

Chapter 3

Site Considerations, Installation and Setup Procedures

There are special considerations that need to be taken into account before the Pioneer Series translator can be installed. For example, if the installation is completed during cool weather, a heat-related problem may not surface for many months, suddenly appearing during the heat of summer. This section provides planning information for the installation and set up of the translator.

3.1 Site Considerations

The translator requires an AC input line of 117 VAC @ 5 amps for the 10W translator or 117 VAC @ 10 amps for the 100W Translator.

The Pioneer Series Translators are designed and built to provide long life with a minimum of maintenance. The environment in which they are placed is important and certain precautions must be taken. The three greatest dangers to the translator are heat, dirt, and moisture. Heat is usually the greatest problem, followed by dirt, and then moisture. Over-temperature can cause heat-related problems such as thermal runaway and component failure. Each amplifier module in the translator contains a thermal interlock protection circuit that will shut down that module until the temperature drops to an acceptable level.

A suitable environment for the translator can enhance the overall performance and reliability of the translator and maximize revenues by minimizing downtime. A properly designed facility will have an adequate supply of cool, clean air, free of airborne particulates of any kind, and no excessive humidity. An ideal environment will require temperature in the range of 40° F to 70° F throughout the year, reasonably low humidity, and a dust-free room. It should be noted that this is rarely if ever attainable in the real world.

However, the closer the environment is to this design, the greater the operating capacity of the translator.

The fans are designed and built into the translator will remove the heat from within the modules, but additional means are required for removing this heat from the building. To achieve this, a few issues need to be resolved. The first step is to determine the amount of heat to be removed from the translator room. There are generally three sources of heat that must be considered. The first and most obvious is the heat from the translator itself. This amount can be determined for a 100W translator by subtracting the average power to the antenna (69.5 watts) from the AC input power (675 watts) and taking this number in watts (605.5) and then multiplying it by 3.41. This gives a result of 2,065, the BTUs to be removed every hour. 12,000 BTUs per hour equals one ton. Therefore, a 1/4-ton air conditioner will cool a 100W translator.

The second source of heat is other equipment in the same room. This number is calculated in the same way as the equation for BTUs. The third source of heat is equally obvious but not as simple to calculate. This is the heat coming through the walls, roof, and windows on a hot summer day. Unless the underside is exposed, the floor is usually not a problem. Determining this number is usually best left up to a qualified HVAC technician. There are far too many variables to even estimate this number without reviewing the detailed drawings of the site that show all of the construction details. The sum of these three sources is the bulk of the heat that must be removed. There may be other sources of heat, such as personnel, and all should be taken into account.

Now that the amount of heat that must be removed is known, the next step is to determine how to accomplish this. The options are air conditioning, ventilation, or a combination of the two. Air conditioning is always the preferred method and is the only way to create anything close to an ideal environment.

Ventilation will work quite well if the ambient air temperature is below 100° F, or about 38° C, and the humidity is kept at a reasonable level. In addition, the air stream must be adequately filtered to ensure that no airborne particulates of any kind will be carried into the translator. The combination of air conditioning for summer and ventilation during the cooler months is acceptable when the proper cooling cannot be obtained through the use of ventilation alone and using air conditioning throughout the year is not feasible.

Caution: The use of air conditioning and ventilation simultaneously is not recommended. This can cause condensation in the translators.

The following precautions should be observed regarding air conditioning systems:

1. Air conditioners have an ARI nominal cooling capacity rating. In selecting an air conditioner, do not assume that this number can be equated to the requirements of the site. Make certain that the contractor uses the actual conditions that are to be maintained at the site in determining the size of the air conditioning unit. With the desired conditioned room temperature under 80° F, the unit must be derated, possibly by a substantial amount.
2. Do not have the air conditioner blowing directly onto the translator. Under certain conditions, condensation may

occur on, or worse in, the translator.

3. Do not separate the front of the translator from the back with the thought of air conditioning only the front of the unit. Cooling air is drawn in at the front of all translators and in the front and back of others. Any attempt to separate the front of the translator from the rear of the unit will adversely affect the flow of cooling air.
4. Interlocking the translator with the air conditioner is recommended to keep the translator from operating without the necessary cooling.
5. The periodic cleaning of all filters is a must.

When using ventilation alone, the following general statements apply:

1. The blower, with attendant filters, should be on the inlet, thereby pressurizing the room and preventing dirt from entering the translator.
2. The inlet and outlet vents should be on the same side of the building, preferably the leeward side. As a result, the pressure differential created by wind will be minimized. Only the outlet vent may be released through the roof.
3. The inlet and outlet vents should be screened with 1/8-inch hardware cloth (preferred) or galvanized hardware cloth (acceptable).
4. Cooling air should enter the room as low as practical but in no case higher than four feet above the floor. The inlet must be located where dirt, leaves, snow, etc., will not be carried in with the cooling air.

