



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx EXA 15.0005

Issue No: 1

Certificate history:

Issue No. 1 (2017-12-14)

Issue No. 0 (2015-11-20)

Status: **Current**

Page 1 of 4

Date of Issue: **2017-12-14**

Applicant: **Solexy USA, LLC**
10168 International Blvd, Cincinnati, Ohio 45246
United States of America

Equipment: **Antenna Coupler RX Series**
Optional accessory:

Type of Protection: **Ex db, Ex [ia], Ex mb, Ex tb**

Marking:
Ex db mb [ia Ma] I Mb
Ex db mb [ia Ga] IIA/IIB/IIC T5/T6 Gb
Ex mb tb [ia Da] IIIC T100°C/T80°C Db

*Approved for issue on behalf of the IECEx
Certification Body:*

Damir Korunić

Position:

Director General

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**Agencija za prostore ugrožene eksplozivnom atmosferom (Ex-
Agencija)**
Industrijska 25
HR-10431 Sveta Nedelja
Croatia





IECEX Certificate of Conformity

Certificate No: IECEX EXA 15.0005 Issue No: 1
Date of Issue: 2017-12-14 Page 2 of 4
Manufacturer: **Solexy USA, LLC**
10168 International Blvd, Cincinnati, Ohio 45246
United States of America

Additional Manufacturing location(s):

Solexy SRL
via Enrico Fermi, 2
25015 Desenzano del Garda (BS)
Italy

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2014 Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[HR/EXA/ExTR15.0015/00](#)

Quality Assessment Report:

[GB/ITS/QAR17.0007/00](#)

[NO/PRE/QAR15.0033/01](#)



IECEX Certificate of Conformity

Certificate No: IECEx EXA 15.0005

Issue No: 1

Date of Issue: 2017-12-14

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Solexy RX series Antenna Coupler permits the installation of non-Ex certified radio antenna in hazardous area. It acts as capacitive coupling between an RF transmitter/receiver installed in enclosure and passive antenna installed outside enclosure directly connected to the antenna coupler or through cable connection, and it also acts as a flameproof bushing suitable to be mounted to the cable entry of a flameproof enclosure engaged in a threaded flameproof joint. The antenna coupler blocks DC signals and provides very high impedance to low frequency AC signals; it blocks power voltage in the event of a radio transmitter/receiver fault. If a radio transmitter/receiver is installed in a safe area, the Antenna Coupler protects the output signal using a cable connected to an antenna that is installed in hazardous area.

For details refer to Annex of this certificate.

SPECIFIC CONDITIONS OF USE: NO



IECEX Certificate of Conformity

Certificate No: IECEX EXA 15.0005

Issue No: 1

Date of Issue: 2017-12-14

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Update QAR references. NO/PRE/QAR15.0033/01 instead of NO/DNV/QAR14.0007/00 and GB/ITS/QAR17.0007/00 instead of HR/EXA/QAR14.0001/00.

Update new address for USA manufacturer location.

Annex:

[IECEX_EXA_150005_01_annex_01_final.pdf](#)

ANNEX to Issue No. Date: Page:

The Solexy RX series Antenna Coupler permits the installation of non-Ex certified radio antenna in hazardous area. It acts as capacitive coupling between an RF transmitter/receiver installed in enclosure and passive antenna installed outside enclosure directly connected to the antenna coupler or through cable connection, and it also acts as a flameproof bushing suitable to be mounted to the cable entry of a flameproof enclosure engaged in a threaded flameproof joint. The antenna coupler blocks DC signals and provides very high impedance to low frequency AC signals; it blocks power voltage in the event of a radio transmitter/receiver fault. If a radio transmitter/receiver is installed in a safe area, the Antenna Coupler protects the output signal using a cable connected to an antenna that is installed in hazardous area.

