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## STX External Exciter Kit Application Guide

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## **STX External Exciter Kit**

### **Application Guide**

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# Table of Contents

- 1 STX External Exciter Kit ..... 1**
  - 1.1 Overview of Installing the External Exciter Kit. .... 1**
  
- 2 Installation Preparation..... 1**
  - 2.1 Overview / Estimated Completion Time For the Upgrade ..... 1**
  - 2.2 Items / Tools required for the Upgrade Process ..... 1**
  
- 3 Install the External Exciter Kit ..... 1**
  
- 4 Verify Operation ..... 5**
  
- 5 RF Technical Services Contact Information ..... 9**





# 1 STX External Exciter Kit

## 1.1 Overview of Installing the External Exciter Kit.

The STX External Exciter kit is used to interface an external exciter to the STX LP transmitter. The kit provides an interface cable, RF cable and an attenuator. The attenuator is crucial to prevent over powering the RF input to the STX LP transmitter. Verify your external exciter will operate reliably at 10 watts. Additional attenuation (4dB) will be needed for exciters operating at 25 watts output.

# 2 Installation Preparation

## 2.1 Overview / Estimated Completion Time For the Upgrade

The External Exciter kit installation will take about 20 minutes to install. It entails connecting a control cable, -20dB attenuator and RF cable between the STX and the External Exciter.

## 2.2 Items / Tools required for the Upgrade Process

- Small slot Screwdriver
- 979-4603 External Exciter Kit (FXi-60)
- OR
- 979-4603-001 External Exciter Kit (FX-50/FM-100C)

# 3 Install the External Exciter Kit



**CAUTION: ENSURE THE EXTERNAL EXCITER FORWARD POWER IS REDUCED TO 10 WATTS FORWARD PRIOR TO TURNING UNIT OFF IN PREPARATION OF KIT INSTALLATION. FAILURE TO DO SO COULD CAUSE THE POWER TO EXCEED SAFE LEVELS INTO THE STX RESULTING IN EQUIPMENT DAMAGE.**

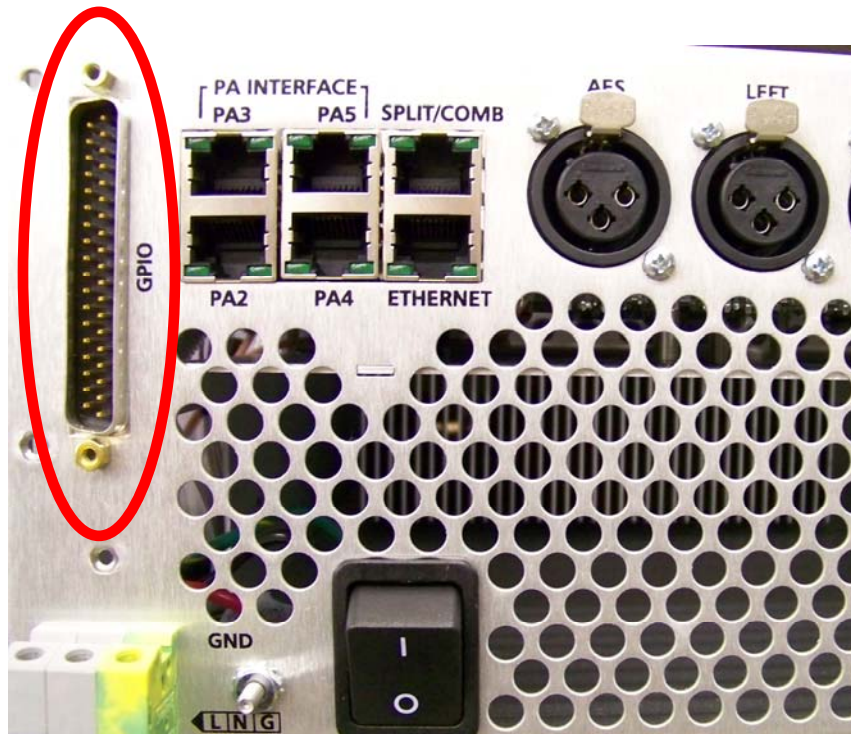
1. Turn OFF the STX transmitter.
2. Reduce the External Exciter power output to 10 watts. This may require you to connect the External Exciter to a suitably sized 50  $\Omega$  load to do so. It is preferable that you use an external power meter to ensure the power is 10 watts.
3. Turn OFF the External Exciter.
4. Disconnect all transmitter and External Exciter primary power.



