



**Project Name** : CV30**Date** : 2 August 2006**Revision** : 1.0**Report No.** : CV30-06-ITM-EE-0012**Prepared by** : Tan Huan Fong**Approved by** : Koh Kia Sia**SUBJECT** : Model B Antenna Measurement Report

---

**OBJECTIVE** : Detailed Antenna Measurement Data

---

## 1.0 INTRODUCTION

This documents shall provide a detailed measurement report for the 2.4GHz antenna hard-tool samples developed by Venture Electronics Solutions Pte Ltd for the Intermec PDA Model CV30. The antenna structure is provided by Intermec. The measurement data are measured with the latest hardware configuration as per Model B.

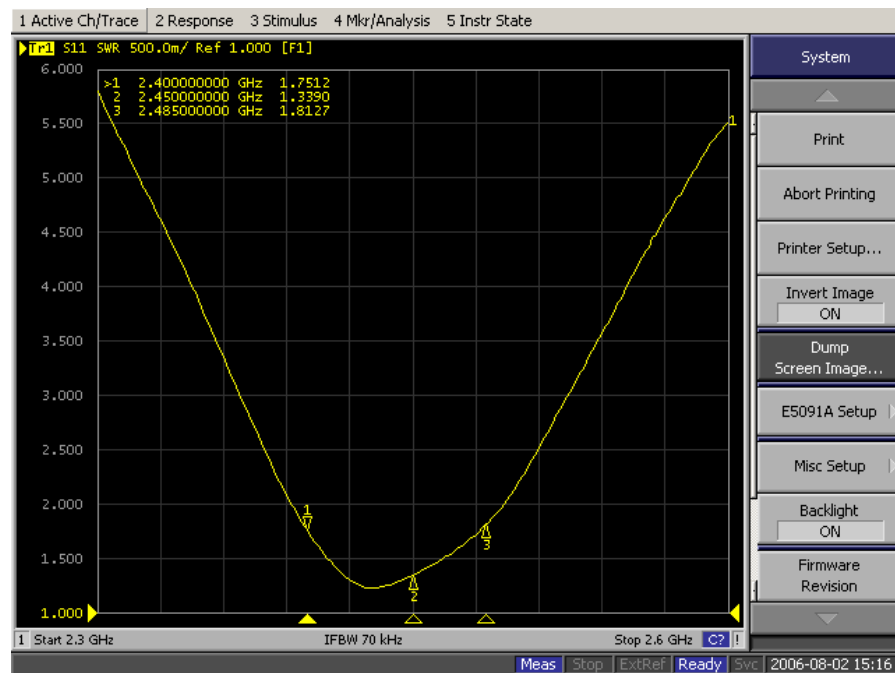
## 2.0 ANTENNA MEASUREMENT SUMMARY

Table 1 a summary of the data for both the Main and Aux Antenna based on the measurement done in a calibrated Satimo 3D Chamber.

| S/N | Description         | Specification             | Main Antenna<br>(Measured Data) | Aux Antenna<br>(Measured Data) |
|-----|---------------------|---------------------------|---------------------------------|--------------------------------|
| 1   | Operating Frequency | 2.4GHz ~ 2.485GHz         | 2.4GHz ~ 2.485GHz               | 2.4GHz ~ 2.485GHz              |
| 2   | VSWR                | 2:1                       | See Figure 1                    | See Figure 2                   |
| 3   | Impedance           | 50 ohm                    | 50 ohm                          | 50 ohm                         |
| 4   | Efficiency          | 45% (min) across passband | See Figure 9                    | See Figure 10                  |
| 5   | Peak Gain           | 0dBi (min)                | 3.13dBi                         | 1.82dBi                        |
| 6   | Average Gain        | -3dBi (min)               | -0.99dBi                        | -2.73dBi                       |
| 7   | Polarization        | Linear                    | Linear                          | Linear                         |
| 8   | Input Power Limit   | 1W                        | 1W                              | 1W                             |
| 9   | Radiation Pattern   | Omni-Directional          | See Section 4.0                 | See Section 5.0                |