Technical data:Maximum input voltage: $U_m = 250 V_{AC}$ (50 Hz/60 Hz) or $250 V_{DC}$

Maximum input RF frequency: 6 GHz

Minimum internal impedance of RF transmitter allowed: 50Ω

The equipment is intended to be used in an ambient temperature range according to the following table:

Gas	Dust	Ta
T5	T100°C	$-40^\circ\text{C} \leq T_a \leq 85^\circ\text{C}$
T6	T80°C	$-40^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$

Maximum service temperature T_s of antenna coupler when installed on other equipment shall not exceed 85°C .

Refer to Table 2, Table 3, Table 4, Table 5, Table 6 and Table 7 which show relation between applicable combination of gas/dust group vs. type of antenna coupler, maximum allowable RF transmitter output power vs. frequency, maximum allowable antenna gain and type of antenna coupler.

Type designation coding

XXX X X XX XX X XX
 1 2 3 4 5 6 7

Table 1

1	Coupler Series	RXF	RP-SMA female antenna connection
		RXN	N female antenna connection
		RXB	BNC female antenna connection
		RXT	TNC female antenna connection
		RXS	SMA female antenna connection
2	Threading	M	M25x1.5
		3	¾" npt-m
3	Material	S	AISI 303
		C	AISI 316
		L	AISI 316L
4	Coaxial/Radio connector	xx	2 digit for coax connector assembled on coax cable
5	Coaxial cable length	xx	2 digit for coaxial cable length (in inches) <i>(00 for double connector execution)</i>
6	Version	x	1 digit for version
7	Certification marking	X0	Atex – IECEX
		N0	UL-CSA
		XN	Atex – IECEX – UL-CSA (double marking)

Table 2

Group I

		Radio Power, mW(dBm)											
	Code	H	J	K	L	M	N	O	P	Q	R	S	T
Maximum Frequency [MHz]	100	3753 (35,7)	3892 (35,9)	4004 (36,0)	4147 (36,1)	4410 (36,4)	4560 (36,5)	4743 (36,7)	5120 (37,0)	5445 (37,3)	5644 (37,5)		
	200	3699 (35,6)	3726 (35,7)	3753 (35,7)	3808 (35,8)	3864 (35,8)	3920 (35,9)	4032 (36,0)	4205 (36,2)	4500 (36,5)	4620 (36,6)	4743 (36,7)	
	300	3672 (35,6)	3699 (35,6)	3726 (35,7)	3726 (35,7)	3753 (35,7)	3781 (35,7)	3836 (35,8)	3920 (35,9)	4032 (36,0)	4089 (36,1)		
	400	3591 (35,5)											
	500	3225 (35,0)											
	600	2904 (34,6)											
	700	2645 (34,2)											
	800	2420 (33,8)											
	900	2247 (33,5)											
	1000	2080 (33,1)											
	1100	1960 (32,9)											
	1200	1824 (32,6)											
	1300	1729 (32,3)											
	1400	1638 (32,1)											
	1500	1548 (31,8)											
	1600	1462 (31,6)											
	1700	1394 (31,4)											
	1800	1344 (31,2)											
	1900	1280 (31,0)											
	2000	1232 (30,9)											
	2100	1185 (30,7)											
	2200	1140 (30,5)											
	2300	1095 (30,3)											
	2400	1051 (30,2)											
	2500	1022 (30,0)											
	2600	980 (29,9)											
	2700	952 (29,7)											
	2800	924 (29,6)											
	2900	897 (29,5)											
	3000	871 (29,4)											
	3250	649 (28,1)											
	3500	520 (27,1)											
3750	432 (26,3)												
4000	369 (25,6)												
4250	328 (25,1)												
4500	288 (24,5)												
4750	259 (24,1)												
5000	238 (23,7)												
5250	217 (23,3)												
5500	198 (22,9)												
5750	186 (22,6)												
6000	174 (22,4)												