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| <p>5. The exhaust should be located as high as possible. Some ducting is usually required to insure the complete flushing of heated air with no stagnant areas.</p> <p>6. The filter area must be large enough to insure a maximum air velocity of 300 feet per minute through the filter. This is not a conservative number but a never-exceed number. In a dusty or remote location, this number should be reduced to 150 CFM.</p> <p>7. The inlet and outlet(s) must have automatic dampers that close any time the ventilation blower is off.</p> <p>8. In those cases in which translators are regularly off for a portion of each day, a temperature-differential sensor that controls a small heater must be installed. This sensor will monitor inside and outside temperatures simultaneously. If the inside temperature falls to within 5° F of the outside temperature, the heater will come on. This will prevent condensation when the ventilation blower comes on and should be used even in the summer.</p> <p>9. A controlled-air bypass system must be installed to prevent the temperature in the room from falling below 40° F during translator operation.</p> <p>10. The blower should have two speeds, which are thermostatically controlled, and be interlocked with the translator.</p> <p>11. The blower on high speed must be capable of moving the required volume of air into a half inch of water pressure at the required elevation. The free air delivery method must not be used.</p> | <p>12. Regular maintenance of the filters, if used, can not be overemphasized.</p> <p>13. Above 4000 feet, for external venting, the air vent on the cabinet top must be increased to an 8-inch diameter for a 1-kW translator and to a 10-inch diameter for 5-kW and 6-kW translators. An equivalent rectangular duct may be used but, in all cases, the outlet must be increased by 50% through the outlet screen.</p> <p>14. It is recommended that a site plan be submitted to Axcera for comments before installation begins.</p> <p>In calculating the blower requirements, filter size, and exhaust size, if the total load is known in watts, 2000 CFM into ½ inch of water will be required for each 5000 watts. If the load is known in BTUs, 2000 CFM into ½ inch of water will be required for each 17,000 BTUs. The inlet filter must be a minimum of seven square feet, larger for dusty and remote locations, for each 5000 watts or 17,000 BTUs. The exhaust must be at least four square feet at the exhaust screen for each 5000 watts or 17,000 BTUs.</p> <p>The information presented in this section is intended to serve only as a general guide and may need to be modified for unusually severe conditions. A combination of air conditioning and ventilation should not be difficult to design (see Figure 3-1).</p> <p>System interlocking and thermostat settings should be reviewed with Axcera. As with any equipment installation, it is always good practice to consult the manufacturer when questions arise. Axcera can be contacted at (724) 873-8100</p> |
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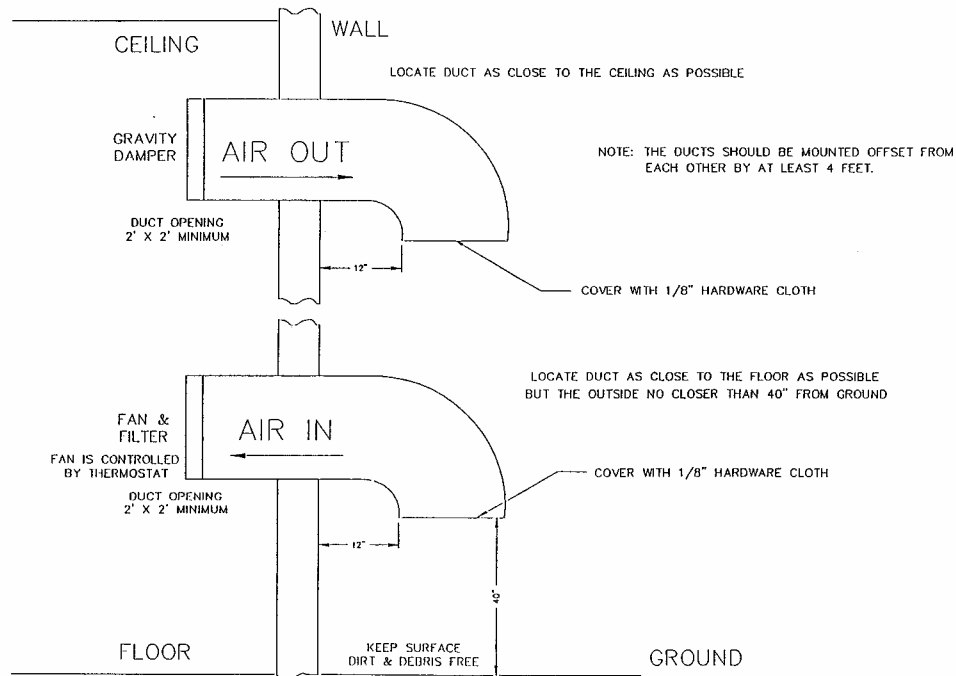


Figure 3-1. 1 kW Minimum Ventilation Configuration

3.2 Unpacking the Chassis w/modules, receiver tray, trap filter and band-pass filter assembly

Thoroughly inspect the chassis with modules and all other materials upon their arrival. Axcera certifies that upon leaving our facility the equipment was undamaged and in proper working order. The shipping containers should be inspected for obvious damage that indicates rough handling.