**TABLE 1 Antenna Specifications**

## 3.0 VSWR



**Figure 1 Main Antenna VSWR**

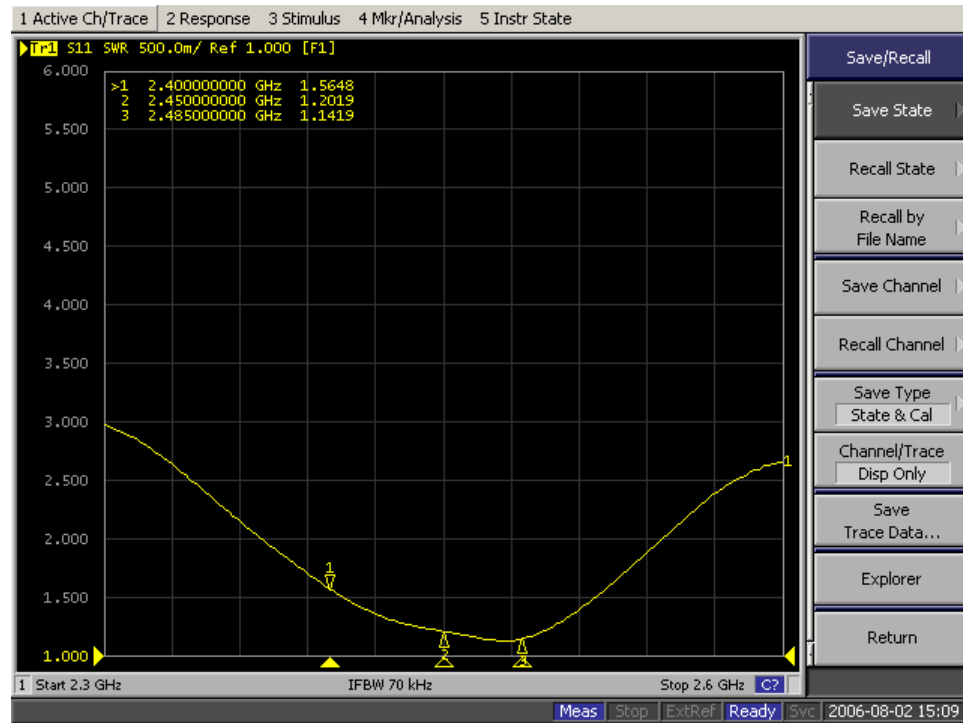


Figure 2 Aux Antenna VSWR

