

| Date     | Rev | Revision Record    | Approved |
|----------|-----|--------------------|----------|
| 1/27/10  | 1   | Initial Release    |          |
| 03/29/10 | 2   | Update             |          |
| 06/8/10  | A   | Production Release |          |
| 08/05/10 | B   | ECN 70261          |          |
|          |     |                    |          |

# Hughes Proprietary

Copyright © 2010 Hughes Network Systems

Notice of Proprietary Information

This document and its contents are proprietary to Hughes Network Systems and are intended solely for the internal use of Hughes Network Systems. This publication and its contents may not be reproduced or distributed for any other purpose without the written permission of Hughes Network Systems.

|                    |                      |             |                                                                          |                |
|--------------------|----------------------|-------------|--------------------------------------------------------------------------|----------------|
| <b>Job</b>         | <b>Approvals</b>     | <b>Date</b> | <b><i>Hughes Network Systems</i></b>                                     |                |
| <b>Originator:</b> | Ryu Kafka            | 6/8/2010    |                                                                          |                |
| <b>Approved:</b>   | Bill Lindsay         | 6/8/2010    |                                                                          |                |
| <b>Checked:</b>    | Nigel Bartlett       | 6/8/2010    | <b>Title: Marking Specification</b><br>9400 Series Marking Specification |                |
|                    |                      |             |                                                                          |                |
| <b>Type</b><br>206 | <b>Sheet 1 of 13</b> |             | <b>CAGE No.</b>                                                          | <b>3L0W2</b>   |
|                    |                      |             | <b>No.</b>                                                               | <b>3500475</b> |

## TABLE OF CONTENTS

| <b><u>Section</u></b>                                 | <b><u>Page</u></b> |
|-------------------------------------------------------|--------------------|
| <b>1.0 INTRODUCTION.....</b>                          | <b>4</b>           |
| 1.1 OVERVIEW.....                                     | 4                  |
| 1.2 REVISION HISTORY .....                            | 4                  |
| <b>2.0 GENERAL .....</b>                              | <b>5</b>           |
| 2.1 MARKINGS.....                                     | 5                  |
| 2.2 FONT .....                                        | 5                  |
| 2.3 IMEI DEFINITION (PRODUCTION) .....                | 5                  |
| 2.4 IMEI DEFINITION (PRE-PRODUCTION) .....            | 5                  |
| 2.5 SERIAL NUMBER.....                                | 5                  |
| 2.6 LABEL CONTENTS .....                              | 6                  |
| 2.6.1 94x0 Radio Assembly IDU Product Variants.....   | 6                  |
| 2.6.2 94x0 Chassis Label.....                         | 6                  |
| 2.6.3 94x0 Radio Assembly Carton Label Contents ..... | 6                  |
| 2.6.4 Kit Product Variants.....                       | 7                  |
| 2.6.5 94x0-xx Over-pack Carton Label Contents.....    | 8                  |
| 2.6.6 Labels .....                                    | 9                  |

|             |   |                      |
|-------------|---|----------------------|
| <b>No.</b>  |   | 3500475              |
| <b>Rev.</b> | B | <b>Sheet 2 of 13</b> |

# TABLE OF FIGURES

Figure 1-1: 94x0-xx Kit breakdown ..... 4

Figure 2-1 Artwork 3500475-0040 ..... 9

Figure 2-2 Artwork 3500475-0041 ..... 9

Figure 2-3 Placement of Chassis Label ..... 10

Figure 2-4 Artwork 3500475-0042 ..... 11

Figure 2-5 Artwork 3500475-0043 ..... 11

Figure 2-6 Artwork 3500475-0044 ..... 12

Figure 2-7 Artwork 3500475-0045 ..... 12

Figure 2-8 Artwork 3500475-0046 ..... 13

Figure 2-9 Artwork 3500475-0047 ..... 13

|      |   |               |
|------|---|---------------|
| No.  |   | 3500475       |
| Rev. | B | Sheet 3 of 13 |

## 1.0 INTRODUCTION

### 1.1 OVERVIEW

This document describes and defines the label specifications for the BGAN-X 9400 Series terminals. The 94x0 is the radio assembly indoor unit (IDU) and the 94x0-xx includes both the 94x0 radio assembly indoor unit and a SpaceCom Class 10 or 11 land mobile tracking antenna outdoor unit (ODU). The 94x0 radio assembly IDU can be one of several variants, each supporting a different set of interfaces. The variant is specified by the MCN “dash” number which is defined in this document. The radio assembly and antenna each have their own carton and are then over packed into a bigger box.