Remove the chassis and modules, along with the receiver tray, the trap filter and band-pass filter, from the crates and boxes.

Check for dents and scratches or broken connectors, switches, display, or connectors. Any claims against in-transit damage should be directed to the carrier. Inform Axcera as to the extent of any damage as soon as possible.

The modules are mounted to the chassis assembly with slides that are on the top and the bottom of the modules. There

are two thumb screws on the front panel that hold each of the modules in place. The receiver tray is mounted in the cabinet using Chassis Trak cabinet slides. The tray slides are on the side of the tray. Inspect the tray for any loose hardware or connectors, tightening where needed

3.3 Installing the Chassis w/modules, receiver tray, trap filter and band-pass filter assembly

The chassis assembly and receiver tray are made to mount in a standard 19" rack. The chassis assembly mounts using the four #10 clearance mounting holes on the ends. The chassis should be positioned; to provide adequate air intake into the front and the air exhaust of the fan in the rear; the ability to slide the modules out for replacement purposes; the installation of the trap filter; the band-pass filter assembly; and output transmission line. The chassis or cabinet in which it is mounted should be grounded using copper strapping material.

Normally, the receiver tray mounts below the Chassis assembly using Chassis Trak cabinet slides. The Side Rails are pre-mounted on the sides of the Tray. Install the Tray slides found in the Installation Material into the left and right side of the standard 19" Cabinet. Refer to the "Cabinet Mounting Instructions For Tray Slides" drawing below. Check that the Tray Slides are mounted in line with each other. Secure the slides by connecting them to the front and rear mounting bars using the No. 10 bolts and bar nuts provided. Insert the Tray onto the Tray

Slides and slide the Tray into the cabinet. Slowly slide the Tray in and out to verify that it does not rub against the Chassis assembly and has no restriction to free movement. Adjustment to the position of the Tray may be necessary, and is accomplished by loosening the cabinet slide mounting bolts that hold the front of the slide to the mounting frame of the Cabinet and moving the Tray up or down as needed to correct for the rubbing. Retighten after adjusting.

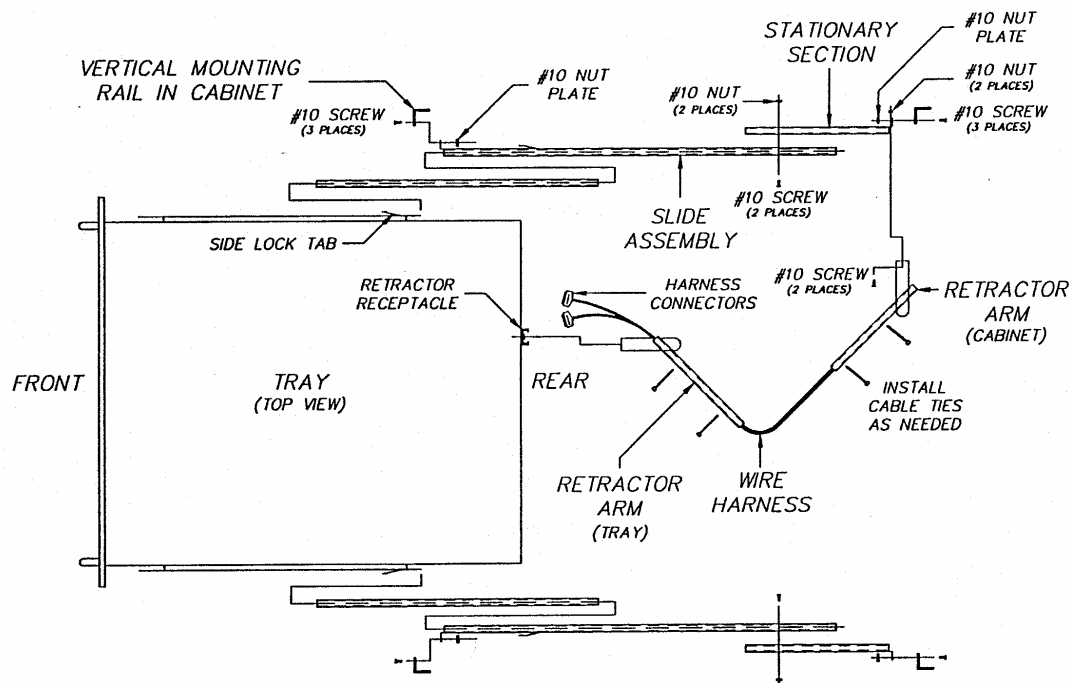


Figure 3-2. Tray Slides Cabinet Mounting Diagram

NOTE: To pull out the power amplifier module for replacement purposes, the input and output coaxial cables must first be removed from the rear of the chassis assembly.

