Off	Solid Green
Audio input, input to TX	Off	Flickering Green	Solid Green
Audio input, RX to output	Off	Flickering Red	Solid Green
RADIO MODEM Receiver	RADIO LED	DATA LED	MODEM LED
No radio link	Flashing Green	Off	Solid Red
Linked Receiver, RX active	Solid Green	Flickering Red	Solid Red
No radio link, Modem carrier	Flashing Green	Off	Solid Green
Linked Receiver, carrier	Solid Green	Off	Solid Green
Unusual configuration	Green Solid	Flickering Green	Solid Green
Unusual configuration	Green Solid	Flickering Red	Solid Green
Unusual configuration	Green	Flickering Yellow	Solid Green
RADIO MODEM Transmitter	RADIO LED	DATA LED	MODEM LED
Transmitter Idle	Solid Red	Off	Solid Red
RX activity from radio	Solid Red	Flickering Red	Solid Red
Idle, modem carrier	Solid Red	Off	Solid Green
TX activity from Modem in	Solid Red	Flickering Green	Solid Green
Carrier and RX from radio	Solid Red	Flickering Red	Solid Green
TX and RX activity	Solid Red	Flickering Yellow	Solid Green

Power ON Mode

This is a transition mode that is used to establish the transmitter or receiver configuration of the radio section of the modem if either of the radio modes is selected. The three status lights will sequence thru red, green and yellow for all three LED's. If an error occurs in communicating with the radio the RADIO LED will blink red on and off for a short time. If the mode switch is changed from MODEM to RADIO or RADIO MODEM, the Power On LED sequence will be repeated.

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MODEM Mode

The toggle switch located on the front of the modem that is labeled “RADIO”, “MODEM” and “RADIO + MODEM” is used to select this mode. The switch must be set to the center position for MODEM mode. A quick visual check will show the MODEM LED illuminated either RED or GREEN but the RADIO LED off.

When set to this mode, the modem communicates to the RS232 connector only.

Basic operation in Modem Mode requires the input of the analog Timecode signal applied to the RCA input jack on the back side of the modem. The serial data stream used by a Nighthawk, Smarthawk or Smartfire system for Synchronized Timed Fire is output from the DB9 serial connector labeled RS 232.

When the modem has 12DC power plugged into the back connector labeled “POWER” and is turned on by rotating the knob located on the front face clockwise, the status indicator labeled MODEM will be illuminated, either RED or Green.

RADIO Mode

Before using this mode, the appropriate antenna must be connected to the threaded RP SMA connector on the front face of the modem. Transmitter and Receiver must be separated by at least 10 feet.

The toggle switch located on the front of the modem that is labeled “RADIO”, “MODEM” and “RADIO MODEM” is used to select this mode. The switch must be set to the upper position for RADIO mode. A quick visual check will show the MODEM LED off but the RADIO LED on as either RED or GREEN.

When set to this mode, the radio communicates to the RS232 connector only.

This mode is primarily intended to be used as a receiver link in place of the ConnexLink receiver module for radio transceiver frequencies not available in ConnexLink line.

Factory settings are also adjusted thru this mode.

RADIO MODEM Mode

Before using this mode, the appropriate antenna must be connected to the threaded RP SMA connector on the front face of the modem. Transmitter and Receiver must be separated by at least 10 feet.

The toggle switch located on the front of the modem that is labeled “RADIO”, “MODEM” and “RADIO MODEM” is used to select this mode. The switch must be set to the lower position for RADIO MODEM mode. A quick visual check will show both the RADIO LED and the MODEM LED illuminated with some combination of RED and GREEN.

When set to this mode, the modem communicates with the radio only.

This mode of operation, especially set as a transmitter is the primary configuration for this device. Basic operation in RADIO MODEM mode as a transmitter requires the input of the analog Timecode signal applied to the RCA input jack on the back side of the modem. The modem converts the input audio Timecode to serial data which is then transmitted by the radio section to a remote receiver. The remote receiver unit then passes the serial information on to the end user device. The input audio can be monitored thru the internal amplified speaker to verify that the correct audio content is going to the modem section.

