

## 37 Pin

Signal Pin	Related Pin	Signal Name	Signal Type	Description
1	2, 3, 20, 21, 22	Analog Input Return	Return	Common return pin for analog inputs. This pin must be grounded either on host or client side.
2	1	Process Control Setpoint	AI	The signal provided to this analog input represents a linearly scaled setting for the process control set point. The default voltage range for this analog input is 0 V to 10 V. 0 V to 10 V correlates to 0 to maximum process control value (4000 V default maximum value). For example a voltage of 2.5 V correlates to a process control setpoint of 1000 V (with default settings).
3	1	Match Position Load Setpoint	AI	The signal provided to this analog input represents a linearly scaled setting for the position of the C <sub>Load</sub> capacitor. The default voltage range for this analog input is 0 V to 10 V. 0 V to 10 V correlates to 0 % to 100 % of the capacitor's range. For example a voltage of 5 V correlates to a capacitor position of 50 %.
4	8	RF Power Monitor	AO	The signal on this analog output provides a linearly scaled readback of the RF power. The source of the signal depends on the power control mode. In forward power control mode it provides the forward power, in load power control mode the load power. The default range is 0 V to 10 V. 0 V to 10 V correlates to 0 W to nominal RF power. For example 5 V correlates to 50 % of the nominal RF power.
5	8	Process Control Monitor	AO	The signal on this analog output provides a linearly scaled readback of the process control value. The default range is 0 V to 10 V. 0 V to 10 V correlates to 0 to maximum process control value (4000 V default maximum value). For example a voltage of 5 V correlates to 50 % of the maximum process control value.
6	8	Match Position Load Monitor	AO	The signal on this analog output provides a linearly scaled readback of the position of the C <sub>Load</sub> capacitor. The default range is 0 V to 10 V. 0 V to 10 V correlates to 0 % to 100 % of the capacitor range. For example a voltage of 5 V correlates to a capacitor position of 50 %.

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7	8	Not Used	AO	This pin is not used by default.
8	4, 5, 6, 7, 23, 24, 25, 26	Analog Output Return	Return	Common return pin for analog outputs. This pin must be grounded either on host or client side.
9	27	Remote	DI	The signal on this digital input sets the remote control source of the generator. A transition from <i>low</i> to <i>high</i> state will switch <i>setpoint source</i> and <i>matching source</i> to <i>Analog Port</i> . A transition from <i>high</i> to <i>low</i> state will switch back to the previously selected settings.
10	27	Load Power Control	DI	The signal on this digital input selects forward power or load power regulation mode. A transition from <i>low</i> to <i>high</i> state will enable load power regulation mode. A transition from <i>high</i> to <i>low</i> state will enable forward power regulation mode. (See also pin 29.)
11	27	Error Reset	DI	The signal on this digital input is used to clear error messages. A transition from <i>low</i> to <i>high</i> state will clear all revoked errors. Pending or persistent errors however cannot be cleared. In this case the reason for the error must be cleared first.
12	27	Not Used	DI	This pin is not used by default.
13	16	Overtemperature Error	DO	When the generator detects an overtemperature condition and issues an error, a low impedance is created between this pin and pin 16.
14	16	Setpoint Warning	DO	When the generator is out of setpoint, a low impedance is created between this pin and pin 16.
15	16	Interlock Satisfied	DO	When the interlock is satisfied, a low impedance is created between this pin and pin 16.
16	13, 14, 15, 31, 32, 33, 34	Digital Output Return	Return	Common return pin for digital outputs. This pin must be grounded either on host or client side.
17	35	Blanking / Pulsing Return	Return	This pin must be grounded either on host or client side. See pin 35.
18	36	Interlock Return	Return	Return / reference pin for an external interlock signal. For a description of the interlock circuit see pin 36.
19	N/A	GND	GND	DC ground connection common to chassis ground.
20	1	RF Power Setpoint	AI	The signal provided to this analog input represents a linearly scaled setting for the RF power setpoint. The function of the signal provided to this analog input depends on the power control mode. In forward power control mode it sets the