Connect the digital mask filter and coupler assembly to the output of the chassis assembly.

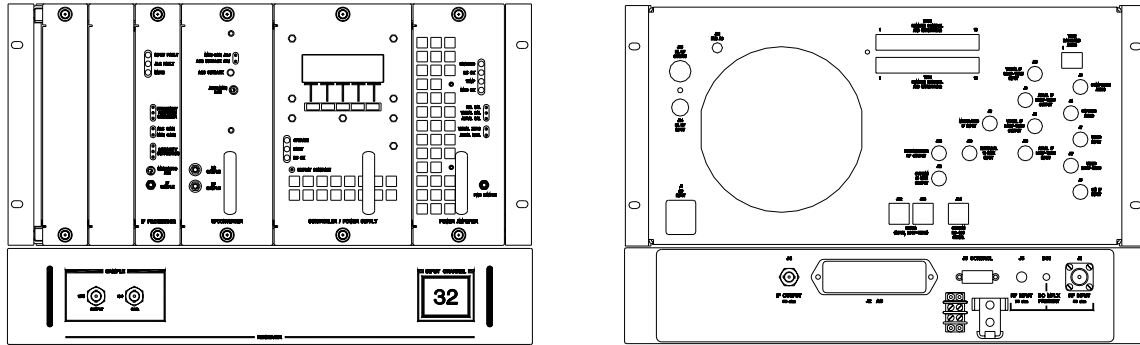


Figure 3-3. Front and Rear View Reconnection Drawing

Connect the transmission line for the antenna system to the band-pass filter output.

3.4 AC Input

The Exciter/Amplifier chassis assembly needs to be plugged into an AC outlet of 115 or 230 VAC, as set at the factory. Current requirements are 5 amps for 10W translators and 10 amps 50W translators, in order to operate. The Receiver Tray requires an AC outlet of 115 VAC or 230 VAC. The AC can be set for the Receiver Tray as follows.

FOR 115 VAC – Verify that 115 volts is indicated on the rear panel cover of the power entry module. If not, gently open the cover, remove the fuse assembly, and reinsert the assembly so that 115 volts is visible with the cover closed.

FOR 230 VAC – Verify that 230 volts is indicated on the rear panel cover of the power entry module. If not, gently open the cover, remove the fuse assembly, and reinsert the assembly so that 230 volts is visible with the cover closed.

When the AC power cord for the exciter/amplifier chassis is plugged in, the AC is always connected to the translator. There is an On/off circuit breaker located on the rear of the Receiver Tray that needs to be

switched on to apply the AC to the rest of the Tray.

This completes the unpacking and installation of the Pioneer Series UHF television translator. Refer to the setup and operation procedures that follow before applying power to the translator.

3.5 Setup and Operation

Initially, the translator should be turned on with the RF output at the coupler assembly terminated into a dummy load of 10W or 100W depending on the power rating of the translator. If a load is not available, check that the output of the coupler assembly is connected to the antenna for your system.

3.5.1 Input Connections

The input connections to the translator are to the rear of the Receiver Tray and to the rear of the Chassis Assembly for the translator.

Refer to the tables and description that follows for detailed information.