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If two radio modems are used, one as a transmitter and the other as a receiver, the remote transmission of audio Timecode is possible. The radio transmission of the signal is in a digital format that is less susceptible to signal distortion by external sources.

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Using the Pyromate Wireless Modem

With a Smarthawk/Nighthawk firing system

There are three possible Nighthawk Timecode setups.

Modem / Nighthawk serial port

Required items:

1. Pyromate Wireless Modem
2. Modem power supply cable
3. Straight thru DB9 male/male ended serial cable
4. Male ended RCA cable
5. Audio source of Timecode

Checklist

1. Set the slide switch under the RS232 connector of the modem to NH.
2. Set the modem mode switch to the center position, for Modem only operation.
3. Attach the power supply cable either to the Nighthawk or to a 12V DC power source.
4. Attach the serial cable from the modem RS232 connector to the serial port connector of the Nighthawk firing panel.
5. Attach the modem to the audio Timecode source using the RCA cable.
6. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
7. Verify that the Power On LED sequence occurred and that the MODEM status LED is the only one illuminated. If no audio is provided, the MODEM status must be *red*.
8. Turn on the Timecode audio source and start it.
9. Timecode should become audible from the modem and the MODEM status LED should turn green if the Timecode audio signal is high enough.
10. The DATA status LED should be flickering green when Timecode is present.
11. With the Nighthawk on, step to and select the "View Timecode" mode.
12. When valid Timecode is detected by the Nighthawk, the top line of the display will show the number of errors detected and the current Time code of the source signal. There should be zero errors or at most 1 error over the span of the test.
13. At show time, insert the remote fire control.
14. Arm the firing system and select the "SYNC'ED FIRE" mode.
15. Press the HOLD FIRE button on the remote.
16. Press the FIRE trigger on the remote to wait for Timecode.
17. Verify that the modem is in the correct mode and powered up.
18. When the audio starts, verify that the MODEM status LED turns green and that audible Timecode can be heard from the modem.
19. Verify that the Nighthawk detects valid Timecode and starts the show time clock.
20. A lower case 's' will be visible next to the battery voltage on the top line of the nighthawk display as long as valid Timecode records are received.

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Wireless Modem / ConnexLink Module / Nighthawk serial port

Required items:

1. Pyromate Wireless Modem set as a Transmitter
2. Wireless Modem Antenna
3. Wireless Modem power supply
4. Male ended RCA cable
5. Audio source of Timecode
6. ConnexLink Receiver module
7. ConnexLink antenna
8. Modem power supply cable
9. DB9 Male/Female Null modem serial cable

Checklist

1. Attach the modem antenna
2. Set the modem mode switch to the lower position, for Radio Modem operation.
3. Attach the modem to the 12V DC power source.
4. Attach the modem to the audio Timecode source using the RCA cable.
5. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
6. Verify the Power On LED sequence occurred and the RADIO and MODEM status lights are illuminated. The RADIO status LED must be *solid red* to indicate that modem is a transmitter. If no audio is provided, the MODEM status LED must be *red*.
7. Turn on the Timecode audio source and start it.
8. Timecode should become audible from the modem and the MODEM status should turn *green* if the Timecode signal audio signal is high enough.
9. The DATA status LED should be *flickering green* when Timecode is present.
10. Attach the ConnexLink Modules' antenna.
11. Attach ConnexLink power supply cable either to the Nighthawk or to a 12V DC power source.
12. The Null modem serial cable is attached from the ConnexLink RS232 connector to the serial port connector of the Nighthawk firing panel.
13. With the Nighthawk turned on, step to and select the "View Timecode" mode.
14. Turn power to the ConnexLink module and verify that the PWR and LINK status LEDs turn on.
15. The ConnexLink Rx status LED should be *flickering green* indicating that the module is receiving Timecode data from the transmitter.
16. When valid Timecode is detected by the Nighthawk, the top line of the display will show the number of errors detected and the current Time code of the source signal. There should be zero errors or at most 1 error over the span of the test.
17. At show time, insert the remote fire control.
18. Arm the firing system and select the "SYNC'ED FIRE" mode.
19. Press the HOLD FIRE button on the remote.
20. Press the FIRE trigger on the remote to wait for Timecode.
21. Verify the modem is in the correct mode and powered up.