Table 3

Group IIA

Code	Radio Power, mW(dBm)											
	H	J	K	L	M	N	O	P	Q	R	S	T
100	3251 (35,1)	3328 (35,2)	3380 (35,2)	3484 (35,4)	3618 (35,5)	3753 (35,7)	4004 (36,0)	4321 (36,3)	4681 (36,7)	5120 (37,0)	5644 (37,5)	
200	3200 (35,0)	3225 (35,0)	3251 (35,1)	3276 (35,1)	3302 (35,1)	3328 (35,2)	3406 (35,3)	3511 (35,4)	3672 (35,6)	3864 (35,8)	4176 (36,2)	4470 (36,5)
300	3200 (35,0)		3225 (35,0)		3251 (35,1)		3276 (35,1)	3328 (35,2)	3406 (35,3)	3511 (35,4)	3672 (35,6)	3864 (35,8)
400	3200 (35,0)				3225 (35,0)		3251 (35,1)	3276 (35,1)	3302 (35,1)	3354 (35,2)	3458 (35,3)	3591 (35,5)
500	3200 (35,0)						3225 (35,0)					
600	2904 (34,6)											
700	2645 (34,2)											
800	2420 (33,8)											
900	2247 (33,5)											
1000	2080 (33,1)											
1100	1960 (32,9)											
1200	1824 (32,6)											
1300	1729 (32,3)											
1400	1638 (32,1)											
1500	1548 (31,8)											
1600	1462 (31,6)											
1700	1394 (31,4)											
1800	1344 (31,2)											
1900	1280 (31,0)											
2000	1232 (30,9)											
2100	1185 (30,7)											
2200	1140 (30,5)											
2300	1095 (30,3)											
2400	1051 (30,2)											
2500	1022 (30,0)											
2600	980 (29,9)											
2700	952 (29,7)											
2800	924 (29,6)											
2900	897 (29,5)											
3000	871 (29,4)											
3250	649 (28,1)											
3500	520 (27,1)											
3750	432 (26,3)											
4000	369 (25,6)											
4250	328 (25,1)											
4500	288 (24,5)											
4750	259 (24,1)											
5000	238 (23,7)											
5250	217 (23,3)											
5500	198 (22,9)											
5750	186 (22,6)											
6000	174 (22,4)											

 Maximum
Frequency
[MHz]

Table 4

Group IIB

Code	Radio Power, mW(dBm)												
	H	J	K	L	M	N	O	P	Q	R	S	T	
100	2761 (34,4)	2832 (34,5)	2904 (34,6)	2976 (34,7)	3075 (34,8)	3200 (35,0)	3380 (35,2)	3500 (35,4)					
200	2737 (34,3)	2761 (34,4)	2784 (34,4)		2808 (34,4)	2856 (34,5)	2904 (34,6)	3001 (34,7)	3125 (34,9)	3276 (35,1)	3500 (35,4)		
300	2737 (34,3)		2761 (34,4)			2784 (34,4)	2808 (34,4)	2856 (34,5)	2904 (34,6)	2976 (34,7)	3125 (34,9)	3276 (35,1)	
400	2737 (34,3)				2761 (34,4)		2784 (34,4)	2808 (34,4)	2832 (34,5)	2880 (34,5)	2952 (34,7)	3050 (34,8)	
500	2737 (34,3)					2761 (34,4)		2784 (34,4)	2808 (34,4)	2832 (34,5)	2880 (34,5)	2952 (34,7)	
600	2737 (34,3)						2761 (34,4)		2784 (34,4)	2808 (34,4)	2832 (34,5)	2880 (34,5)	
700	2645 (34,2)												
800	2420 (33,8)												
900	2247 (33,5)												
1000	2080 (33,1)												
1100	1960 (32,9)												
1200	1824 (32,6)												
1300	1729 (32,3)												
1400	1638 (32,1)												
1500	1548 (31,8)												
1600	1462 (31,6)												
1700	1394 (31,4)												
1800	1344 (31,2)												
1900	1280 (31,0)												
2000	1232 (30,9)												
2100	1185 (30,7)												
2200	1140 (30,5)												
2300	1095 (30,3)												
2400	1051 (30,2)												
2500	1022 (30,0)												
2600	980 (29,9)												
2700	952 (29,7)												
2800	924 (29,6)												
2900	897 (29,5)												
3000	871 (29,4)												
3250	649 (28,1)												
3500	520 (27,1)												
3750	432 (26,3)												
4000	369 (25,6)												
4250	328 (25,1)												
4500	288 (24,5)												
4750	259 (24,1)												
5000	238 (23,7)												
5250	217 (23,3)												
5500	198 (22,9)												
5750	186 (22,6)												
6000	174 (22,4)												