The radio assembly product includes a core module CCA, CM shields, interface board, extrusion housing and WLAN card for the variants supporting WLAN. The module CCA shall be assigned an IMEI prior to “packout” at the end of the production line. Each unit must be uniquely identified for in-plant process control, data collection, warranty return tracking, discrepant material, etc. All barcode labels shall be accompanied by human readable text. The labels shall be printed near real time under QMS control, applied, and verified to be a non-duplicate. All label content specified in this document and in the label artwork will be factory printed.

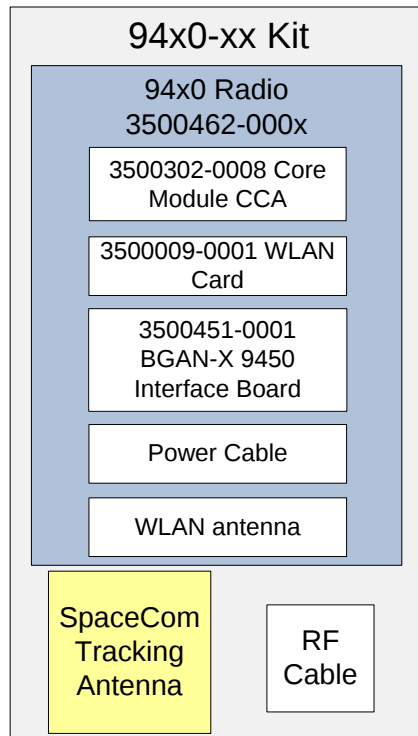


Figure 1-1: 94x0-xx Kit breakdown

### 1.2 REVISION HISTORY

| Revision | Date     | Description                                                                                                          |
|----------|----------|----------------------------------------------------------------------------------------------------------------------|
| 1        | 01/27/10 | Initial Release                                                                                                      |
| 2        | 03/29/10 | Added details for Product variants. Product name changed from 9350H to 9400 Series Revised with inspection comments. |
| A        | 06/8/10  | Production Release.                                                                                                  |
| B        | 08/05/10 | Updated Chassis label description and artwork per ECN 70261                                                          |

|             |               |
|-------------|---------------|
| No. 3500475 |               |
| Rev. B      | Sheet 4 of 13 |

## 2.0 GENERAL

### 2.1 MARKINGS

All human readable markings must be clear and legible when viewed with normal vision at a distance of twelve inches from eye contact. All barcodes will be code 93 compliant. A minimum 200 dpi printer shall be used to print the labels.

### 2.2 FONT

All fonts, text height and line thickness shall be consistent with reference label drawings.

### 2.3 IMEI DEFINITION (PRODUCTION)

The production IMEI number has a length of 15 characters. The IMEI, from character position left to right, is defined in the table below. The 15<sup>th</sup> digit is the IMEI check digit which is to be calculated according to 3GPP TS 23.003. A dash separates each grouping of numbers when the IMEI is printed in human readable form.

The MAC address range is to be verified with the IMEI and is defined in the BGAN-X 9400 Series Production Test Requirements Document, 3500474.

| Radio Assembly Part # | CM Board Part # | TAC (8 digits)         | SN (6 digits) Range | MAC Address |
|-----------------------|-----------------|------------------------|---------------------|-------------|
| 3500462-0001          | 3500302-0008    | 35393703 (Hughes 94x0) | 100001 - 199999     | 00:80:AE    |

### 2.4 IMEI DEFINITION (PRE-PRODUCTION)

The pre-production unit IMEI number has a length of 15 characters. The IMEI, from character position left to right, is defined in the table below. The 15<sup>th</sup> digit is the IMEI check digit which is to be calculated according to 3GPP TS 23.003. A dash separates each grouping of numbers when the IMEI is printed in human readable form. This is to be used for all pre-production units of all dash numbers.

