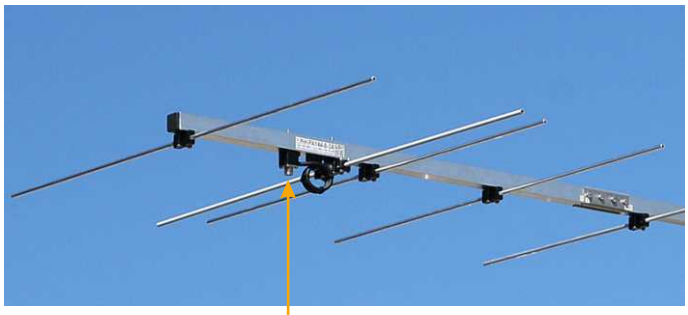
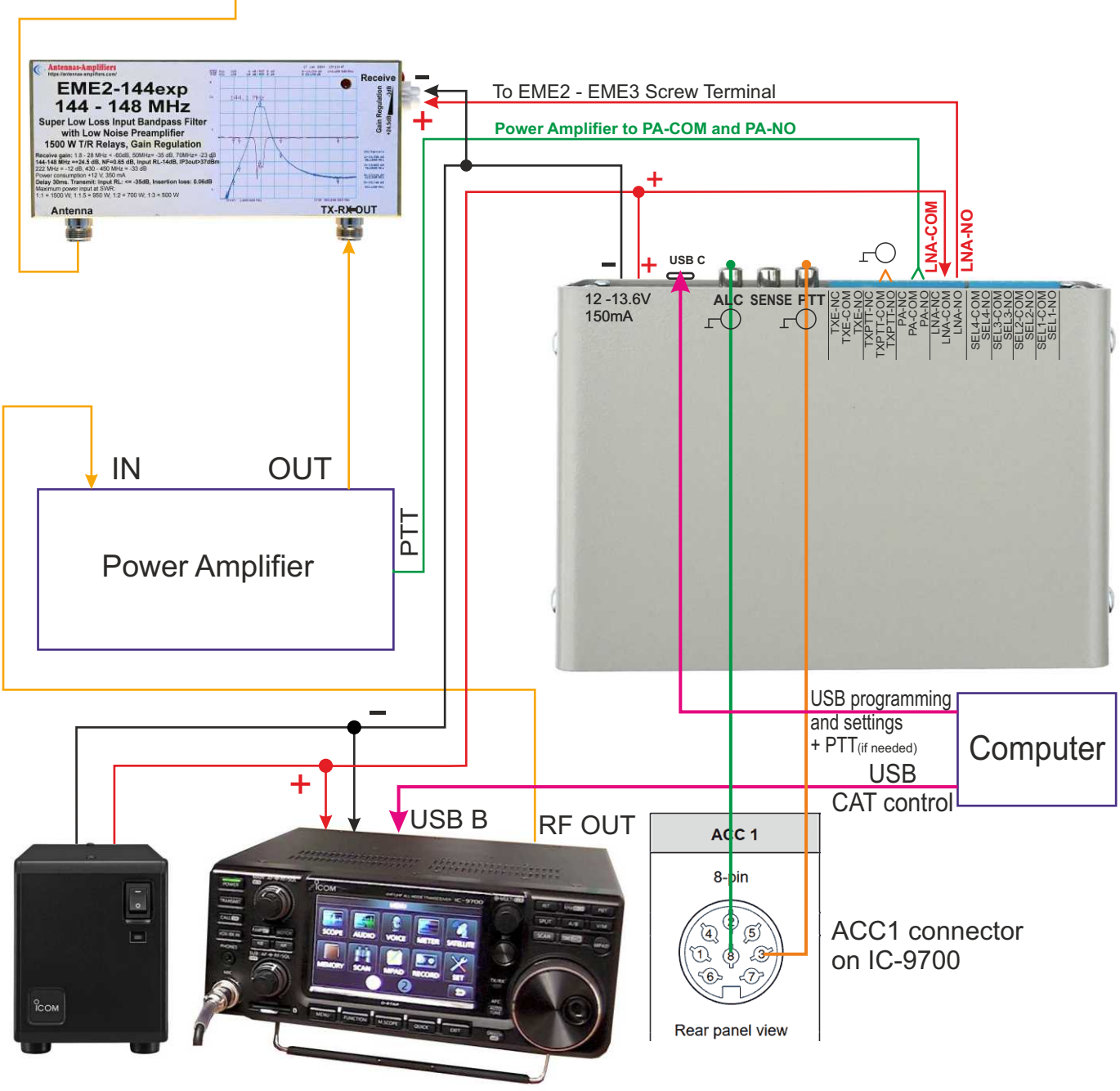
Antennas-Amplifiers

Connecting EME2, EME3 with Advanced Sequencer

V12

ALC Board Installed





To connect ACC1 with Advanced Sequencer use an RG-174 cable or a similar microphone cable.

Cables you need:

2+8 ALC to Sequencer

2+3 PTT to connect to PTT input on Sequencer

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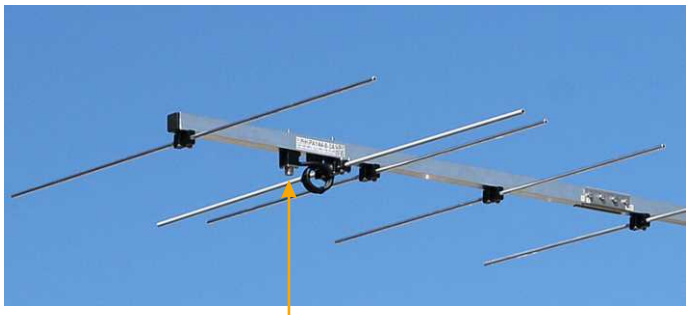
Antennas-Amplifiers

Connecting EME2, EME3 with Advanced Sequencer
ALC Board NOT Installed



PTT
Computer

Foot Switch

To EME2 - EME3 Screw Terminal

Power Amplifier to PA-COM and PA-NO

LNA-COM
LNA-NO

12 -13.6V VDC
150mA

SENSE PTT

TXE-NC TXE-COM TXE-NO TXPTT-NC TXPTT-COM TXPTT-NO PA-NC PA-COM PA-NO LNA-NC LNA-COM LNA-NO SEL4-COM SEL4-NO SEL3-COM SEL3-NO SEL2-COM SEL2-NO SEL1-COM SEL1-NO

Rig TXPTT-COM and TXPTT-NO

IN
OUT

Power Amplifier

PTT

PTT
RF OUT

Mic

GND PTT
PTT

GND PTT
PTT

GND+PTT wire

PTT, VOX, or CW keyer that utilizes the VOX function must be prevented. These features must not be used.
The VOX operation activates the radio internally, which prevents the use of the Advanced Sequencer.
The same restriction applies when using a hand microphone unless you connect the microphone's PTT wires to the PTT input on the Sequencer. In this case, you should use the Sequencer's PTT output to operate the radio's PTT.
It is important to note that the standard PTT connection on the radio microphone must not be used.

Make a small patch male/female microphone cable in which you will copy all the wires from the microphone except the PTT wire. Lead the PTT wires from Mic plug to Advanced Sequencer PTT or use Headset with foot switch. CW KEY VOX: OFF (must not be used).

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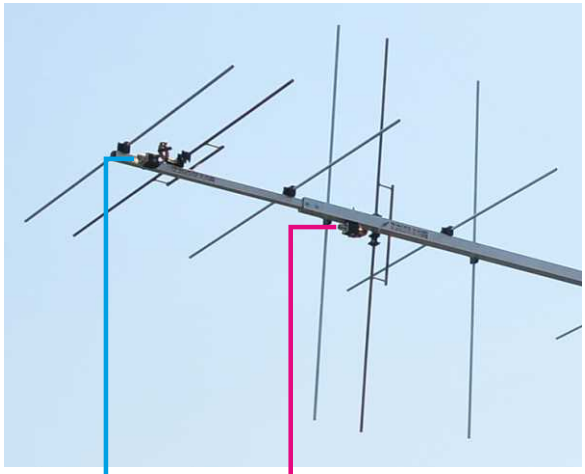
Antennas-Amplifiers