**WARNING: ENSURE ALL PRIMARY POWER IS DISCONNECTED BEFORE PROCEEDING**

5. Locate the External Exciter within close distance of the STX transmitter. Above or below the combiner for STX-2, STX-3 and STX-5 is recommended.

6. Refer to the STX Quick Installation Guide 597-4101 section 6, or the Instruction manual 597-4102 section 5 for details on connecting the External Exciter.
7. Disconnect the short RF cable on the rear of the STX from the internal EXC RF OUT to the PA RF IN.
8. Connect the -20dB attenuator to the RF output connector of the Exciter using supplied adapters and cable as needed. Ensure the Exciter power has been lowered to 10 watts. The attenuator will reduce the 10 watts to 100mw which is the safe level for the input to the STX PA RF IN connector. DO NOT EXCEED 100 mw. If your exciter's minimum output power specification is 25 watts, you will need to supply an additional 4dB of attenuation, for a total of -24dB.
9. Use the N to BNC adaptor and RF cable provided to connect the attenuated RF from the External Exciter to the STX PA RF IN connector.
10. Locate the provided interface cable in the kit.
11. Connect one end to the STX GPIO connector on the rear of the unit.



**Figure 1**  
**STX GPIO connector**

12. The other end connects to the External Exciter. FXi Exciters will connect to J3 on the rear of the FXi Exciter. The FX-50, FM-100C/FM-250C will require a different cable and connects to a terminal strip. See figures 3 through 6 for a block diagram.