| Radio Assembly Part # | CM Board Part # | TAC (8 digits) | SN (6 digits) Range | MAC Address |
|-----------------------|-----------------|----------------|---------------------|-------------|
| 3500462-000x          | 3500302-0008    | 00440164       | 000001 - 500000     | 00:80:AE    |

### 2.5 SERIAL NUMBER

The serial number is assigned in the factory and forms part of the IMEI number, hence the serial number of the module board (3500302-0008) can be located by looking at digits 5 through 14 of the IMEI number.

Example:

IMEI number                      3539 3703109687 6  
Module Board Serial Number    3703109687

|             |               |
|-------------|---------------|
| No. 3500475 |               |
| Rev. B      | Sheet 5 of 13 |

## 2.6 LABEL CONTENTS

The following table describes the text and barcode fields to be printed on the labels. The labels used are 3500147-0001, which is 2.756" (70mm) by 0.787" (20mm) and 9008276-0009, which is 4" by 3".

### 2.6.1 94x0 Radio Assembly IDU Product Variants

All radio assembly product variants are defined in the table below:

| Model Number | Product MCN  | Description                     | Wi-Fi and FCC Marking applicable |
|--------------|--------------|---------------------------------|----------------------------------|
| 9450         | 3500462-0001 | Radio Assembly (Fully Featured) | Yes                              |

### 2.6.2 94x0 Chassis Label

The following table describes the fields to be printed on the product label which is mounted on the chassis of the 3500462-000x radio assembly

- "Model: 94x0"
- "Input 12/24V" and DC symbol
- Fuse Symbol and "F 15A" to indicate fuse rating is 15Amp fast-blow
- MCN barcode
- MCN number and Rev number
- IMEI bar code
- IMEI number
- "Manufactured in the USA by Hughes"
- RoHS, WEEE, CE marking
- Wi-Fi and FCC marking if applicable

| General Information              |                 | Fields to be Printed |                    |
|----------------------------------|-----------------|----------------------|--------------------|
| Description                      | Blank Label MCN | MCN Barcode Field    | IMEI Barcode Field |
| 94x0 Radio Assembly (production) | 3500147-0001    | 3500462-000x         | See section 2.3    |
| 94x0 Radio Assembly (pre-prod)   | 3500147-0001    | 3500462-000x         | See section 2.4    |

### 2.6.3 94x0 Radio Assembly Carton Label Contents

The radio assembly carton label shall include the following information:

- "Model: 94x0"
- MCN barcode
- MCN number and Rev number
- IMEI bar code

|      |   |               |
|------|---|---------------|
| No.  |   | 3500475       |
| Rev. | B | Sheet 6 of 13 |

- IMEI number
- “Assembled in USA”
- Weight
- Box Size
- Contents:
  - o Mobile Satellite Terminal
  - o Power cable
  - o WLAN antenna
- “Manufactured by Hughes Network Systems [www.hughes.com](http://www.hughes.com)”
- RoHS, WEEE, CE marking
- Wi-Fi and FCC marking if applicable

| General Information                   |                 | Fields to be Printed |                    |
|---------------------------------------|-----------------|----------------------|--------------------|
| Description                           | Blank Label MCN | MCN Barcode Field    | IMEI Barcode Field |
| 94x0 Assembly Carton (production)     | 9008276-0009    | 3500462-000x         | See section 2.3    |
| 94x0 Assembly Carton (pre-production) | 9008276-0009    | 3500462-000x         | See section 2.4    |

#### 2.6.4 Kit Product Variants

All Kit product variants are defined in the table below:

| Model Number | Product MCN  | Description                          | Wi-Fi and FCC Marking applicable |
|--------------|--------------|--------------------------------------|----------------------------------|
| 9450-11      | 3500497-0001 | Kit, 9450, Class 11 (Fully Featured) | Yes                              |
| 9450-10      | 3500497-0002 | Kit, 9450, Class 10 (Fully Featured) | Yes                              |

|      |   |               |
|------|---|---------------|
| No.  |   | 3500475       |
| Rev. | B | Sheet 7 of 13 |