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22. When the audio starts, verify that the MODEM status LED turns *solid green* and that audible Timecode can be heard from the modem.
23. Verify that the Nighthawk detects valid Timecode and starts the show time clock.
24. A lower case 's' will be visible next to the battery voltage on the top line of the nighthawk display as long as valid Timecode records are received.

Wireless Modem / Wireless Modem / Nighthawk serial port

Required items:

1. Pyromate Wireless Modem set as a Transmitter
2. Wireless Modem Antenna
3. Wireless Modem power supply
4. Male ended RCA cable
5. Audio source of Timecode
6. Pyromate Wireless Modem set as a Receiver
7. Wireless Modem Antenna
8. Wireless Modem power supply cable
9. Straight thru DB9 male/male ended serial cable

Checklist

1. Attach the antenna for Wireless Modem Transmitter.
2. Set the Modem mode switch to the lower position, for Radio Modem operation.
3. Attach the Wireless Modem Transmitter to the 12V DC power source.
4. Attach the Transmitter to the audio Timecode source using the RCA cable.
5. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
6. Verify the Power On LED sequence occurred and the RADIO and MODEM status lights are illuminated. The RADIO status LED must be *solid red* to indicate that modem is a transmitter. If no audio is provided, the MODEM status LED must be *red*.
7. Turn on the Timecode audio source and start it.
8. Timecode should become audible from the modem and the MODEM status LED should turn *green* if the Timecode signal audio signal is high enough.
9. The DATA status LED should be *flickering green* when Timecode is present.
10. Attach the antenna for the Wireless Modem Receiver.
11. Set the slide switch under the RS232 connector of the Receiver modem to NH.
12. Set the modem mode switch to the upper position, for Radio link operation.
13. Attach Receiver power supply cable either to the Nighthawk or to a 12V DC power source.
14. The male/male serial cable is attached from the Wireless Modem Receiver RS232 connector to the serial port connector of the Nighthawk firing panel.
15. With the Nighthawk turned on, step to and select the "View Timecode" mode.
16. Turn power to the Receiver module and verify that the RADIO status turns a *solid green* and MODEM status LED is *red*.
17. The Receiver modem DATA status LED should be *flickering red* indicating that the module is receiving Timecode data from the transmitter.

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18. When valid Timecode is detected by the Nighthawk, the top line of the display will show the number of errors detected and the current Time code of the source signal. There should be zero errors or at most 1 error over the span of the test.
19. At show time, insert the remote fire control.
20. Arm the firing system and select the “SYNC’ED FIRE” mode.
21. Press the HOLD FIRE button on the remote.
22. Press the FIRE trigger on the remote to wait for Timecode.
23. Verify the Transmitter and Receiver modems are in the correct mode and powered up.
24. Verify that the Receiver Modem RADIO status LED is *solid green*, not flashing.
25. When the audio starts, verify that the Transmitter MODEM status LED turns green and that audible Timecode can be heard from the modem.
26. Verify that the Nighthawk detects valid Timecode and starts the show time clock.
27. A lower case ‘s’ will be visible next to the battery voltage on the top line of the nighthawk display as long as valid Timecode records are received.

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With a Smartfire firing system

There are three possible Smartfire Timecode setups.

Modem / Smartfire serial port

Required items:

1. Pyromate Wireless Modem
2. Modem power supply cable
3. Straight thru DB9 male/male ended serial cable
4. Male ended RCA cable
5. Audio source of Timecode

Checklist

1. Set the slide switch under the RS232 connector of the modem to COMP.
2. Set the modem mode switch to the center position, for Modem only operation.
3. Attach the power supply cable either to the Nighthawk or to a 12V DC power source.
4. Attach the serial cable from the modem RS232 connector to the correct serial port of the computer running the Smart Show software.
5. Attach the modem to the audio Timecode source using the RCA cable.
6. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
7. Verify that the Power On LED sequence occurred and that the MODEM status light is the only one illuminated. If no audio is provided, the MODEM status LED must be *red*.
8. Turn on the Timecode audio source and start it.
9. Timecode should become audible from the modem and the MODEM status LED should turn *green* if the Timecode audio signal is high enough.
10. The DATA status LED should be *flickering green* when Timecode is present.
11. Verify that the firing modules ***are not*** connected to the firing system.
12. With the Smart Show software running, select the fire mode.
13. When valid Timecode is detected by Smart Show, the display will show the current Time code of the source signal.
14. At show time, insert the remote fire control.
15. Verify that the firing modules ***are*** connected to the firing system.
16. Arm the firing system and select the "SYNC'ED FIRE" mode.
17. Press the HOLD FIRE button on the remote.
18. Press the FIRE trigger on the remote to wait for Timecode.
19. Verify that the modem is in the correct mode and powered up.
20. When the audio starts, verify that the MODEM status LED turns *solid green* and that audible Timecode can be heard from the modem.
21. Verify that Smart Show detects valid Timecode and starts the show time clock.