#### 4.0 MAIN ANTENNA RADIATION PATTERN

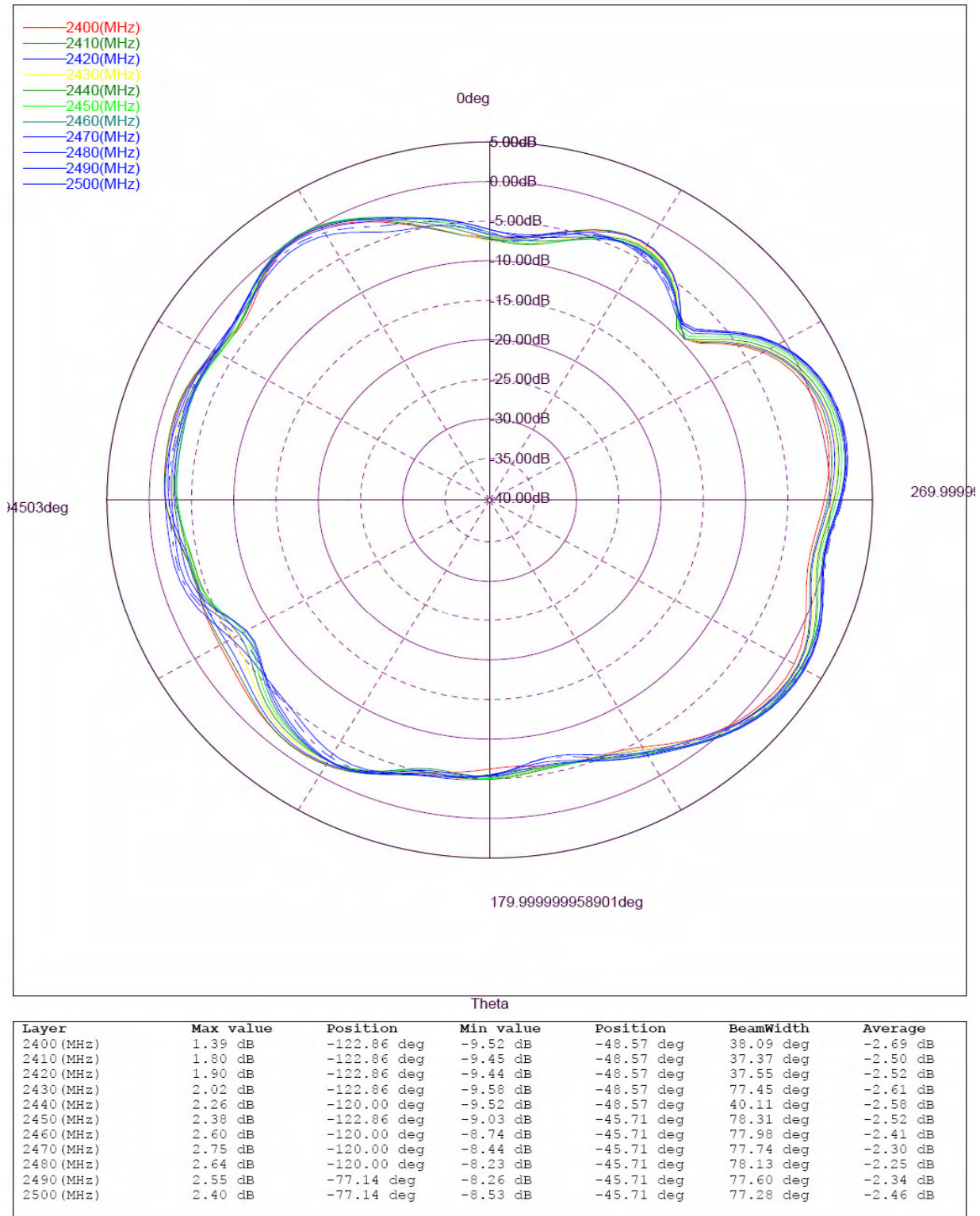


Figure 3 MAIN ANTENNA PHI=0

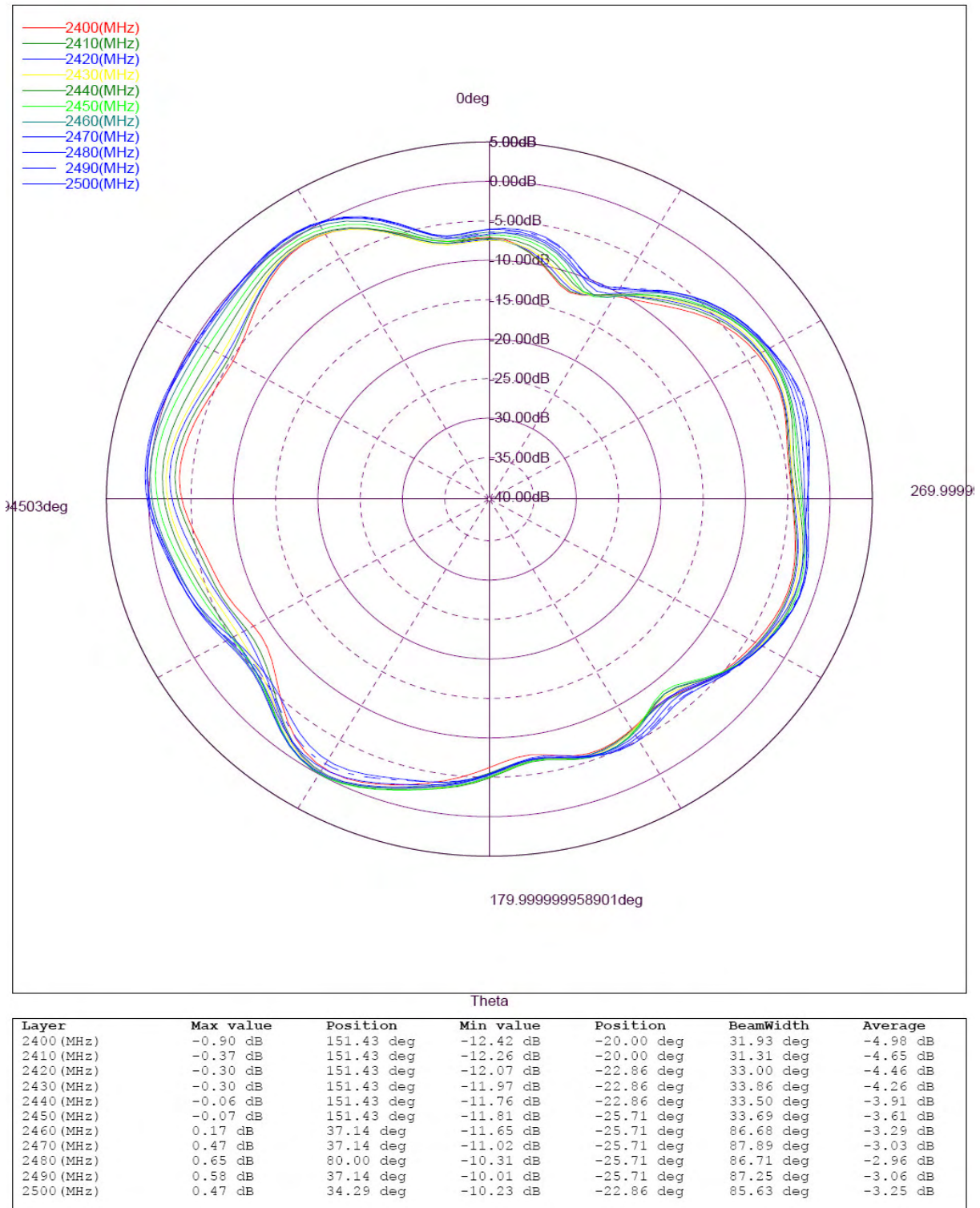