Figure 3-4: Rear View of Pioneer Series Translator

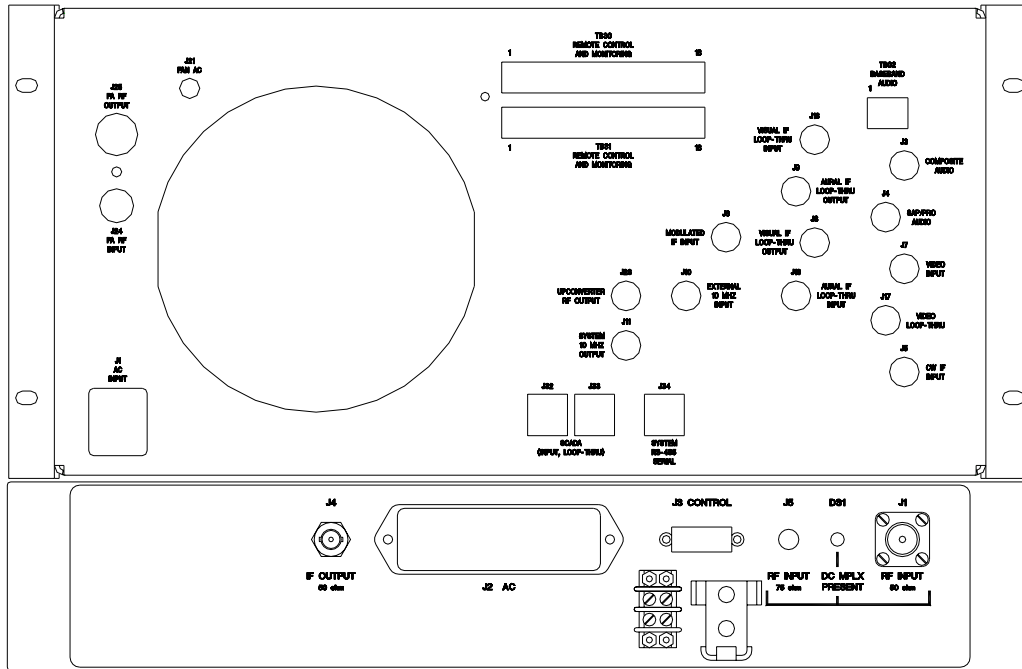


Table 3-1: Rear Chassis Connections for the Receiver Tray.

Port	TYPE	Function	Ohm
J1	N	RF Input	50
J2	IEC	AC Input	N/A
J3	15-pin D	Remote Connections	N/A
J4	BNC	IF Output	50

Table 3-2: Rear Chassis Connections for the Pioneer Series Translator (exciter).

Port	Type	Function	Ohm
J1	IEC	AC Input	N/A
TB02	Term	Base Band Audio Input	600
J3	BNC	Composite Audio Input	75
J4	BNC	SAP / PRO Audio Input	50
J5	BNC	CW IF Input	50
J6	BNC	Modulated IF Input	50
J7	BNC	Video Input (Isolated)	75
J8	BNC	Visual IF Loop-Thru Output	50
J9	BNC	Aural IF Loop-Thru Output	50
J10	BNC	10 MHz Reference Input	50
J11	BNC	10 MHz Reference Output	50

Port	Type	Function	Ohm
J17	BNC	Video Loop-Thru (Isolated)	75
J18	BNC	Visual IF Loop-Thru Input	50
J19	BNC	Aural IF Loop-Thru Input	50
J23	BNC	Upconverter RF Output	50
J24	BNC	Power Amplifier RF Input	50
J25	N	Power Amplifier RF Output	50
TB30	Term	Remote Control & Monitoring	
TB31	Term	Remote Control & Monitoring	
J32	RJ-45	SCADA (Input / Loop-Thru)	CAT5
J33	RJ-45	SCADA (Input / Loop-Thru)	CAT5
J34	RJ-45	System RS-485 Serial	CAT5

3.5.2 Front Panel Screens for the Exciter/Amplifier Chassis Assembly

A 4 x 20 display located on the front of the Control & Monitoring/Power Supply Module is used in the Pioneer translator for control of the operation and display of the operating parameters of the translator. Below are the display screens for the system. The ↑ and ↓ characters

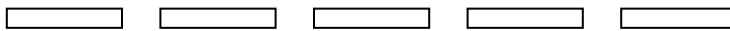
are special characters used to navigate up or down through the menu screens. Display text flashes on discrete fault conditions for all screens that display a fault condition.

When the translator is in operate mode, the STB menu appears. When the translator is in standby mode, the OPR menu appears.

Display Menu Screens for the Pioneer Series Translator

Table 3-3: Menu 01 - Splash Screen #1

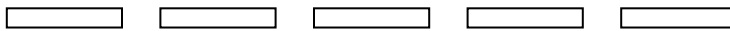
A	X	C	E	R	A														
1	0	3		F	R	E	E	D	O	M		D	R	I	V	E			
L	A	W	R	E	N	C	E	,		P	A	.	1	5	0	5	5		
(	7	2	4	)		8	7	3	-	8	1	0	0						



This is the first of the two translator splash screens that is shown for the first few seconds after reset.