Connecting Advanced Sequencer With CROSS Polarization Switch H-V-RHCP

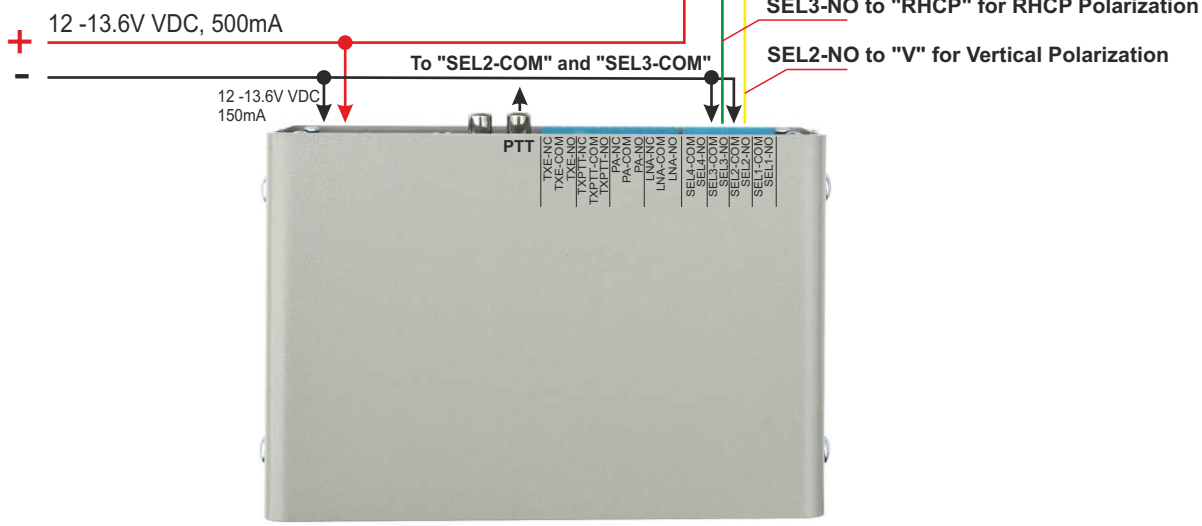
CROSS a Yagi that has both horizontal and vertical elements mounted in a "+" format



Single CROSS Antenna

Two the same length cables.

Connecting **Advanced Sequencer** With **CROSS** Polarization Switch **H-V-RHCP**



Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)

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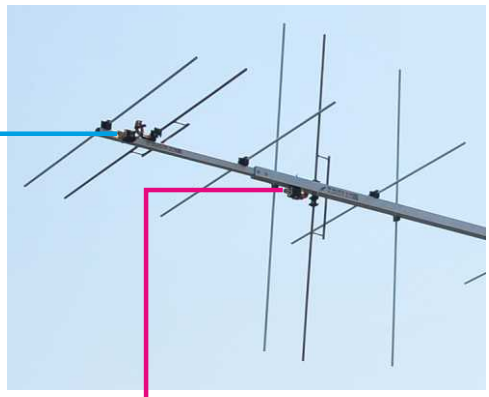
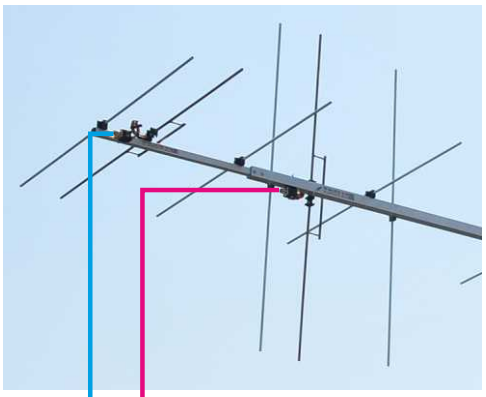
Antennas-Amplifiers

Connecting Advanced Sequencer With CROSS Polarization Switch H-V-RHCP

CROSS a Yagi that has both horizontal and vertical elements mounted in a "+" format





Four the same length cables.

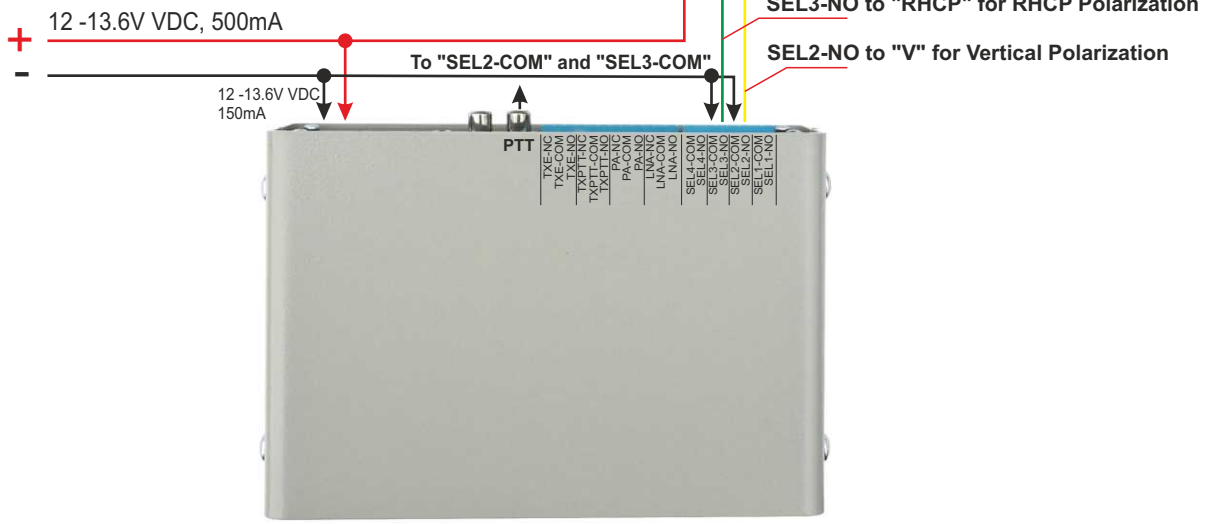
Two CROSS Antennas

2m 2-way Power Divider

2m 2-way Power Divider

Two the same length cables.

Connecting **Advanced Sequencer** With **CROSS** Polarization Switch **H-V-RHCP**



Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)

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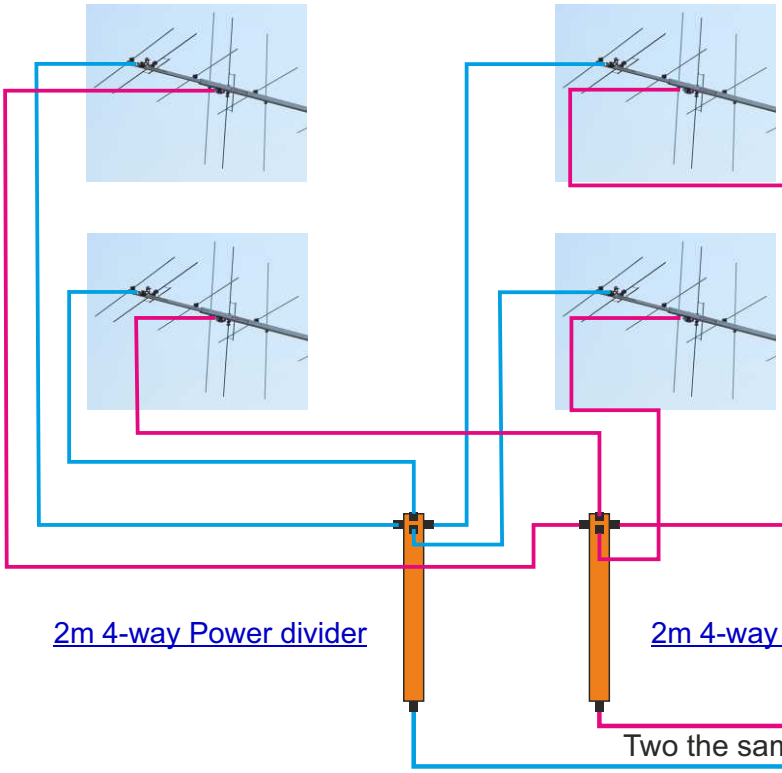
Antennas-Amplifiers

Connecting Advanced Sequencer With CROSS Polarization Switch H-V-RHCP

CROSS a Yagi that has both horizontal and vertical elements mounted in a "+" format



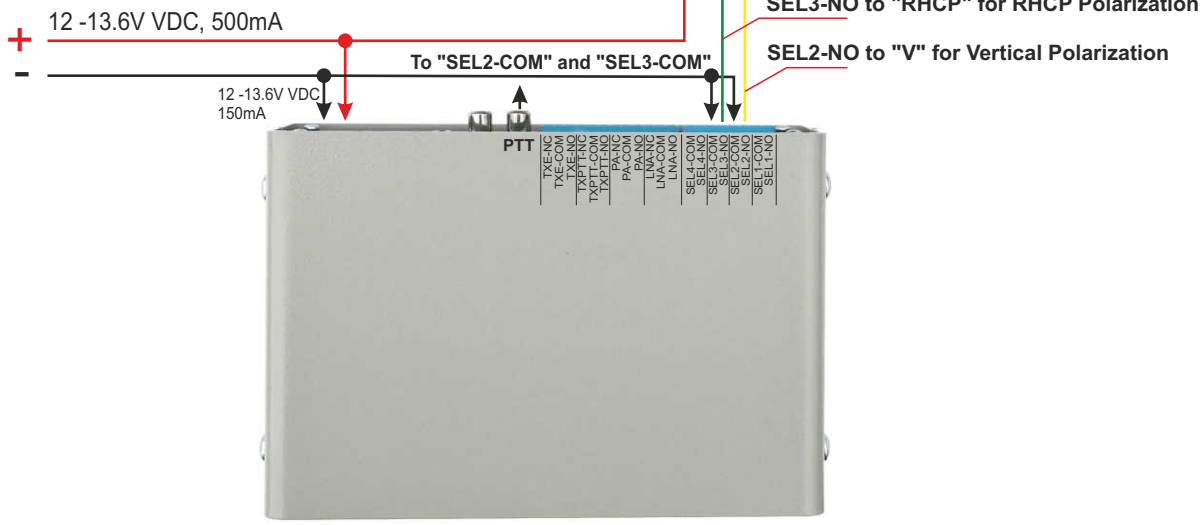
Eight the same length cables.