### 2.6.5 94x0-xx Over-pack Carton Label Contents

The 94x0-xx over-pack carton label shall include the following information:

- “Model: 94x0-xx Kit”
- MCN barcode
- MCN number and Rev number
- IMEI bar code
- IMEI number
- “Assembled in USA”
- Weight
- Box Size
- Contents:
  - o Mobile Terminal Kit
  - o Tracking Antenna Kit
- “Manufactured by Hughes Network Systems [www.hughes.com](http://www.hughes.com)”
- RoHS, WEEE, CE marking
- Wi-Fi and FCC marking if applicable

| General Information                       |                 | Fields to be Printed |                    |
|-------------------------------------------|-----------------|----------------------|--------------------|
| Description                               | Blank Label MCN | MCN Barcode Field    | IMEI Barcode Field |
| 94x0-xx Over-pack Carton (production)     | 9008276-0009    | 3500xxx-00xx         | See section 2.3    |
| 94x0-xx Over-pack Carton (pre-production) | 9008276-0009    | 3500xxx-00xx         | See section 2.4    |

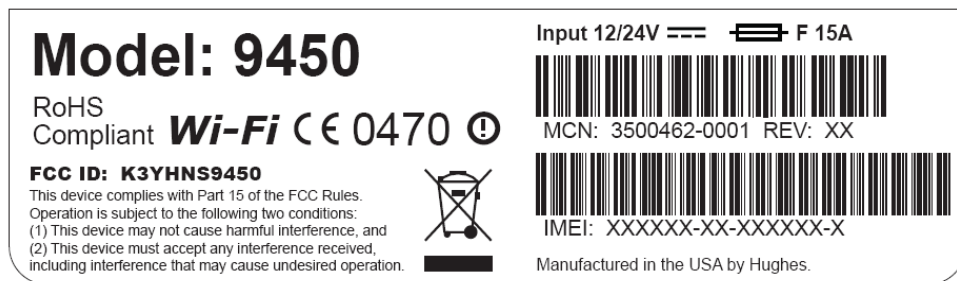
|      |   |               |
|------|---|---------------|
| No.  |   | 3500475       |
| Rev. | B | Sheet 8 of 13 |

## 2.6.6 Labels

**Table 2-1: 9400 Series Label Artwork MCN List**

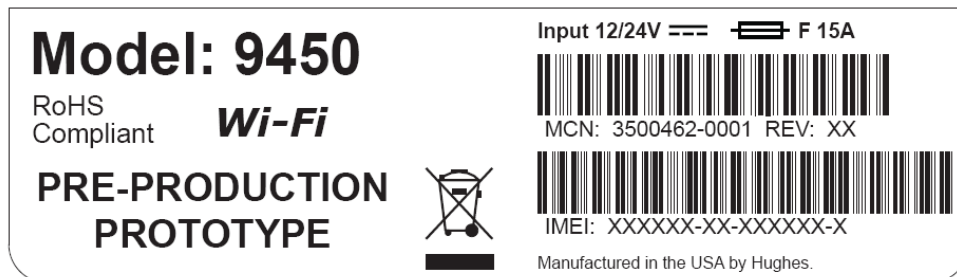
| Label Artwork MCN | Label Description                              | Label for Product MCN |
|-------------------|------------------------------------------------|-----------------------|
| 3500475-0040      | 9450 Chassis Label, production                 | 3500462-0001          |
| 3500475-0041      | 9450 Chassis Label, pre-production             | 3500462-0001          |
| 3500475-0042      | 9450 Carton Label, production                  | 3500462-0001          |
| 3500475-0043      | 9450 Carton Label, pre-production              | 3500462-0001          |
| 3500475-0044      | 9450-10 Over-pack Carton Label, production     | 3500497-0002          |
| 3500475-0045      | 9450-10 Over-pack Carton Label, pre-production | 3500497-0002          |
| 3500475-0046      | 9450-11 Over-pack Carton Label, production     | 3500497-0001          |
| 3500475-0047      | 9450-11 Over-pack Carton Label, pre-production | 3500497-0001          |