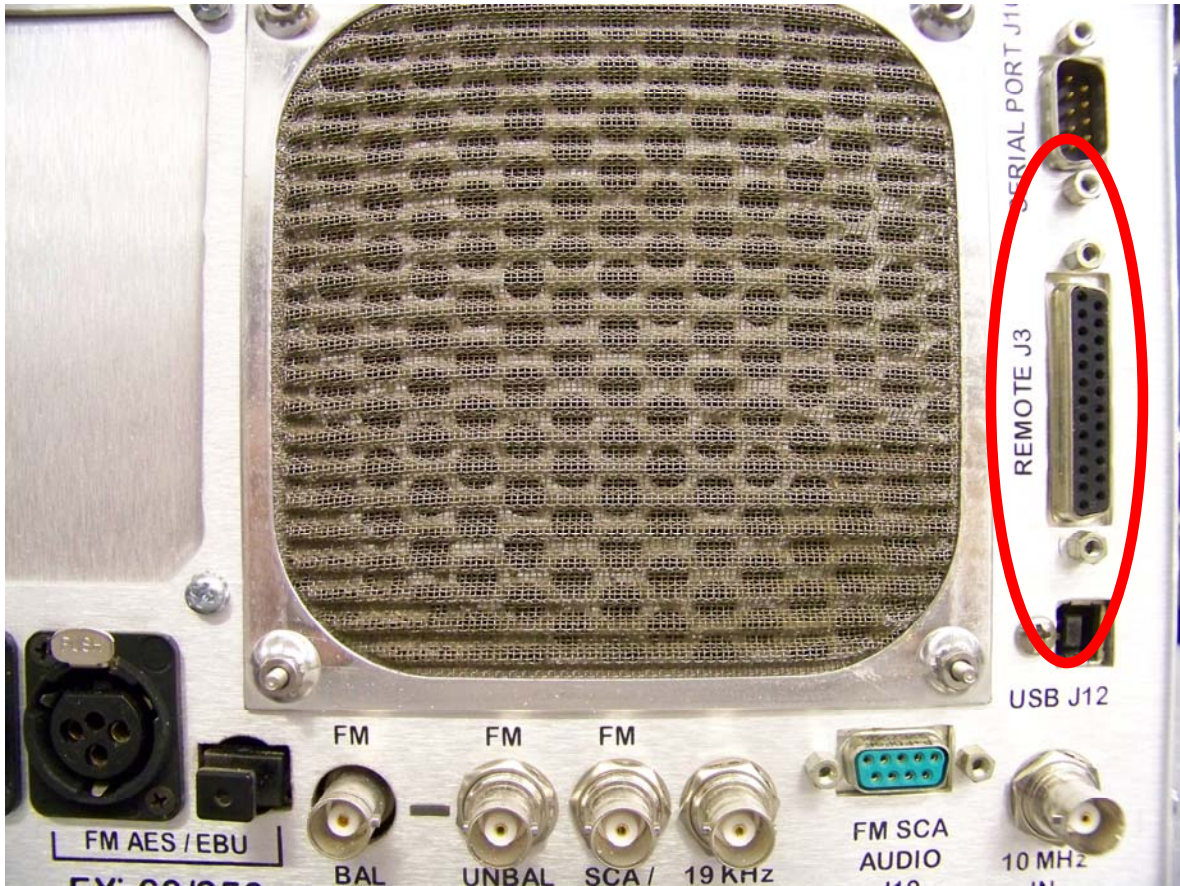
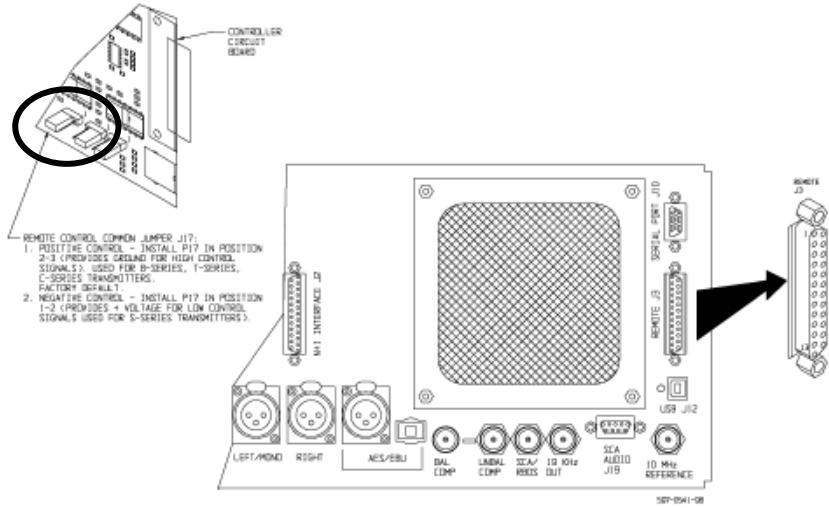


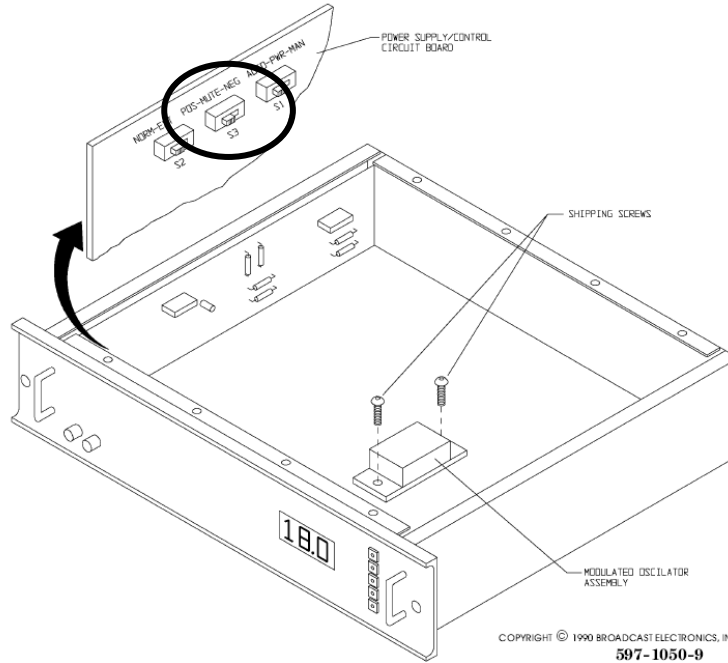
Figure 2  
FXi-60 rear panel J3 connector

13. Verify External Exciter mute logic level.

a. On the FXi-60/FXi-250 set J17 on the Controller to position 1-2.