Table 3-4: Menu 02- Splash Screen #2

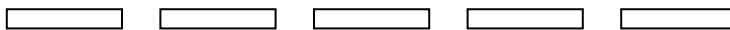
P	I	O	N	E	E	R		L	U	0	1	0	0	A	L				
C	O	D	E		V	E	R	S	I	O	N		1	.	0				
F	I	R	M	W	A	R	E			1	3	0	2	1	6	4			
S	C	A	D	A		A	D	D	R	E	S	S							5



This is the second of the two translator splash screens

Table 3-5: Menu 10 - Main Screen

		F	O	R	W	A	R	D		P	W	R		1	0	0	%			
		R	E	F	L	E	C	T	E	D		P	W	R		1	.	0	%	
	↑																	S	T	B



This is the default main screen of the translator. When the translator is in operate, the 'STB' characters appear allowing an operator to place the translator in stand-by. When the translator is in standby the 'STB' characters are replaced with 'OPR' and an operator can place the translator into operate by pressing the right most switch on the front panel display. If the ↓ key is activated the system changes to Menu 11. If the ↑ key is activated the system displays to Menu 13.

Table 3-6: Menu 11 - Error List Access Screen

S	Y	S	T	E	M	E	R	R	O	R	S	6				
E	R	R	O	R	L	I	S	T	D	I	S	P	L	A	Y	
↑					↓			E	N	T				S	T	B
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																

This screen of the translator shows the current number of errors and provides operator access to view the error list. This is the entry point to Menu 20. If the ↓ key is activated the system changes to Menu 12. If the ↑ key is activated the system returns to Menu 10.

Table 3-7: Menu 12 - Translator Device Data Access Screen

T	R	A	N	S	M	I	T	T	E	R	D	E	T	A	I	L	S
↑					↓			E	N	T				S	T	B	
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																	

This screen of the translator allows access to various parameters of the translator system. This is the entry point to Menu 30. If the ↓ key is activated the system changes to Menu 13. If the ↑ key is activated the system returns to Menu 11.

Table 3-8: Menu 13 - Translator Configuration Access Screen

T	R	A	N	S	M	I	T	T	E	R	S	E	T	-	U	P
↑					↓			E	N	T				S	T	B
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																

This screen of the translator allows access to various software setting of the translator system. This is the entry point to Menu 40. If the ↓ key is activated the system returns to Menu 10. If the ↑ key is activated the system returns to Menu 12.

Table 3-9: Menu 20 - Error List Display Screen

S	Y	S	T	E	M	E	R	R	O	R	S	1	/	6		
U	P	C	O	N	V	E	R	T	E	R	M	O	D	U	L	E
I	N	T	E	R	L	O	C	K	F	A	U	L	T			
↑					↓			C	L	R			E	S	C	
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																

This screen of the translator allows access to system faults. Fault logging is stored in non-volatile memory. The translator's operating state can not be changed in this screen. The 'CLR' switch is used to clear previously detected faults that are no longer active. The ↑ key and ↓ key allow an operator to scroll through the list. The ESC switch is used to leave this screen.

Table 3-10: Menu 30 - Translator Device Details Screen

S	Y	S	T	E	M	D	E	T	A	I	L	S				
X	M	T	R	I	N	O	P	E	R	A	T	E	M	O	D	E
P	O	W	E	R	S	U	P	P	L	Y	:	O	K			
↑					↓			←			→			E	S	C
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																

This screen of the translator allows access to translator parameters of installed devices. The system must be configured for the translator to know which devices are expected to be present. Current values for all installed devices are shown. If a module is not installed, only a "MODULE NOT PRESENT" message will be presented. The ↑ and ↓ arrows scroll through the different parameters of each device.

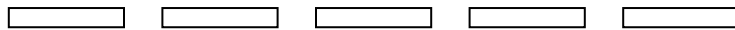
Table 3-11: Translator Device Parameters