### 2.6.6.1 Production Label for 9450 Chassis



**Figure 2-1 Artwork 3500475-0040**

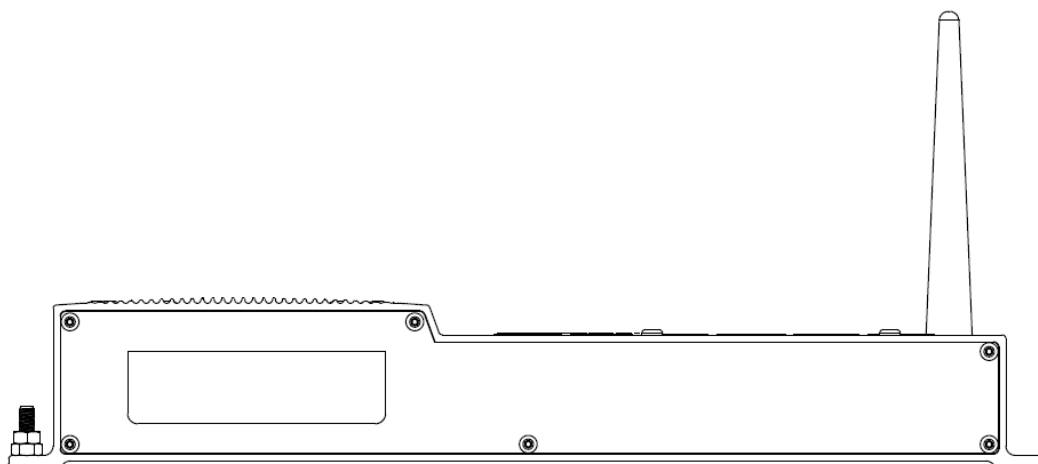
### 2.6.6.2 Pre-Production Label for 9450 Chassis



**Figure 2-2 Artwork 3500475-0041**

|      |         |               |
|------|---------|---------------|
| No.  | 3500475 |               |
| Rev. | B       | Sheet 9 of 13 |

### 2.6.6.3 Chassis Label Placement



**Figure 2-3 Placement of Chassis Label**

|      |   |                |
|------|---|----------------|
| No.  |   | 3500475        |
| Rev. | B | Sheet 10 of 13 |

#### 2.6.6.4 Production Label for 9450 Radio Assembly Carton

|                                                                                                                   |                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <br>MCN: 3500462-0001<br>REV: XX | Manufactured by<br>Hughes Network Systems<br>www.hughes.com                                           |
| <br>IMEI: XXXXXX-XX-XXXXXX-X     | <b>Wi-Fi</b>       |
| Contents:<br>- Mobile Satellite Terminal<br>- Power Cable<br>- WLAN Antenna                                       | RoHS<br>Compliant  |
| Assembled in USA    Model: 9450                                                                                   | CE 0470            |
| <b>FCC ID: K3YHNS9450</b>                                                                                         |                                                                                                       |
| Weight: Gross 3.0 kg, Net 2.4 kg    Box Size: 10 x 31 x 33 cm                                                     |                                                                                                       |

Figure 2-4 Artwork 3500475-0042

#### 2.6.6.5 Pre-Production Label for 9450 Radio Assembly Carton

|                                                                                                                     |                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <br>MCN: 3500462-0001<br>REV: XX | Manufactured by<br>Hughes Network Systems<br>www.hughes.com                                             |
| <br>IMEI: XXXXXX-XX-XXXXXX-X     | <b>Wi-Fi</b>       |
| Contents:<br>- Mobile Satellite Terminal<br>- Power Cable<br>- WLAN Antenna                                         | RoHS<br>Compliant  |
| Assembled in USA    Model: 9450                                                                                     | <b>PRE-<br/>PRODUCTION<br/>PROTOTYPE</b>                                                                |
| Weight: Gross 3.0 kg, Net 2.4 kg    Box Size: 10 x 31 x 33 cm                                                       |                                                                                                         |