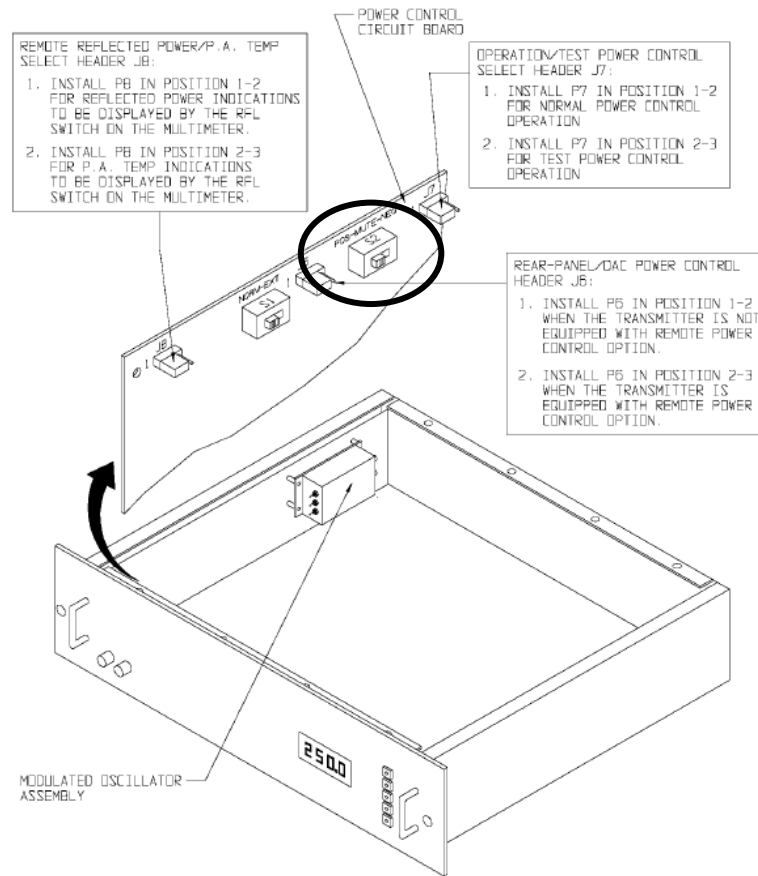


b. On the FX-50, FM-100C, Switch S3 on the Power supply Controller board must be switched to Negative logic.





c. On the FM-250C Switch S2 on the Power Control board must be switched to Negative logic.



## 4 Verify Operation

14. Connect the External Exciter and the STX to primary power.
15. With the transmitter MUTED, go in to the SETUP menu, select INT/EXT Exciter, and toggle it to EXTERNAL using the up/down arrow.
16. Turn on the External Exciter; verify the front of the Exciter indicates the power is 10 watts. (25 watts if you have added an additional 4dB pad).
17. Turn on the STX transmitter; verify proper operation.
18. The table listed below will assist you if you wish to add other functionality not related to this kit to the Exciter connection. Refer to the STX Instruction manual for additional STX I/O function not pertaining to this kit.