System Component	Parameter	Normal	Faulted (Blinking)
Modulator (Analog Systems)	PLL CIRCUIT	LOCKED	UNLOCKED
	OUTPUT LEVEL	0 - 200 IRE	N/A
	AURAL DEVIATION	0 - 125 kHz	N/A
	CW INPUT	PRESENT	NOT USED
	STATION ID	SEND soft key	N/A
IF Processor (Analog Systems)	INPUT STATE	OK	FAULT
	MODULATION	OK	FAULT
	IF INPUT	MODULATOR or J6	N/A
	ALC LEVEL	0 - 5.00 V	N/A
	ALC MODE	AUTO or MANUAL	N/A
	DLC LEVEL	0 - 5.00 V	N/A
IF Processor (Digital Systems)	ALC LEVEL	0 - 5.00 V	N/A
	ALC MODE	AUTO or MANUAL	N/A
	DLC LEVEL	0 - 5.00 V	N/A
LO / Upconverter	PLL CIRCUIT	LOCKED	FAULT
	AFC LEVEL	0 - 5.00 V	N/A
	AGC 1 LEVEL	0 - 5.00 V	N/A
	AGC 2 LEVEL	0 - 5.00 V	N/A
	EX. 10 MHz	PRESENT or NOT USED	N/A
	LO FREQ	xxx.xxx MHz	N/A
Power Amp (In Analog Systems)	AMP STATE	ENABLED or DISABLED	N/A
	SUPPLY VOLTAGE	OK or OFF	FAULT
	VISUAL POWER	xxx%	xxx%
	AURAL POWER	xxx%	xxx%
	REFLECTED POWER	xxx%	xxx%
	AMP CURRENT 1	xx.xA	xx.xA
	AMP CURRENT 2	xx.xA	xx.xA
	AMP TEMPERATURE	xxC	xxC
CODE VERSION	x.x	N/A	
Power Amp (In Digital Systems)	AMP STATE	ENABLED or DISABLED	N/A
	SUPPLY VOLTAGE	OK or OFF	FAULT
	FORWARD POWER	xxx%	xxx%
	REFLECTED POWER	xxx%	xxx%
	AMP CURRENT 1	xx.xA	xx.xA
	AMP CURRENT 2	xx.xA	xx.xA
	AMP TEMPERATURE	xxC	xxC
	CODE VERSION	x.x	N/A
Ext. Power Supply Tray x Mod y	AMP STATE	ENABLED or DISABLED	N/A
	SUPPLY VOLTAGE	OK or OFF	FAULT
	FORWARD POWER	xxx%	xxx%
	REFLECTED POWER	xxx%	xxx%
	AMP CURRENT 1	xx.xA	xx.xA
	AMP CURRENT 2	xx.xA	xx.xA

System Component	Parameter	Normal	Faulted (Blinking)
	AMP CURRENT 3	xx.xA	xx.xA
	AMP TEMPERATURE	xxC	xxC
	CODE VERSION	x.x	N/A

Table 3-12: Menu 40 - Translator Set-up: Power Raise/Lower Screen

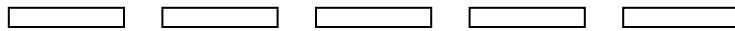
T R A N S M I T T E R S E T - U P				
0 1	P O W E R R A I S E / L O W E R		S E T T I N G 1 0 0 %	
↑	↓	(+)	E S C	(-)



This screen of the translator is the first of several that allows access to translator set-up parameters. When + is selected, the Power will increase. When - is selected, the Power will decrease..

Table 3-13: Menu 40-1 - Translator Set-up: Model Select Screen

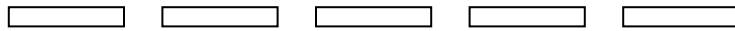
T R A N S M I T T E R S E T - U P				
0 2	T R A N S M I T T E R M O D E L		N U M B E R L U 0 1 0 0 A L	
↑	↓	(+)	E S C	(-)



This screen is used to specify which components are expected to be part of the system. By specifying the model number, the translator control firmware knows which components should be installed and it will be able to display faults for components that are not properly responding to system commands.

Table 3-14: Menu 40-2 - Translator Set-up: Frequency Select Screen

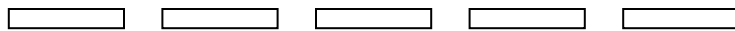
T R A N S M I T T E R S E T - U P				
0 2	F R E Q U E N C Y S E L E C T		T A B L E O R C U S T O M	
↑	↓	(+)	E S C	(-)



This screen of the translator is allows access to translator frequency set-up parameters. The choices of this screen are 'TABLE' or 'CUSTOM'. When table is selected, the next menu will be used to select the desired operating frequency. When custom is selected, the next menu is used to select a specific operating frequency.

Table 3-15: Menu 40-3 - Translator Set-up: Frequency Table Select Screen

T R A N S M I T T E R S E T - U P				
0 3	F R E Q U E N C Y S E L E C T		C H 2 0 5 0 6 - 5 1 2 M H z	
↑	↓	(+)	E S C	(-)



The choices of this screen are from the standard UHF / VHF tables. + and - change the desired value of the translator. Any change to frequency is immediately set to the LO / Upconverter Frequency Synthesizer PLL circuit.

Table 3-16: Menu 40-4 - Translator Set-up: IF Frequency Screen

T R A N S M I T T E R S E T - U P				
0 3	I F F R E Q U E N C Y			
	I N P U T	4 5	.	7 5 M H z
↑	↓	(+)	E S C	>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen is used to specify the IF Input frequency. This value plus the desired channel value is used to calculate the desired LO frequency. + is used to increase the selected value from 0 to 9. The > key is used to select from each of the different fields that make up the desired frequency. Any change to frequency is immediately set to the LO / Upconverter Frequency Synthesizer PLL circuit.