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Wireless Modem / ConnexLink Module / Smartfire serial port

Required items:

1. Pyromate Wireless Modem set as a Transmitter
2. Wireless Modem Antenna
3. Wireless Modem power supply
4. Male ended RCA cable
5. Audio source of Timecode
6. ConnexLink Receiver module
7. ConnexLink antenna
8. ConnexLink power supply cable
9. DB9 Male/Female straight thru serial cable

Checklist

1. Attach the modem antenna
2. Set the modem mode switch to the lower position, for Radio Modem operation.
3. Attach the modem to the 12V DC power source.
4. Attach the modem to the audio Timecode source using the RCA cable.
5. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
6. Verify the Power On LED sequence occurred and the RADIO and MODEM status lights are illuminated. The RADIO status LED must be *solid red* to indicate that modem is a transmitter. If no audio is provided, the MODEM status must be *red*.
7. Turn on the Timecode audio source and start it.
8. Timecode should become audible from the modem and the MODEM status LED should turn *solid green* if the Timecode audio signal is high enough.
9. The DATA status LED should be *flickering green* when Timecode is present.
10. Attach the ConnexLink Modules' antenna.
11. Attach ConnexLink power supply cable either to the Nighthawk or to a 12V DC power source.
12. The straight thru serial cable is attached from the ConnexLink RS232 connector to the correct serial port of the computer running the Smart Show software.
13. Turn power to the ConnexLink module and verify that the PWR and LINK status LEDs turn on.
14. The ConnexLink Rx status LED should be *flickering green* indicating that the module is receiving Timecode data from the transmitter.
15. Verify that the firing modules ***are not*** connected to the firing system.
16. With the Smart Show software running, select the fire mode.
17. When valid Timecode is detected by Smart Show, the display will show the current Time code of the source signal.
18. At show time, insert the remote fire control.
19. Verify that the firing modules ***are*** connected to the firing system.
20. Arm the firing system and select the "SYNC'ED FIRE" mode.
21. Press the HOLD FIRE button on the remote.
22. Press the FIRE trigger on the remote to wait for Timecode.
23. Verify the modem is in the correct mode and powered up.

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24. When the audio starts, verify that the MODEM status LED turns *solid green* and that audible Timecode can be heard from the modem.
25. Verify that Smart Show detects valid Timecode and starts the show time clock.

Wireless Modem / Wireless Modem / Smartfire serial port

Required items:

1. Pyromate Wireless Modem set as a Transmitter
2. Wireless Modem Antenna
3. Wireless Modem power supply
4. Male ended RCA cable
5. Audio source of Timecode
6. Pyromate Wireless Modem set as a Receiver
7. Wireless Modem Antenna
8. Wireless Modem power supply cable
9. Straight thru DB9 male/male ended serial cable