2m 4-way Power divider

2m 4-way Power divider

Two the same length cables.

Connecting **Advanced Sequencer** With **CROSS** Polarization Switch **H-V-RHCP**



Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)

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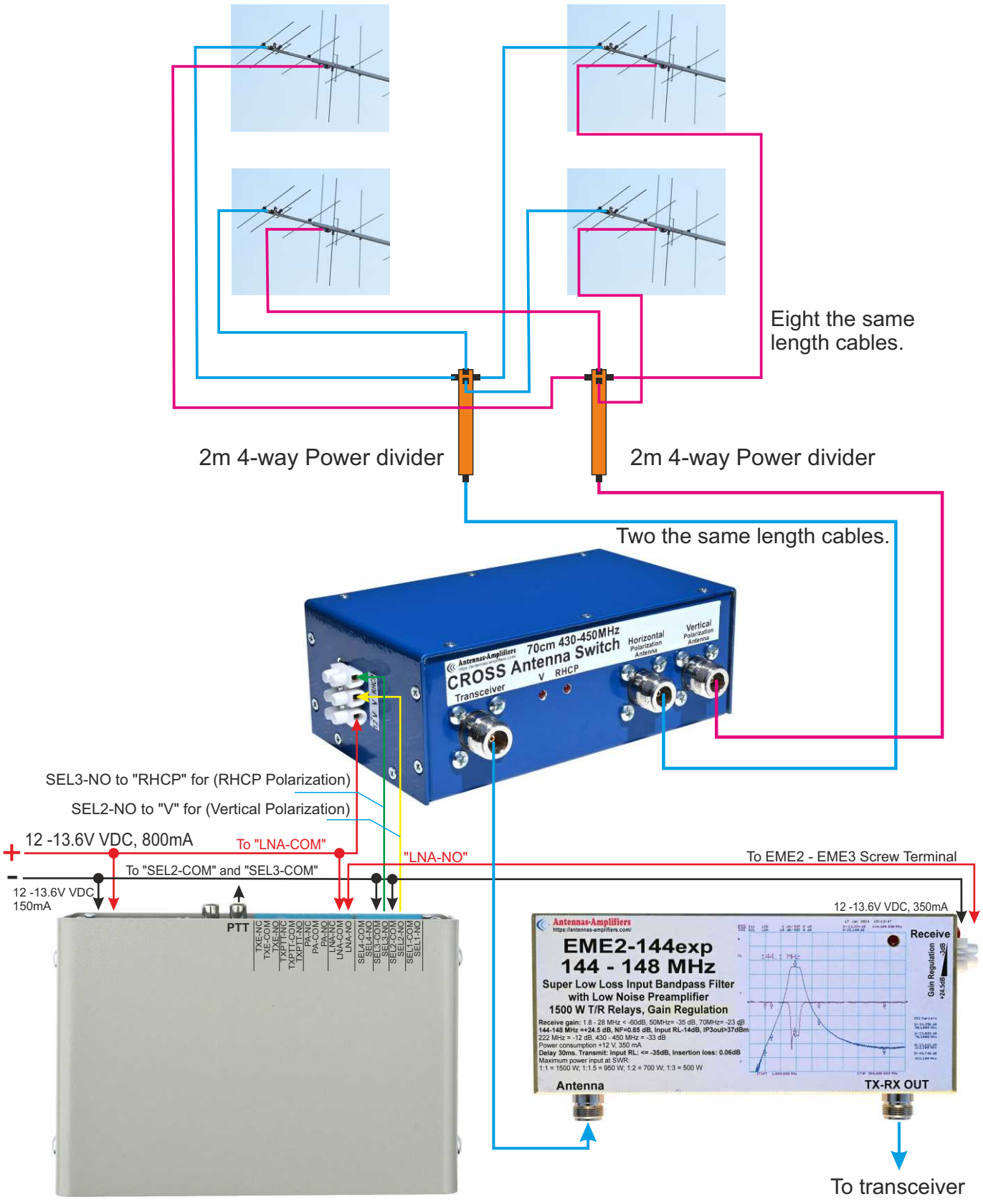
Connecting Advanced Sequencer With CROSS Polarization Switch H-V-RHCP And EME2-EME3



Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)

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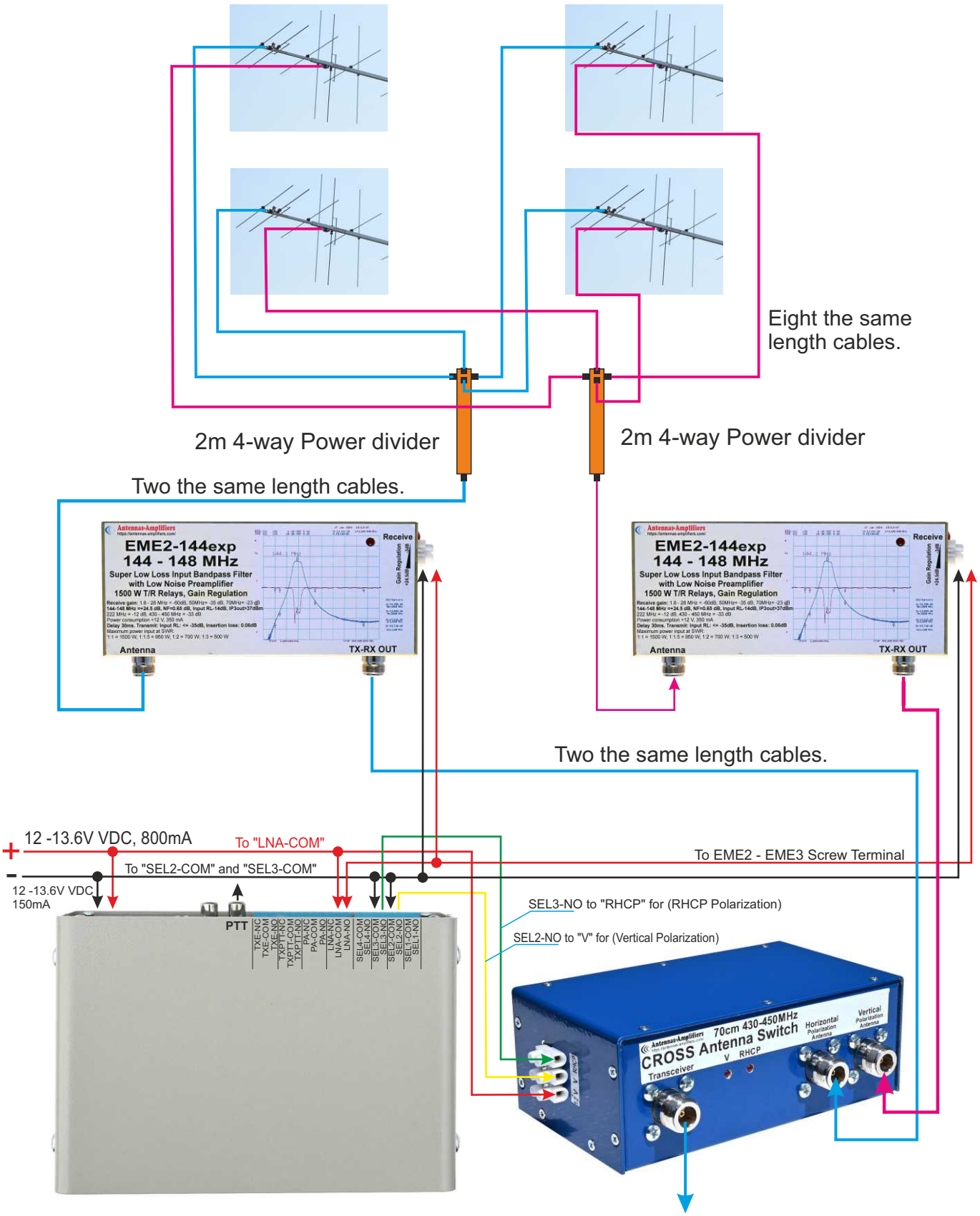
Connecting Advanced Sequencer With CROSS Polarization Switch H-V-RHCP And EME2-EME3 Lower Noise Combination



Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)

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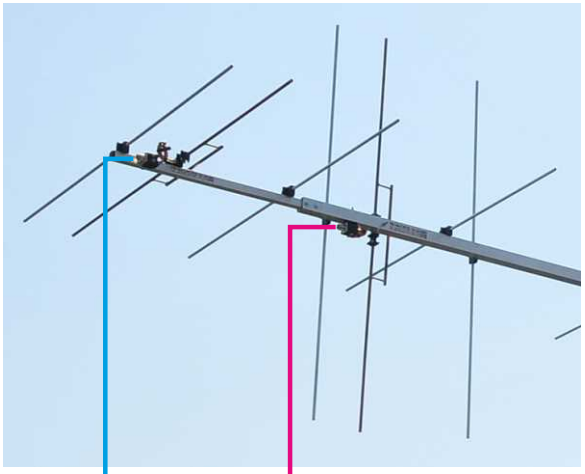
Antennas-Amplifiers

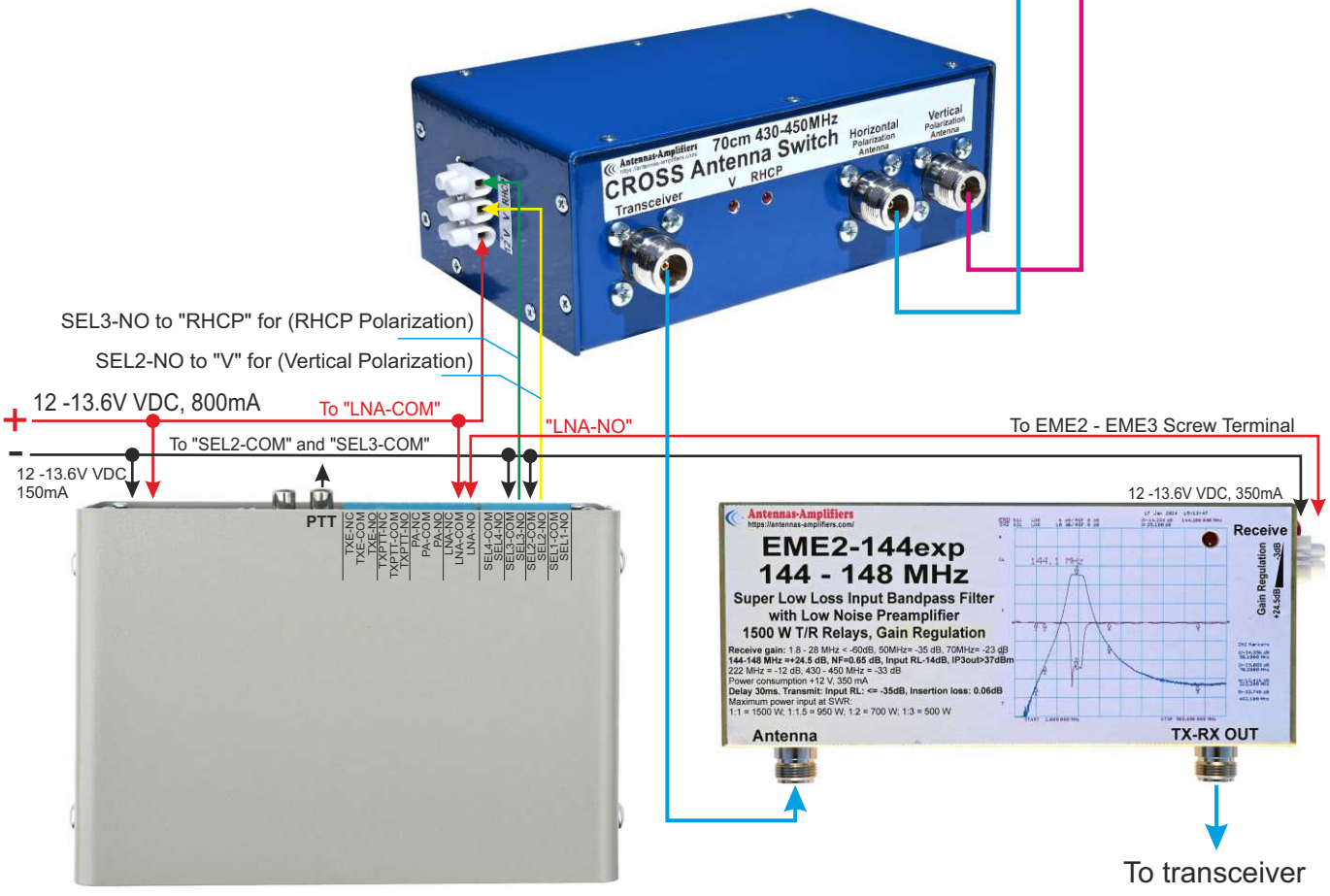
Connecting Advanced Sequencer with CROSS Polarization Switch and EME2-EME3

CROSS antenna. A Yagi that has both horizontal and vertical elements mounted in a "+" format



Single CROSS Antenna

Two the same length cables.



Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)

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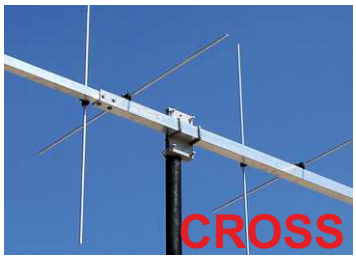
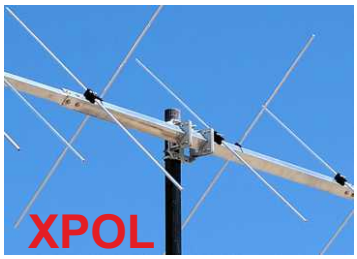
Antennas-Amplifiers

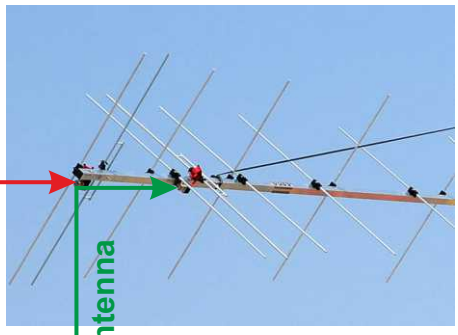
Connecting XPOL Switch with Advanced Sequencer

CROSS antenna. A Yagi that has both horizontal and vertical elements mounted in a "+" format
XPOL antenna. A Yagi that has 2 sets of elements oriented in an "X" format.
One set of elements is +45 degrees to the Earth, the other -45 degrees.





Connecting **Advanced Sequencer** With **XPOL** Polarization Switch **H-V-RHCP-LHCP**



-45° Antenna

Two the same length cables.

+45° Antenna

Antenna element placement

SEL4-NO to -180° (LHCP polarization)

SEL3 Not connected (RHCP is Default Polarization)

SEL2-NO to -90° (Vertical Polarization)

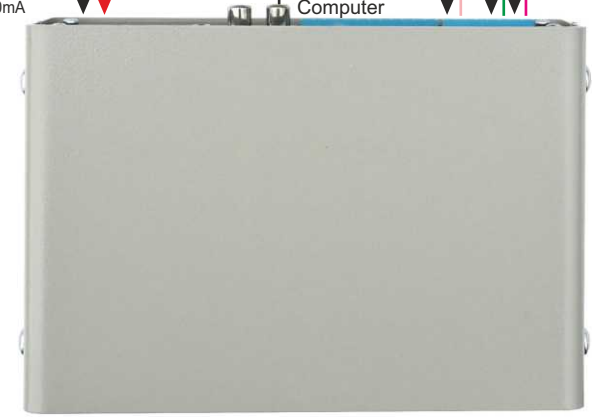
SEL1-NO to -90°-180° (Horizontal Polarization)

\+ 12 -13.6V VDC, 500mA

\- To"SEL1-COM", "SEL2-COM", "SEL4-COM"

12 -13.6V VDC 150mA

PTT to Computer



Polarization	Delay -90°	Delay -180°
Horizontal	ON	ON
Vertical	ON	OFF
RHCP	OFF	OFF
LHCP	OFF	ON

