



849 NW STATE ROAD 45  
NEWBERRY, FL 32669 USA  
PH: 888.472.2424 OR 352.472.5500  
FAX: 352.472.2030  
EMAIL: [INFO@TIMCOENGR.COM](mailto:INFO@TIMCOENGR.COM)  
[HTTP://WWW.TIMCOENGR.COM](http://WWW.TIMCOENGR.COM)

---

## RF Exposure Evaluation Report

<b>APPLICANT</b>	ROCKWELL COLLINS
	AIR TRANSPORT SYSTEMS 1300 WILSON BLVD. SUITE 200 ARLINGTON VA 22209 USA
<b>FCC ID</b>	AJK8222259
<b>MODEL NUMBER</b>	RTA-4218
<b>PRODUCT DESCRIPTION</b>	WEATHER RADAR
<b>STANDARD APPLIED</b>	CFR 47 Part 2.1091
<b>PREPARED BY</b>	Cory Leverett

We, TIMCO ENGINEERING, INC. would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and meets the requirements.

The attached report shall not be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

## GENERAL REMARKS

### Attestations

This equipment has been evaluated in accordance with the standards identified in this report. To the best of my knowledge and belief, these evaluations were performed using the procedures described in this report.

I attest that the necessary evaluations were made, under my supervision, at:

Timco Engineering Inc.  
849 NW State Road 45  
Newberry, FL 32669



**Authorized Signatory Name:**

Cory Leverett

Engineering Project Manager

**Date:**           **11/12/2015**

# RF Exposure Requirements

## General information

Device type: WEATHER RADAR

Devices that operate under Part 87 of this chapter are subject to RF exposure evaluation prior to equipment authorization or use.

## Antenna

The manufacturer does not specify an antenna, but a typical antenna has a gain of 0 dBi.

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Fixed mounted	Any	omni	0

## Operating configuration and exposure conditions:

The conducted output power is shown in the table below. Typical use qualifies for a maximum duty cycle factor of 100%.

Operation: A typical installation consists of an antenna system with a 10 meter coaxial cable of the type RG 213/ U type which has a loss as follows;

Nom. Attenuation for RG 213/U:

Frequency MHz	Attenuation per 100ft. dB
1	.27
10	.55
50	1.3
100	1.9
200	2.7
400	4.1
700	6.5
900	7.6
1000	8.0
4000	21.5

## MPE Calculation:

The minimum separation distance is calculated as follows:

$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$	Power density: $P_d(mW/cm^2) = \frac{E^2}{3770}$
--	--

The limit for general uncontrolled exposure environment is shown in FCC rule Part 1.11310, Table 1.

<b>Minimum Separation Distance for Mobile or Fixed Devices</b>
<b>Controlled Exposure</b>

<b>Insert values in yellow highlighted boxes to determine Minimum Separation Distance</b>
---

Max Power	50	W	<i>equals</i>	Max Power	50000	mW
Duty Cycle	100	%	<i>equals</i>	Duty Factor	1	numeric
Antenna Gain	30.3	dBi	<i>equals</i>	Gain numeric	1071.519305	numeric
Coax Loss	0	dB		Gain - Coax Loss	1071.519305	numeric

Power Density 5 mW/cm<sup>2</sup> ←

Enter power Density from the chart to the right

Frequency 9476.9 MHz

Rule Part 1.1310, Table 1 (A)

Freq range	Power density	Enter this value
MHz	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>
0.3 - 3	100	100
3 - 30	900/f <sup>2</sup>	0.0
30-300	1	1
300-1,500	f/300	31.6
1,500-100,000	5	5

f = frequency in MHz

<b>Minimum Separation Distance</b>	<b>923 cm</b>	<b>9.23 m</b>
------------------------------------	---------------	---------------

Minimum Separation in Inches 363.2699 Inches

Applicant: ROCKWELL COLLINS

FCC ID: AJK8222259

Report: R\ROCKWELL\_AJK\2061UT15\2061UT15TestReport.docx