Checklist

1. Attach the antenna for Wireless Modem Transmitter.
2. Set the Modem mode switch to the lower position, for Radio Modem operation.
3. Attach the Wireless Modem Transmitter to the 12V DC power source.
4. Attach the Transmitter to the audio Timecode source using the RCA cable.
5. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
6. Verify the Power On LED sequence occurred and the RADIO and MODEM status lights are illuminated. The RADIO status LED must be *solid red* to indicate that modem is a transmitter. If no audio is provided, the MODEM status must be *red*.
7. Turn on the Timecode audio source and start it.
8. Timecode should become audible from the modem and the MODEM status LED should turn *green* if the Timecode audio signal is high enough.
9. The DATA status LED should be *flickering green* when Timecode is present.
10. Attach the antenna for the Wireless Modem Receiver.
11. Set the slide switch under the RS232 connector of the Receiver modem to NH.
12. Set the modem mode switch to the upper position, for Radio link operation.
13. Attach Receiver power supply cable either to the Nighthawk or to a 12V DC power source.
14. Attach the serial cable from the modem RS232 connector to the correct serial port of the computer running the Smart Show software.
15. With the Nighthawk on, step to and select the "View Timecode" mode.
16. Turn power to the Receiver module and verify that the RADIO status turns a *solid green* and MODEM status LED is *red*.
17. The Receiver modem DATA status LED should be *flickering red* indicating that the module is receiving Timecode data from the transmitter.
18. Verify that the firing modules ***are not*** connected to the firing system.
19. With the Smart Show software running, select the fire mode.

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20. When valid Timecode is detected by Smart Show, the display will show the current Time code of the source signal.
21. At show time, insert the remote fire control.
22. Verify that the firing modules are connected to the firing system.
23. Arm the firing system and select the "SYNC'ED FIRE" mode.
24. Press the HOLD FIRE button on the remote.
25. Press the FIRE trigger on the remote to wait for Timecode.
26. Verify the modem is in the correct mode and powered up.
27. When the audio starts, verify that the MODEM status LED turns green and that audible Timecode can be heard from the modem.
28. Verify that Smart Show detects valid Timecode and starts the show time clock.

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With a Analog Input Timecode firing system

Wireless Modem / Wireless Modem / Analog input of firing system

Required items:

1. Pyromate Wireless Modem set as a Transmitter
2. Wireless Modem Antenna
3. Wireless Modem power supply
4. two - Male ended RCA cables
5. Audio source of Timecode
6. Pyromate Wireless Modem set as a Receiver
7. Wireless Modem Antenna
8. Wireless Modem power supply

Checklist

1. Attach the antenna for Wireless Modem Transmitter.
2. Set the Modem mode switch to the lower position, for Radio Modem operation.
3. Attach the Wireless Modem Transmitter to the 12V DC power source.
4. Attach the Transmitter to the audio Timecode source using the RCA cable.
5. Turn on the power source for the modem and then turn on the Modem using the OFF/volume knob on the right front face of the modem. Rotate the knob to the 12 o'clock position.
6. Verify the Power On LED sequence occurred and the RADIO and MODEM status lights are illuminated. The RADIO status LED must be *solid red* to indicate that modem is a transmitter. If no audio is provided, the MODEM status LED must be *red*.
7. Turn on the Timecode audio source and start it.
8. Timecode should become audible from the modem and the MODEM status LED should turn *green* if the Timecode audio signal is high enough.
9. The DATA status LED should be *flickering green* when Timecode is present.
10. Attach the antenna for the Wireless Modem Receiver.
11. Set the slide switch under the RS232 connector of the Receiver modem to NH.
12. Set the modem mode switch to the lower position, for RADIO MODEM operation.
13. Attach Receiver power supply cable either to the Nighthawk or to a 12V DC power source.
14. The Receiver Modem is attached to the firing system using the RCA cable.
15. With the firing system on, step to and select the "Timecode test" mode.
16. Turn power to the Receiver module and verify that the RADIO status turns a *solid green* and MODEM status LED is *red*.
17. The Receiver modem DATA status LED should be *flickering red* indicating that the module is receiving Timecode data from the transmitter.
18. When valid Timecode is detected, the firing system should be able to show the number of errors detected and the current Time code of the source signal. There should be zero errors or at most 1 error over the span of the test.
19. At show time, insert the remote fire control.
20. Arm the firing system and select the "SYNC'ED FIRE" mode.
21. Press the HOLD FIRE button on the remote.

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22. Press the FIRE trigger on the remote to wait for Timecode.
23. Verify the Transmitter and Receiver modems are in the correct mode and powered up.
24. Verify that the Receiver Modem RADIO status LED is *solid green*, not flashing.
25. When the audio starts, verify that the Transmitter MODEM status LED turns green and that audible Timecode can be heard from the modem.
26. Verify that the firing system detects valid Timecode and start the show time clock.