Horizontal Polarization - press "HOR" (SEL1)
Vertical Polarization press "VER" (SEL2)
RHCP Polarization press "RHCP" (SEL3)
LHCP Polarization press "LHCP" (SEL4)

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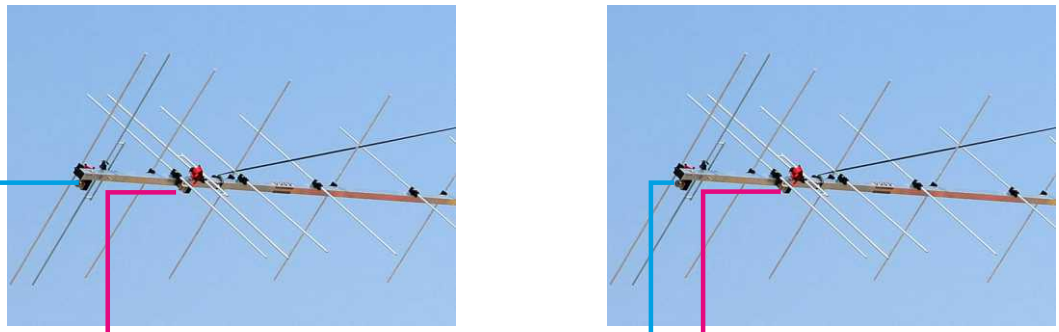
Connecting XPOL antennas with XPOL Switch H-V-RHCP-LHCP EME3 Super Low Noise Combination IC-9700 with Advanced Sequencer with ALC option installed, Power amplifier CAT control for two-channel receiving (Dual-Polarity Adaptive System)



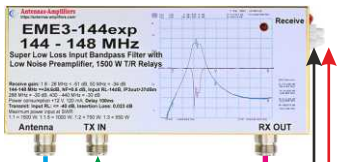
Four the same length cables.

Two XPOL Antennas

2m 2-way Power Divider

2m 2-way Power Divider

Two the same length cables.



-45° Antenna

Two the same length cables

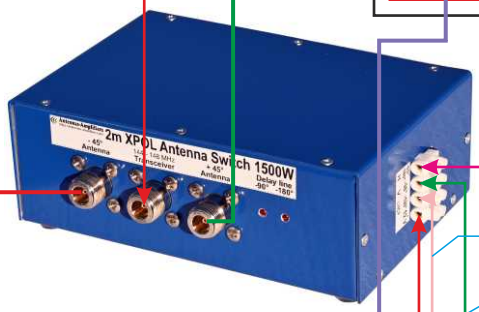
+45° Antenna

PTT
Power Amplifier
OUT IN

To Advanced Sequencer 12V teminal

USB B

RF OUT



SEL4 -180°- LHCP

SEL3 Not connected-RHCP

SEL2 -90° - Vertical

SEL1 -90°-180°-Horizontal

12 -13.6V VDC, 800mA

To"SEL1,2,4-COM"

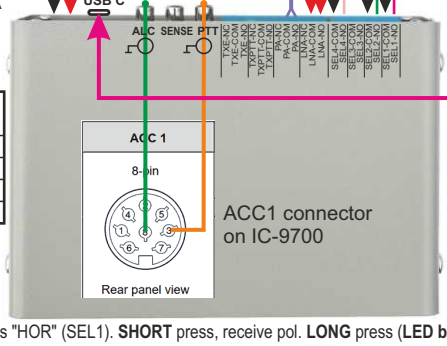
12 -13.6V VDC 150mA

USB C

ALC SENSE PTT

To EME3 Screw Terminal

Polarization	Delay -90°	Delay -180°
Horizontal	ON	ON
Vertical	ON	OFF
RHCP	OFF	OFF
LHCP	OFF	ON



ACC1 connector on IC-9700

USB programming and settings + PTT(if needed)

Computer

USB CAT control

Rx1 Rx2

Two-channel receiver (Dual-Polarity Adaptive System)

Horizontal Polarization - press "HOR" (SEL1). **SHORT** press, receive pol. **LONG** press (**LED blinks**), transmit pol.
Vertical Polarization press "VER" (SEL2). **SHORT** press, receive pol. **LONG** press (**LED blinks**), transmit polarization.
RHCP Polarization press "RHCP" (SEL3). **SHORT** press, receive pol. **LONG** press (**LED blinks**), transmit polarization.
LHCP Polarization press "LHCP" (SEL4). **SHORT** press, receive pol. **LONG** press (**LED blinks**), transmit polarization.

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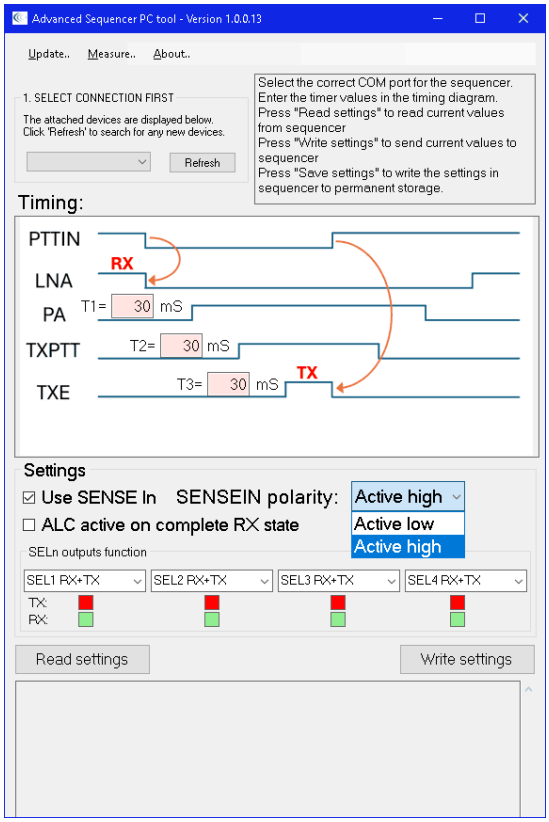
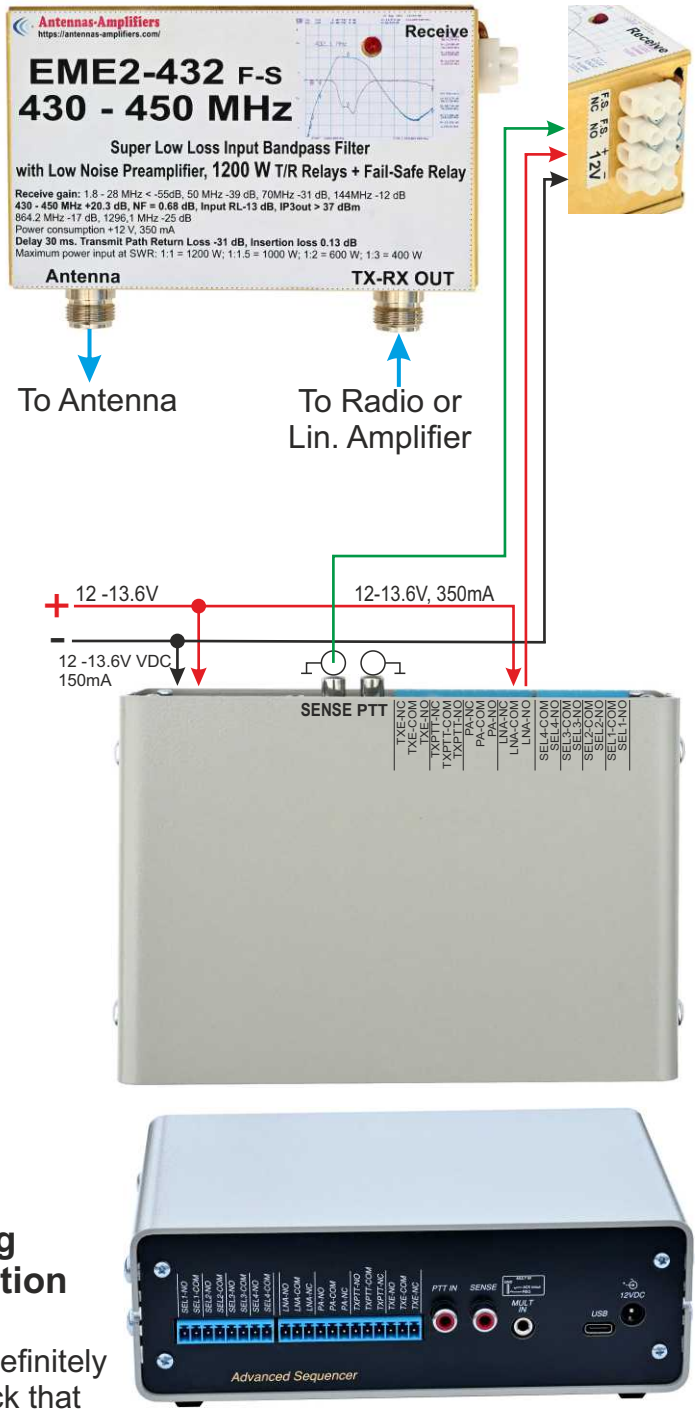
Intelligent Conditional Sequencing SENSE Input - Fail Safe Relay option





Advanced Sequencer Rear Connectors View

Intelligent Conditional Sequencing SENSE Input – Fail-Safe Relay Option

When enabled, the sequencer will wait indefinitely before proceeding until it receives feedback that the transmit relays are activated.

