

## Information about the Applicant

<b>Applicant:</b>	Radioframe Networks, Inc.
<b>Address:</b>	1120 112th Ave NE, Suite 600
<b>City, State, Zip</b>	Bellevue, WA 98004
<b>Test Requested By:</b>	Steve Peters
<b>Model:</b>	MC-15
<b>FCC ID:</b>	PURMCSERIES10
<b>Agent</b>	Radioframe Networks, Inc.
<b>Approval Type</b>	Certification
<b>Equipment Type</b>	Microcell cellular base station for iDEN radio.
<b>Rule Part</b>	90.691

## Overview

This Base station operates in the 850 MHz ESMR Cellular service. See cover letter from applicant for further details.

## Findings

<b>Finding</b>	<b>Cover Letter</b> <i>Please provide a cover letter that briefly describes the radio (e.g. Model 41233, 802.11(b) access point), the type of equipment approval that is being sought (e.g. Class II permissive change, or original certification), and the applicable rule parts. Also include any product specific FCC interpretations you may have received.</i>
<b>Resolution</b>	A cover letter has been provided.
<b>Finding</b>	<b>47 Cfr 2.1033(C)(5)</b> A block diagram showing the frequency of all oscillators in the device. The signal path and frequency shall be indicated at each block. The tuning range(s) and intermediate frequency(ies) shall be indicated at each block. A schematic diagram is also required for intentional radiators. <i>The Block diagram meeting the requirements above has not been received.</i>
<b>Resolution</b>	A block diagram has been provided
<b>Finding</b>	<b>47 Cfr 2.1033(c)9)</b> Tune-up procedure over the power range, or at specific operating power levels. <i>The Tune-up procedures are not in the package of information we have.</i>
<b>Resolution</b>	An Installation Guide has been provided.
<b>Finding</b>	<b>47 Cfr 2.1033(C)(10)</b> A schematic diagram and a description of all circuitry and devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation, and for limiting power. <i>The schematics appear to be incomplete.</i>
<b>Resolution</b>	Schematics have been provided

<b>Finding</b>	<p><b>47 Cfr 2.1033(c)(10)</b> Photographs (8x10) of the equipment of sufficient clarity to reveal equipment construction and layout, including meters, if any, and labels for controls and meters and sufficient views of the internal construction to define component placement and chassis assembly. Insofar as these requirements are met by photographs or drawings contained in instruction manuals supplied with the certification request, additional photographs are necessary only to complete the required showing.</p> <p><i>Please identify the radio on the photos and provide photos with the shields removed.</i></p>
<b>Resolution</b>	Photographs have been provided
<b>Finding</b>	<p><b>47 Cfr 2.1033(c)(13)</b> For equipment employing digital modulation techniques, a detailed description of the modulation system to be used, including the response characteristics (frequency, phase and amplitude) of any filters provided, and a description of the modulating wavetrain, shall be submitted for the maximum rated conditions under which the equipment will be operated.</p> <p><i>Please provide the required exhibit</i></p>
<b>Resolution</b>	A theory of operation exhibit has been provided with this information included
<b>Finding</b>	<p><b>47 Cfr 15.21</b> The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</p> <p>Could not locate statement in the manual provided</p>
<b>Resolution</b>	A new user manual has been provided with the required information.
<b>Finding</b>	<p><b>RF Exposure Exhibit</b></p> <ul style="list-style-type: none"> <li>• Incorrectly cited 15.247(b)(5) as the RF Exposure Requirement.</li> <li>• The maximum peak <b>conducted</b> power found in the test report is 22.2 dBm = 166 mW (see page 44 of 122 in Report-RAFNO042.pdf). Since the antenna gain in the RF exposure exhibit is declared to be 0 dBi, then the maximum peak radiated power would be 22.2 dBm EIRP</li> <li>• Table 1.1310 defines the general population limit as <math>f/1500 = 0.567 \text{ mW/cm}^2</math> (where <math>f = 851 \text{ MHz}</math>) Not <math>1 \text{ mW/cm}^2</math></li> <li>• RF Estimates are incorrect. <b>Notice that it does not demonstrate compliance.</b></li> </ul>
<b>Resolution</b>	A new RF Exposure exhibit has been provided.

### Recommendation

All items have been resolved and completed to my satisfaction; therefore I recommend this application for approval.

### Signature



## Opinion

Specification Requirements	Description
15.107	Conducted Power Line Emissions

**Opinion:** The Equipment meets the intent specified by the requirements listed above

**Discussion:** The Applicant has submitted test results in the form of a test report.

**Reference:** Technical Report

Specification Requirements	Description
FCC 15.109(b)	Radiated Emissions Class A

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report

**Reference:** Technical Report

Specification Requirements	Description
2.1055, 90.217	Frequency Stability

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report

**Reference:** Technical Report

Specification Requirements	Description
90.691	Occupied Bandwidth

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report

**Reference:** Technical Report

Specification Requirements	Description
2.1046 & 90.217	Output Power

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report.

**Reference:** Technical Report

Specification Requirements	Description
2.1051 & 90.691	Spurious Conducted Emissions - Transmit

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report

**Reference:** Technical Report

Specification Requirements	Description
15.111(a)	Spurious Conducted Emissions - Receive

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report.

**Reference:** Technical Report

Specification Requirements	Description
90.691 and 2.1053	Spurious Radiated Emissions

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted test results in the form of a test report.

**Reference:** Technical Report

Specification Requirements	Description
2.1091/15.247(b)(5)	RF Exposure

**Opinion:** The Equipment meets the intent specified by the requirements listed above.

**Discussion:** The Applicant has submitted MPE estimates demonstrating compliance.

**Reference:** RF Exposure Exhibit