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				requested forward power, in load power control mode the requested load power. The default voltage range for this analog input is 0 V to 10 V. 0 V to 10 V correlates to 0 W to nominal RF power. For example a voltage of 5 V correlates to 50 % of the nominal RF power.
21	1	Match Position Tune Setpoint	AI	The signal provided to this analog input represents a linearly scaled setting for the position of the C <sub>Tune</sub> capacitor. The default voltage range for this analog input is 0 V to 10 V. 0 V to 10 V correlates to 0 % to 100 % of the capacitor's range. For example a voltage of 5 V correlates to a capacitor position of 50 %.
22	1	Process Control Feedback	AI	The signal provided to this analog input is used as process control feedback input, where the process control setpoint is given by pin 2. The scaling for Process Control Setpoint (pin 2) and Process Control Feedback (pin 22) must be identical. This signal closes the control loop around external components in the RF path. Typically, matching networks provide a scaled DC bias or RF peak voltage monitor signal which is applied to this pin. When set to process control mode, the generator compares the value for process control setpoint with process control feedback and adjusts the RF output power to maintain both values at the same level. The default voltage range for this analog input is 0 V to 10 V. 0 V to 10 V correlates to 0 to maximum process control value (4000 V default maximum value). Please note that this input does only accept positive values. For negative DC bias voltages the scaled absolute value must be provided to this pin.
23	8	Reflected Power Monitor	AO	The signal on this analog output provides a linearly scaled readback of the RF reflected power. The default range is 0 V to 10 V. 0 V to 10 V correlates to 0 W to nominal RF power. For example a voltage 1 V correlates to 10 % of the nominal RF power.
24	8	Match Position Tune	AO	This signal on this analog output provides a linearly scaled readback of the position of the C <sub>Tune</sub> capacitor. The default range is 0 V to 10 V. 0 V to 10 V correlates to 0 % to 100 % of the capacitor range. For example a voltage of 5 V correlates to a capacitor position of 50 %.
25	8	Not Used	AO	This pin is not used by default.

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26	8	Not Used	AO	This pin is not used by default.
27	9, 10, 11, 12, 28, 29, 30	Digital Input Return	Return	Common return pin for digital inputs. This pin must be grounded either on host or client side.
28	27	RF Power On	DI	The signal on this digital input enables or disables RF output power. A transition from <i>low</i> to <i>high</i> state will enable RF output power, a transition from <i>high</i> to <i>low</i> state will disable RF output power.
29	27	Process Control	DI	The signal on this digital selects forward power or process control regulation mode. A transition from <i>low</i> to <i>high</i> state will enable process control regulation mode, a transition from <i>high</i> to <i>low</i> state will enable forward power regulation mode. (See also pin 10.)
30	27	Set Match Capacitor	DI	The signal on this digital input is used to apply certain capacitor positions. A transition from <i>low</i> to <i>high</i> state will cause the generator to move the capacitors in an attached matching network to the positions provided by the signals on pin 21 and pin 24.
31	16	Matching Active	DO	When the generator detects that the capacitors in an attached matching network are moving, a low impedance is created between this pin and pin 16
32	16	Error	DO	When the generator is in an error state, a low impedance is created between this pin and pin 16.
33	16	CEX Locked	DO	When the generator has recognized a valid CEX signal on the CEX input and has locked on it, a low impedance is created between this pin and pin 16.
34	16	Ready Status	DO	When the generator is ready to deliver RF power, a low impedance is created between this pin and pin 16.
35	17	Blanking / Pulsing	Pulse Input	An external square wave signal can be applied to this digital input to externally pulse the RF output power.
36	18	Interlock	DI	To satisfy the interlock and to allow the RF output to be enabled, a voltage of 5 V to 24 V, referenced to pin 18, must be applied to this input. The voltage can be obtained from pin 37 (13.8 V DC) through an external loop. In this configuration pin 18 must be grounded. Alternatively an external voltage of 5 V to 24 V (minimum current 10 mA) referenced to pin 18 can be applied to this input to satisfy the interlock.
37	19	13.8 V DC Supply Voltage	Supply	Supply voltage of 13.8 V (maximum current 100 mA).