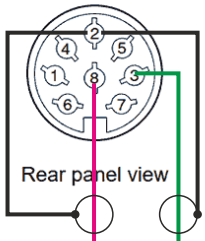
How does Intelligent Conditional Sequencing work?

The Advanced Sequencer will not continue the transmission sequence until it detects a change in the input state.
If the “SENSE” input state does not change, it indicates a potential issue with the system that may require repair.
But if there is a change (from High to Low or Low to High), the Advanced Sequencer will continue the transmission procedure.

The SENSE input can be set to high or low as an active state, depending on the used connection.

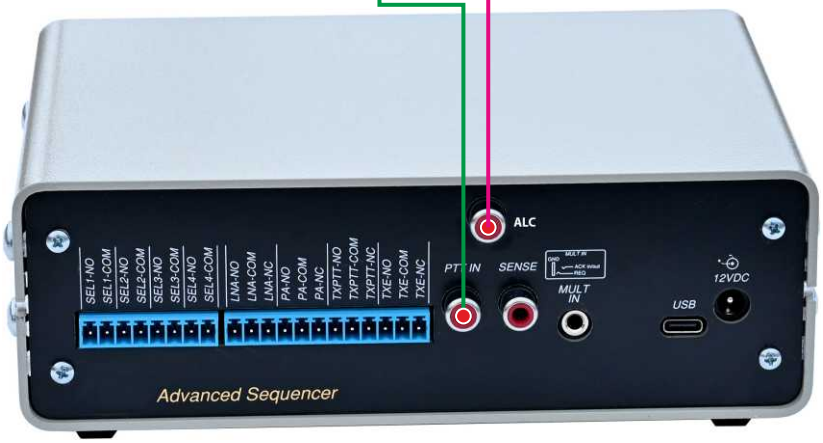
Connecting the IC-9700 output on the ACC1 port to the ALC and PTT inputs on the Advanced Sequencer (with ALC board installed (option))

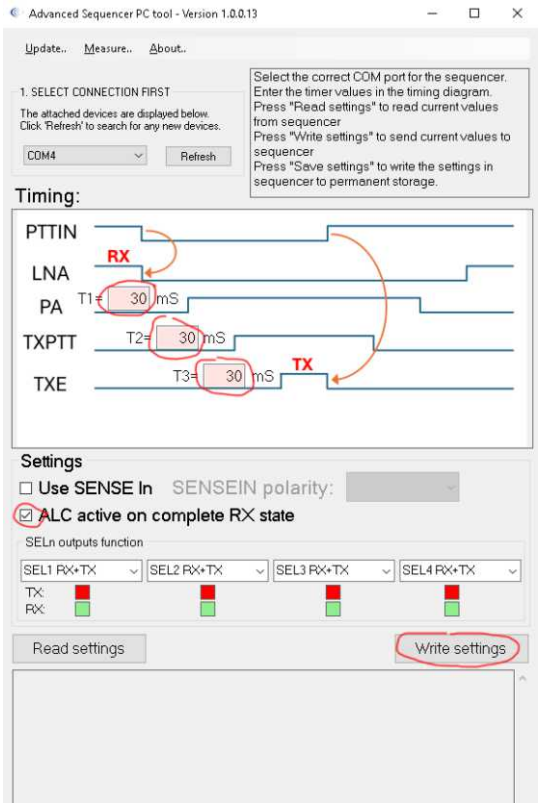
8-pin



Rear panel view

ACC 1	PIN No.	NAME	DESCRIPTION	SPECIFICATIONS
	1	RTTY	Controls RTTY keying.	High level: More than 2.4 V Low level: Less than 0.6 V Output current: Less than 2 mA
	2	GND	Connects to ground.	–
	3	SEND*1	Input/output pin. An external unit controls the transceiver. When this pin goes to ground, the transceiver transmits.	Input voltage (RX): 2 ~ 20 V Input voltage (TX): –0.5 ~ +0.8 V Current flow: Maximum 20 mA
			The pin goes low when the transceiver transmits.	Output voltage (TX): Less than 0.1 V Current flow: Maximum 200 mA
	4	MOD	Modulator input. Connects to the internal modulator circuit.	Input impedance: 10 kΩ Output level: Approx. 100 mV rms*2
	5	AF/IF (IF=12 kHz)*3	Fixed AF detector or receive IF (12 kHz) signal output.	Output impedance: 4.7 kΩ Output level: 100 ~ 300 mV rms*4
	6	SQL S	Squelch output. This pin goes to ground when the squelch opens (TX/RX indicator lights green).	SQL open: Less than 0.3 V/5 mA SQL closed: More than 6.0 V/100 µA
	7	13.8 V	13.8 V output when power is ON.	Output current: Maximum 1A
	8	ALC	ALC voltage input.	Input level: –4 ~ 0 V Input impedance: More than 10 kΩ





To connect ACC1 with Advanced Sequencer use an RG-174 cable or a similar microphone cable.

Cables you need:

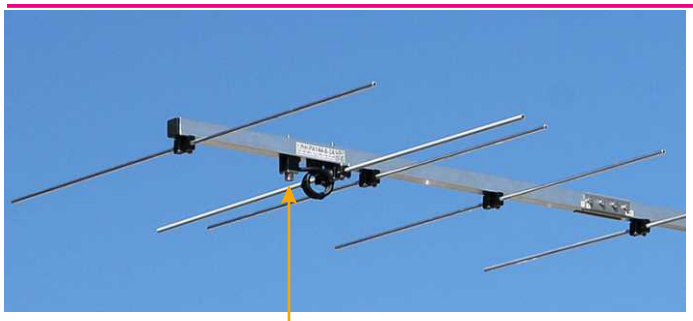
2+8 ALC to Sequencer

2+3 PTT to connect to PTT input on Sequencer (you will need to make "Y" cable on PTT on sequencer to connect more PTT from computer)

Apply these settings and update to Advanced Sequencer

ALC will hold negative voltage all the time so even pushing PTT on Mic will not burn the pream.

Antennas-Amplifiers Connecting Contest2 - Contest3 with IC-9700



Special versions of EME2 or EME3 with integrated Bias Tee.
Max power: 2m 300W, 70cm 150W

RF OUT

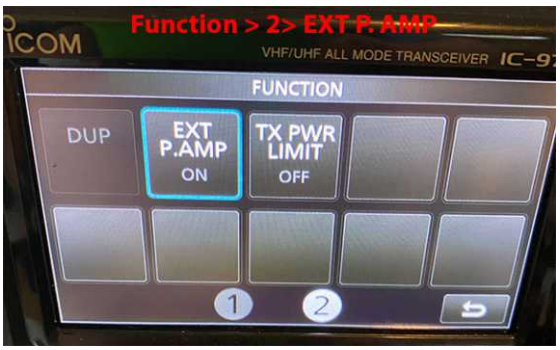
Pass through all menus to switch on all parameters.

Connectors

MENU » SET > Connectors > **External P.AMP**

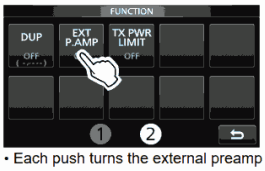
144M	(Default: OFF)
430M	(Default: OFF)
1200M	(Default: OFF)

Selects whether or not to use an external preamplifier, for each band.
The preamplifiers amplify received signals to improve the S/N ratio and sensitivity.
• OFF: Does not use an external preamplifier.
• ON: Uses an external preamplifier.