FX-50/FM-100C/FM-250C to STX LP External Exciter Interface					
FX-50/FM-100C/FM-250C		STX LP - GPIO			
J/Pin #	Pin Name	Pin #	IN OR OUT	Pin Name	Wire #
J2 - 1	AFC_NO	-	-	-	-
J2 - 2	AFC_COM	12	Out	GND	Green
J2 - 3	AFC_NC	2	IN	Fail Safe	Black
J2 - 4	Chassis GND	-	-	-	-
J2 - 5	AFC Voltage	-	-	-	-
J2 - 6	+20V	-	-	-	-
J2 - 7	RF Mute	24	Out	Mute Status	White
J2 - 8	Temp OL	-	-	-	-
J2 - 9	RF PWR MTR, FWD	-	-	-	-
J2 - 10	RF PWR MTR, RFL	-	-	-	-
J2 - 11	REM_RAISE	-	-	-	-
J2 - 12	REM_LOWER	-	-	-	-
J2 - 13	Mono Audio +	-	-	-	-
J2 - 14	Chassis GND	-	-	-	-
J2 - 15	Mono Audio -	-	-	-	-
J2 - 16	Chassis GND	-	-	-	-

Table 1  
FX-50, FM-100C/FM-250C Pin out



FXi to STX LP External Exciter Interface					
FXi-60/FXi-250		STX LP - GPIO			
J/Pin #	Pin Name	Pin #	IN OR OUT	Pin Name	Wire #
J3 - 1	AFC_NO	2	IN	Fail Safe	Black
J3 - 2	AFC_COM	12	Out	GND	Green
J3 - 3	AFC_NC	-	-	-	-
J3 - 4	FSI_STATUS	-	-	-	-
J3 - 5	REM_COMMON	-	-	-	-
J3 - 6	+12v	-	-	-	-
J3 - 7	+12v	-	-	-	-
J3 - 8	REM_FAULT (ACTIVE LOW)	-	-	-	-
J3 - 9	R_FWD_PWR	-	-	-	-
J3 - 10	R_RFL_PWR	-	-	-	-
J3 - 11	REM_RAISE	-	-	-	-
J3 - 12	REM_LOWER	-	-	-	-
J3 - 13	REM_RESET	-	-	-	-
J3 - 14	REM_UNMUTE	24	Out	Mute Status	White
J3 - 15	REM_SW_A	-	-	-	-
J3 - 16	REM_VSWR_FAULT (ACTIVE LOW)	-	-	-	-
J3 - 17	REM_ALARM (ACTIVE LOW)	-	-	-	-
J3 - 18	R_TOTAL_I	-	-	-	-
J3 - 19	+48VSAMPLE	-	-	-	-
J3 - 20	REM_SW_B (ACTIVE LOW)	-	-	-	-
J3 - 21	REM_PRI_IN	-	-	-	-
J3 - 22	REM_SEC_IN	-	-	-	-
J3 - 23	TRANS_PWR	35	Out	HD Power	Red
J3 - 24	GND	-	-	-	-
J3 - 25	GND	-	-	-	-

Table 2  
FXi pinout



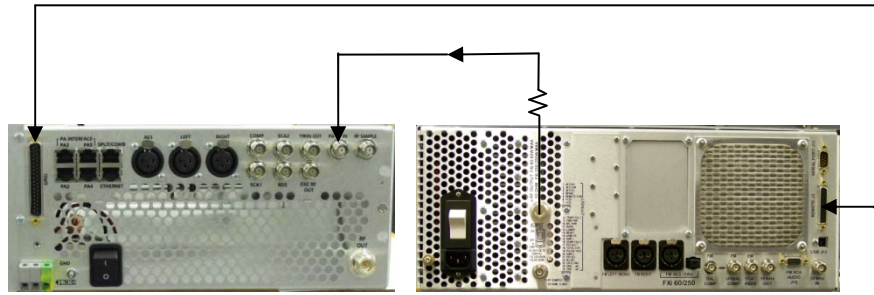


Figure 3  
STX-1 to FXi Interconnect  
(FXi-250 requires additional attenuation).