 Maximum
Frequency
[MHz]

Table 5

Group IIC

Code	Radio Power, mW(dBm)												
	J	K	L	M	N	O	P	Q	R	S	T		
100	1843 (32,6)	1862 (32,6)	1901 (32,7)	1960 (32,9)	2000 (33.0)								
200	1786 (32,5)		1805 (32,5)	1824 (32,6)	1843 (32,6)	1862 (32,6)	1920 (32,8)	1980 (32,9)	2000 (33.0)				
300	1767 (32,4)	1786 (32,5)			1805 (32,5)	1824 (32,6)	1843 (32,6)	1862 (32,6)	1920 (32,8)	1980 (32,9)	2000 (33,0)		
400	1767 (32,4)		1786 (32,5)				1805 (32,5)	1824 (32,6)	1862 (32,6)	1901 (32,7)	1940 (32,8)		
500	1767 (32,4)			1786 (32,5)				1805 (32,5)	1824 (32,6)	1862 (32,6)	1881 (32,7)		
600	1767 (32,4)				1786 (32,5)				1805 (32,5)	1824 (32,6)	1862 (32,6)		
700	1767 (32,4)				1786 (32,5)				1805 (32,5)		1843 (32,6)		
800	1767 (32,4)					1786 (32,5)			1805 (32,5)	1824 (32,6)			
900	1767 (32,4)						1786 (32,5)					1805 (32,5)	
1000	1767 (32,4)						1786 (32,5)					1805 (32,5)	
1100	1767 (32,4)								1786 (32,5)				
1200	1767 (32,4)								1786 (32,5)				
1300	1729 (32,3)												
1400	1638 (32,1)												
1500	1548 (31,8)												
1600	1462 (31,6)												
1700	1394 (31,4)												
1800	1344 (31,2)												
1900	1280 (31,0)												
2000	1232 (30,9)												
2100	1185 (30,7)												
2200	1140 (30,5)												
2300	1095 (30,3)												
2400	1051 (30,2)												
2500	1022 (30,0)												
2600	980 (29,9)												
2700	952 (29,7)												
2800	924 (29,6)												
2900	897 (29,5)												
3000	871 (29,4)												
3250	649 (28,1)												
3500	520 (27,1)												
3750	432 (26,3)												
4000	369 (25,6)												
4250	328 (25,1)												
4500	288 (24,5)												
4750	259 (24,1)												
5000	238 (23,7)												
5250	217 (23,3)												
5500	198 (22,9)												
5750	186 (22,6)												
6000	174 (22,4)												

 Maximum
Frequency
[MHz]

Table 6

Equipment for	Max Threshold power
Group I	6W (37,78 dBm)
Group IIA	6W (37,78 dBm)
Group IIB	3,5W (35,44 dBm)
Group IIC	2W (33,01 dBm)
Group III	6W (37,78 dBm)

The maximum allowable antenna gain shall be calculated using following formula:

$$\text{Antenna gain (dBi)} = \text{Max threshold power (dBm)} - \text{RF radio output power (dBm)} + \text{Coax cable loss (dB)}^*$$

*when used for antenna connection to Solexy Antenna Coupler

In case of device with multiple antennas, each antenna gain shall be calculated according to above formula.

For maximum allowable RF transmitter output power (Table 2 to Table 5), if RF transmitter frequency is between values in table, use next higher value.

For antenna gain calculation and installation group following tables shall be considered:

Table 7

Antenna coupler type	Group
RX____H_	I, IIA, IIB, IIIA, IIIB, IIIC
RX____J_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____K_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____L_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____M_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____N_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____O_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____P_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____Q_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____R_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____S_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC
RX____T_	I, IIA, IIB, IIC, IIIA, IIIB, IIIC