ⓘTo use an external preamp, you need to set the External Preamplifier ON or OFF for each band on the MENU screen.
MENU » SET > Connectors > **External P.AMP**

1. Push FUNCTION.
2. Touch [②] to change the screen.
3. Touch [EXT P.AMP].



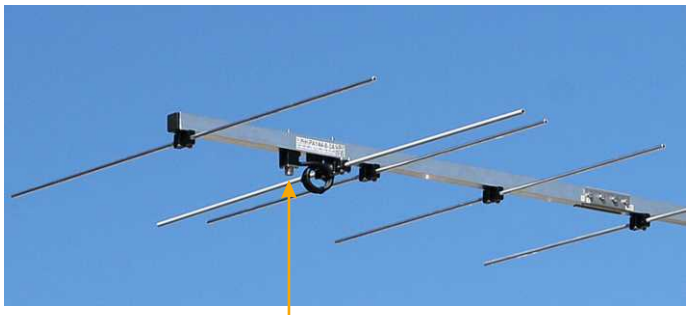
• Each push turns the external preamp ON or OFF.

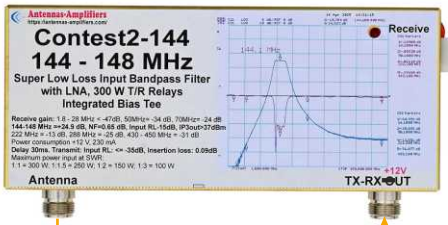
MENU » SET > Function > **TX Delay**

144M	(Default: OFF)
430M	(Default: OFF)
1200M	(Default: OFF)

Sets the TX delay time on the 144, 430, or 1200 MHz band.

Connecting Contest2 with Power Amplifier





− To Contest2 Screw Terminal

\+

OUT

Up to 300W
Power Amplifier

PTT

IN

Bias Tee

PTT

RF
OUT

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Connecting EME2-1296 with IC-9700

To 12V EME2 Screw Terminal

RF OUT

Antennas-Amplifiers

Connecting EME2-1296 with IC-9700 and HIGH POWER Relays (ALC board installed)

For power up to 5000W

(If the antenna can handle that power)

To both high power relays

NC Com NO

EME2-1296
High Selectivity Super Low Noise Unconditionally Stable Preamplifier 200W Transmit / Receive Relays
Receive
Antenna TX-RX OUT

To EME2 Screw Terminal

Power Amplifier to PA-COM and PA-NO

LNA-COM LNA-NO

USB C
12 -13.6V 150mA
ALC SENSE PTT
TXE-NC TXE-COM TXE-NO TXPTT-NC TXPTT-COM TXPTT-NO PA-NC PA-COM PA-NO LNA-NC LNA-COM LNA-NO SEL4-COM SEL4-NO SEL3-COM SEL3-NO SEL2-COM SEL2-NO SEL1-COM SEL1-NO

Relays with ANY isolation

IN OUT

Power Amplifier up to 5000W

PTT

USB programming and settings + PTT(if needed)
USB CAT control

Computer

USB B RF OUT

ACC 1
8-pin
Rear panel view

ACC1 connector on IC-9700

To connect ACC1 with Advanced Sequencer use an RG-174 cable or a similar microphone cable.
Cables you need:
2+8 ALC to Sequencer
2+3 PTT to connect to PTT input on Sequencer

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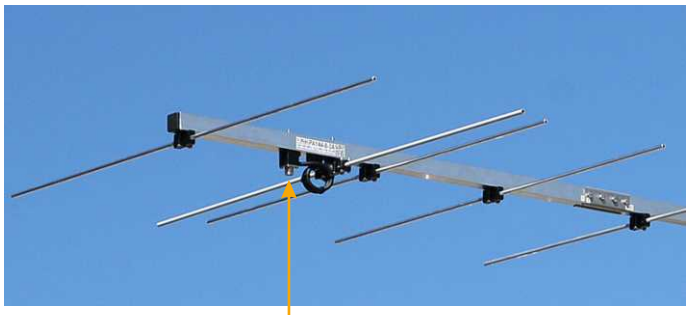
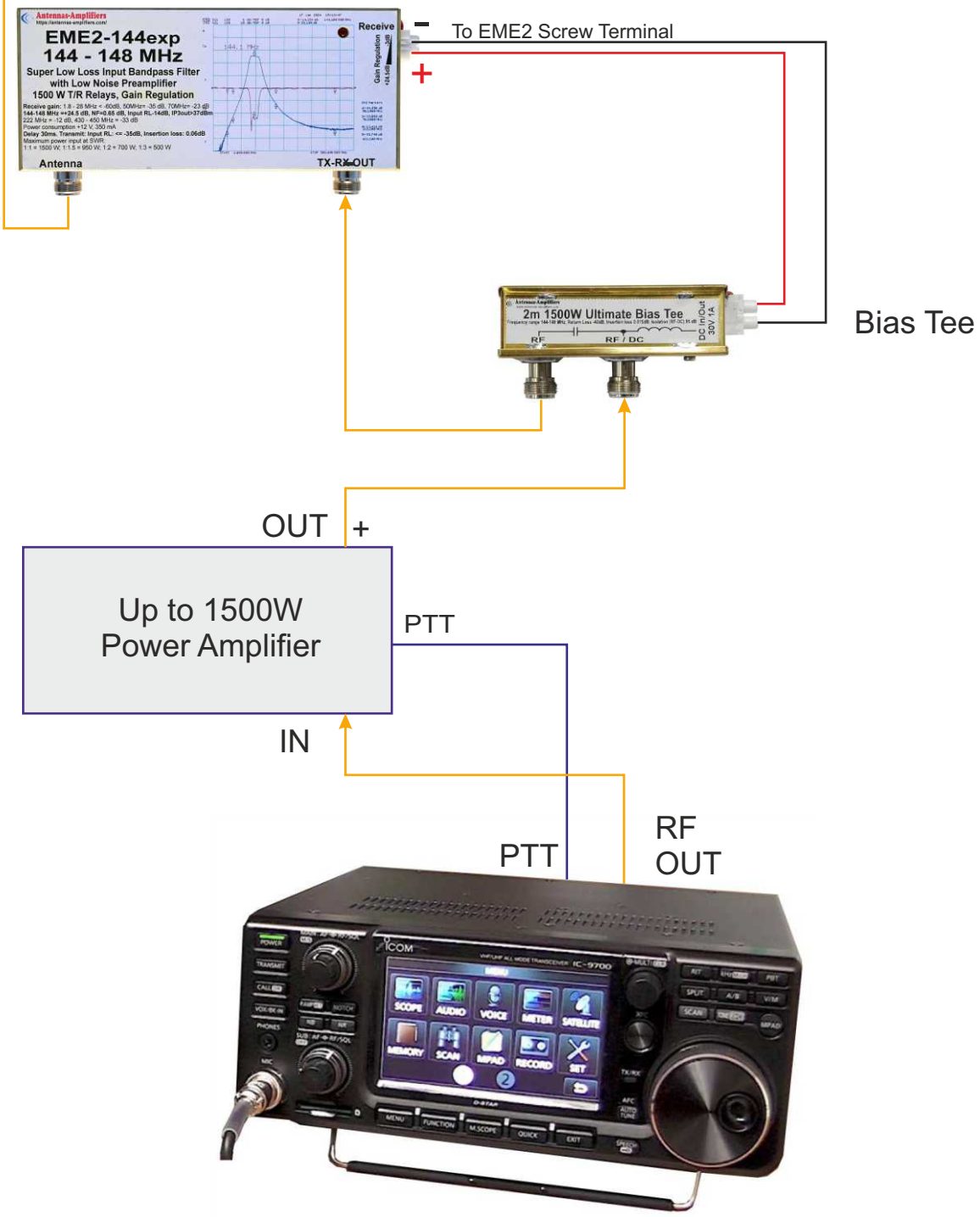
Connecting EME2, EME3 with Power Amplifier

With 12V output capability
And at least 30ms delay.