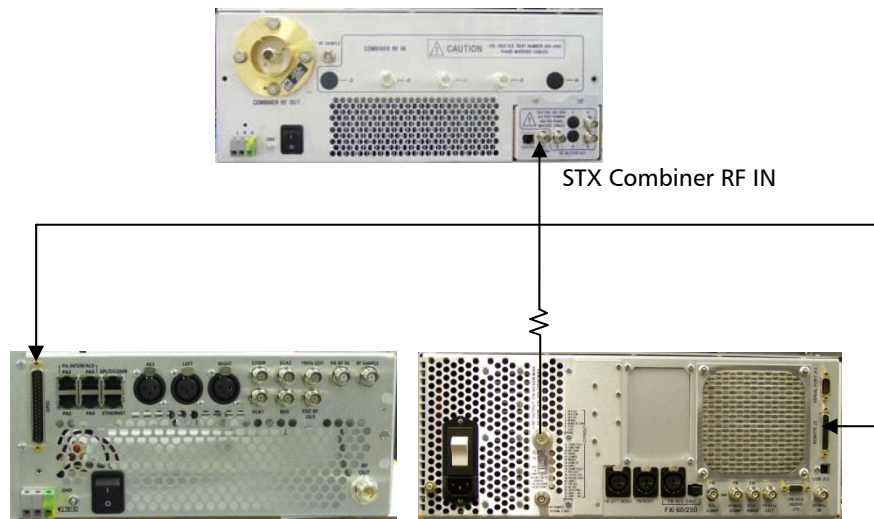


Figure 4  
STX-3/STX-5 to FXi Interconnect  
(FXi-250 requires additional attenuation).

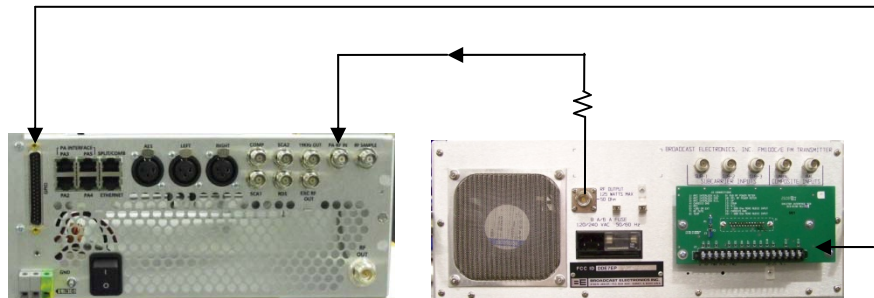


Figure 5  
STX-1 to FX-50, FM-100C, FM-250C Interconnect  
(FM-250C requires additional attenuation).



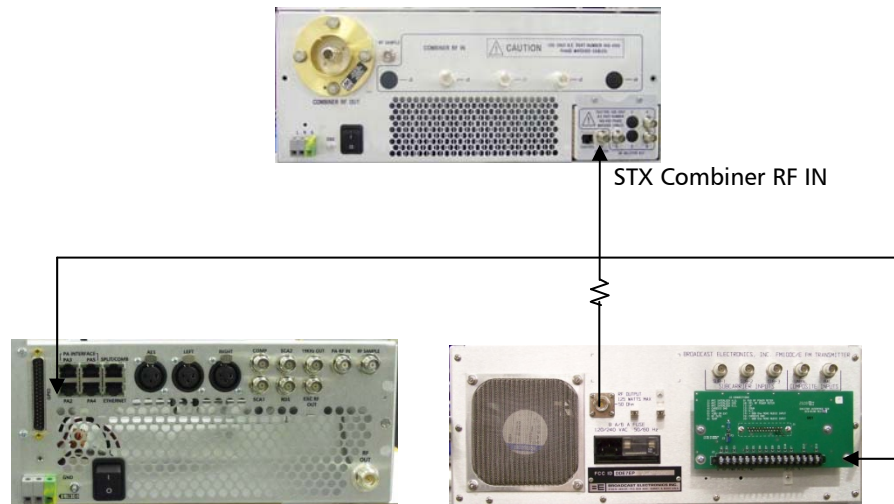


Figure 6  
 STX-3/STX-5 to FX-50, FM-100C, FM-250C Interconnect  
 (FM-250C requires additional attenuation).

## 5 RF Technical Services Contact Information

RF Technical Services -

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