Table 3-17: Menu 40-5 - Translator Set-up: Custom Frequency Select Screen

T R A N S M I T T E R S E T - U P				
0 3	F R E Q U E N C Y S E L E C T			
		0 5 0 7	.	2 5 0 M H z
↑	↓	(+)	E S C	(-)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen is used to specify the operating frequency to an exact value. + is used to increase the selected value from 0 to 9. The > key is used to select from each of the different fields that make up the desired frequency. Any change to frequency is immediately set to the LO / Upconverter Frequency Synthesizer PLL circuit.

Table 3-18: Menu 40-6 - Translator Set-up: Serial Address Screen

T R A N S M I T T E R S E T - U P				
0 4	S E R I A L A D D R E S S 5			
↑	↓	(+)	E S C	(-)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen allows the user to set the serial address of the translator. The default address is 5. This value and all other set-up parameters, are stored in non-volatile memory.

Table 3-19: Menu 40-7 - Translator Set-up: System Forward Power Calibration

T R A N S M I T T E R S E T - U P				
0 6	S Y S T E M C A L I B R A T E			
	F O R W A R D	P W R	1 0 0 %	
↑	↓	(+)	E S C	(-)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen is used to adjust the calibration of the system's forward power. A symbol placed under the '6' character is used to show minor changes in the calibration value. When the calibration value is at full value, the character will be full black. As the value decreases, the character pixels are gradually turned off.

Table 3-20: Menu 40-8 - Translator Set-up: System Aural Power Calibration

T	R	A	N	S	M	I	T	T	E	R	S	E	T	-	U	P
0	6	S	Y	S	T	E	M	C	A	L	I	B	R	A	T	E
		A	U	R	A	L	P	W	R				1	0	0	%
↑		↓		(	+	)	E	S	C			(-)		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

In analog systems, this screen is used to adjust the calibration of the system's aural forward power.

Table 3-21: Menu 40-9 - Translator Set-up: System Reflected Power Calibration

T	R	A	N	S	M	I	T	T	E	R	S	E	T	-	U	P
0	6	S	Y	S	T	E	M	C	A	L	I	B	R	A	T	E
		R	E	F	L	E	C	T	P	W	R	X	X	X	%	
↑		↓		(	+	)	E	S	C			(-)		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen is used to adjust the calibration of the system's reflected power.

Table 3-22: Menu 40-10 - Translator Set-up: Forward Power Fault Threshold Screen

T	R	A	N	S	M	I	T	T	E	R	S	E	T	-	U	P	
0	7	M	I	N	I	M	U	M	F	O	R	W	A	R	D		
		P	O	W	E	R	F	A	U	L	T				5	0	%
↑		↓		(	+	)	E	S	C			(-)			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen is used to set the minimum forward power fault threshold. When the translator is operating, it must operate above this value otherwise the system will shut down with fault for 5 minutes. If after five minutes the fault is not fixed, the translator will enable, measure power less than this value and again shut down for five minutes.

Table 3-23: Menu 40-11 - Translator Set-up: Reflected Power Fault Threshold

T	R	A	N	S	M	I	T	T	E	R	S	E	T	-	U	P	
0	8	M	A	X	I	M	U	M	R	E	F	L	E	C	T	E	D
		P	O	W	E	R	F	A	U	L	T				1	0	%
↑		↓		(	+	)	E	S	C			(-)			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

This screen is used to set the maximum reflected power fault threshold. When the translator is operating, it must not operate above this value otherwise the system will shut down with fault for 5 minutes. If after five minutes the fault is not fixed, the translator will enable, measure power above this value and again shut down for five minutes.

Table 3-24: Menu 40-12 - Translator Set-up: Remote Commands Control

T	R	A	N	S	M	I	T	T	E	R	S	E	T	-	U	P	
0	9	R	E	M	O	T	E	C	O	N	T	R	O	L			
		C	O	M	M	A	N	D	S	A	C	C	E	P	T	E	D
	↑			↓		(	+	)		E	S	C		(-)	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

This screen is used to allow or deny the use of remote control commands. When disabled, remote commands are not used. Remote commands are commands received either through the rear terminal blocks or through serial messages.

This completes the description of the screens for the Pioneer Series exciter/amplifier chassis assembly.

If the translator is already connected to the antenna, check that the output is 100%. If necessary, adjust the amplifier power detection circuitry or LO / Upconverter AGC settings. The power raise / lower settings are only to be used for temporary reductions in power. The

power set-back values do not directly correspond to the power of the translator. Setting for 50% output sets a linear circuit voltage which is controlling a non-linear power circuit.

If a problem occurred during the setup and operation procedures, refer to Chapter 5, Detailed Alignment Procedures, of this manual for more information.