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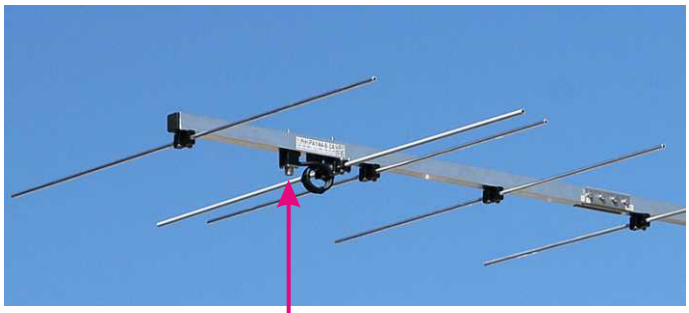
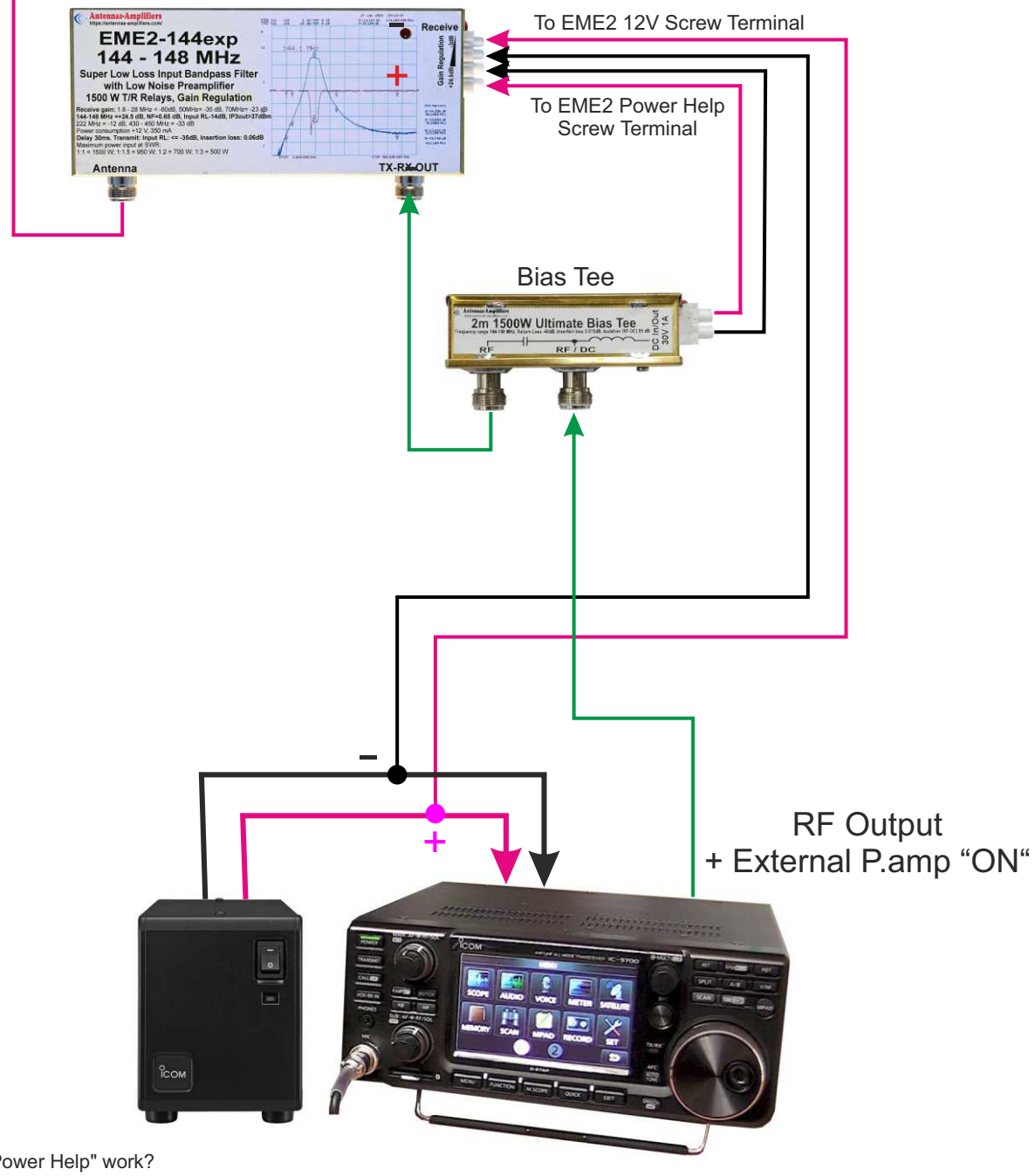
Antennas-Amplifiers

Connecting EME2, EME3 with IC-9700 with "Power Help" Option





How does "Power Help" work?

Connect the 12V power supply directly from the PS to the 12V terminal on the EME2 - EME3 preamplifier.
Connect the Bias Tee to the "Power Help" terminal on the EME2. The main current consumption (about 340mA) will be taken from the PS. IC9700 will only command EME2 ON/OFF, so the current draw from IC9700 will be below 50mA, which is well below the device's 200mA limit capability

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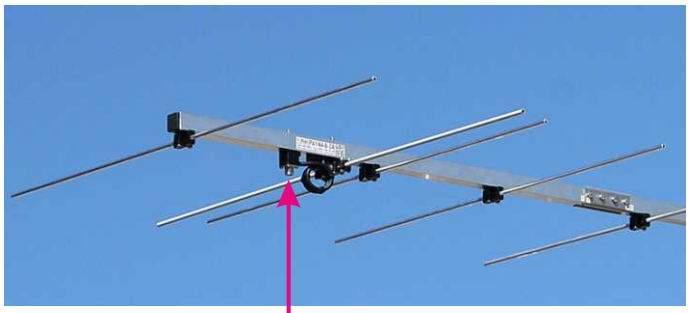
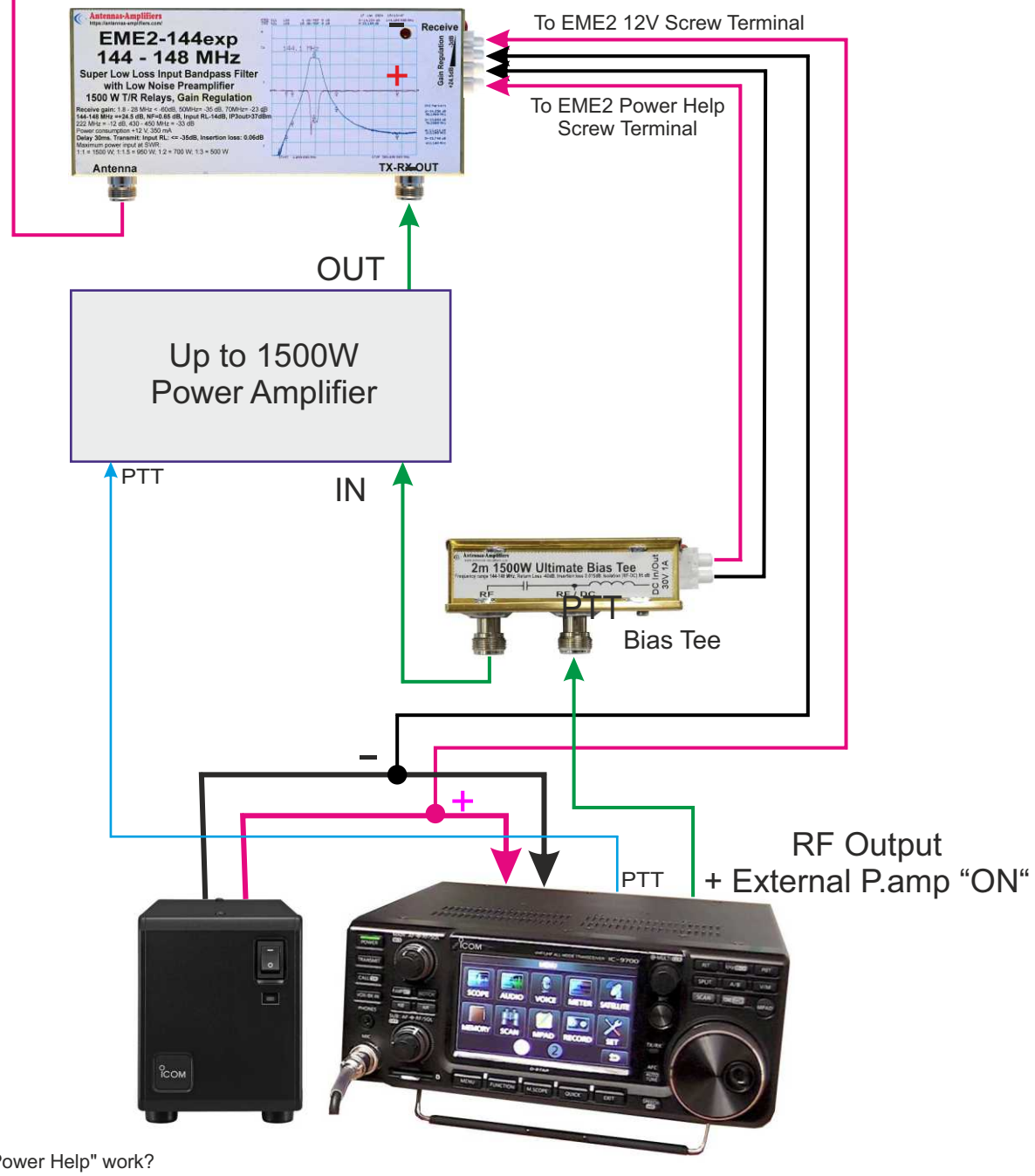
Antennas-Amplifiers

Connecting EME2, EME3 with IC-9700 with "Power Help" Option and linear amplifier





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