Figure 2-5 Artwork 3500475-0043

|      |         |                |
|------|---------|----------------|
| No.  | 3500475 |                |
| Rev. | B       | Sheet 11 of 13 |

2.6.6.6 Production Label for 9450-10 Overpack Carton



Figure 2-6 Artwork 3500475-0044

2.6.6.7 Pre-Production Label for 9450-10 Overpack Carton

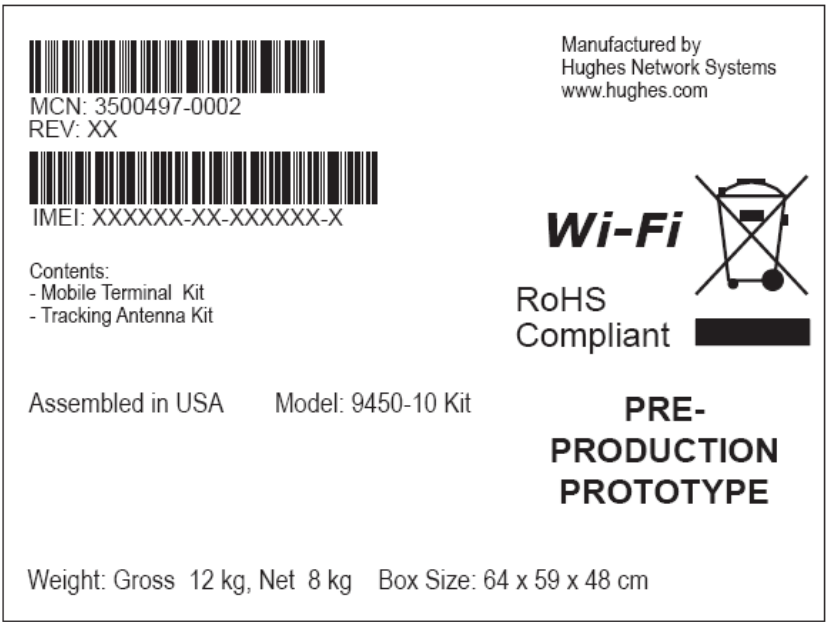


Figure 2-7 Artwork 3500475-0045

|      |   |                |
|------|---|----------------|
| No.  |   | 3500475        |
| Rev. | B | Sheet 12 of 13 |

### 2.6.6.8 Production Label for 9450-11 Overpack Carton

|                                                                                                                   |                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <br>MCN: 3500497-0001<br>REV: XX | Manufactured by<br>Hughes Network Systems<br>www.hughes.com                                           |
| <br>IMEI: XXXXXX-XX-XXXXXX-X     | <b>Wi-Fi</b>       |
| Contents:<br>- Mobile Terminal Kit<br>- Tracking Antenna Kit                                                      | RoHS<br>Compliant  |
| Assembled in USA      Model: 9450-11 Kit                                                                          | CE 0470            |
| <b>FCC ID: K3YHNS9450</b>                                                                                         |                                                                                                       |
| Weight: Gross 8 kg, Net 5 kg    Box Size: 40 x 37 x 36 cm                                                         |                                                                                                       |

Figure 2-8 Artwork 3500475-0046

### 2.6.6.9 Pre-Production Label for 9450-11 Overpack Carton

|                                                                                                                     |                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <br>MCN: 3500497-0001<br>REV: XX | Manufactured by<br>Hughes Network Systems<br>www.hughes.com                                             |
| <br>IMEI: XXXXXX-XX-XXXXXX-X     | <b>Wi-Fi</b>       |
| Contents:<br>- Mobile Terminal Kit<br>- Tracking Antenna Kit                                                        | RoHS<br>Compliant  |
| Assembled in USA      Model: 9450-11 Kit                                                                            | <b>PRE-<br/>PRODUCTION<br/>PROTOTYPE</b>                                                                |
| Weight: Gross 8 kg, Net 5 kg    Box Size: 40 x 37 x 36 cm                                                           |                                                                                                         |

Figure 2-9 Artwork 3500475-0047

|      |   |                |
|------|---|----------------|
| No.  |   | 3500475        |
| Rev. | B | Sheet 13 of 13 |