Figure 4 MAIN ANTENNA PHI=90

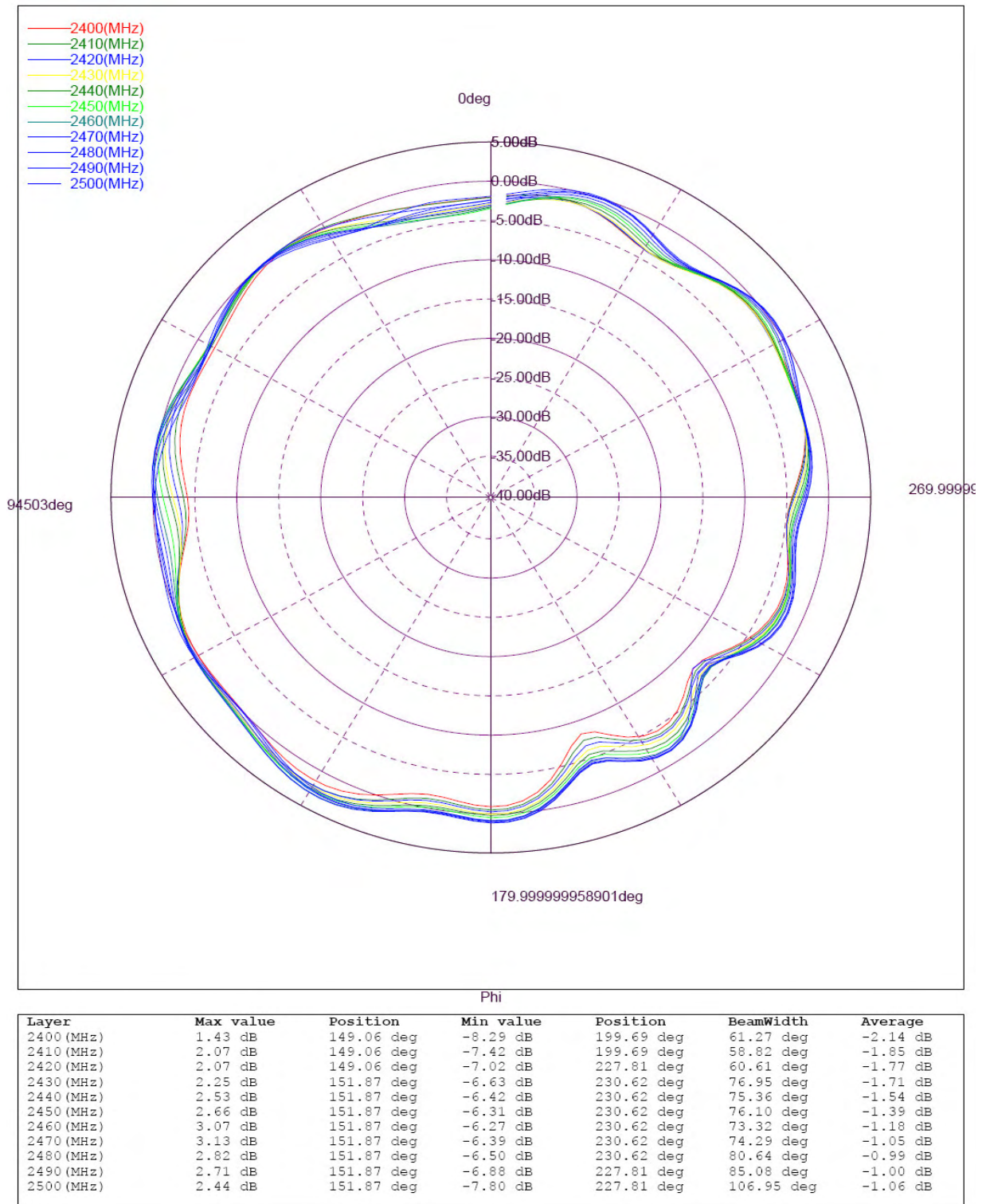


Figure 5 Main Antenna Theta=90

## 5.0 AUX ANTENNA RADIATION PATTERN

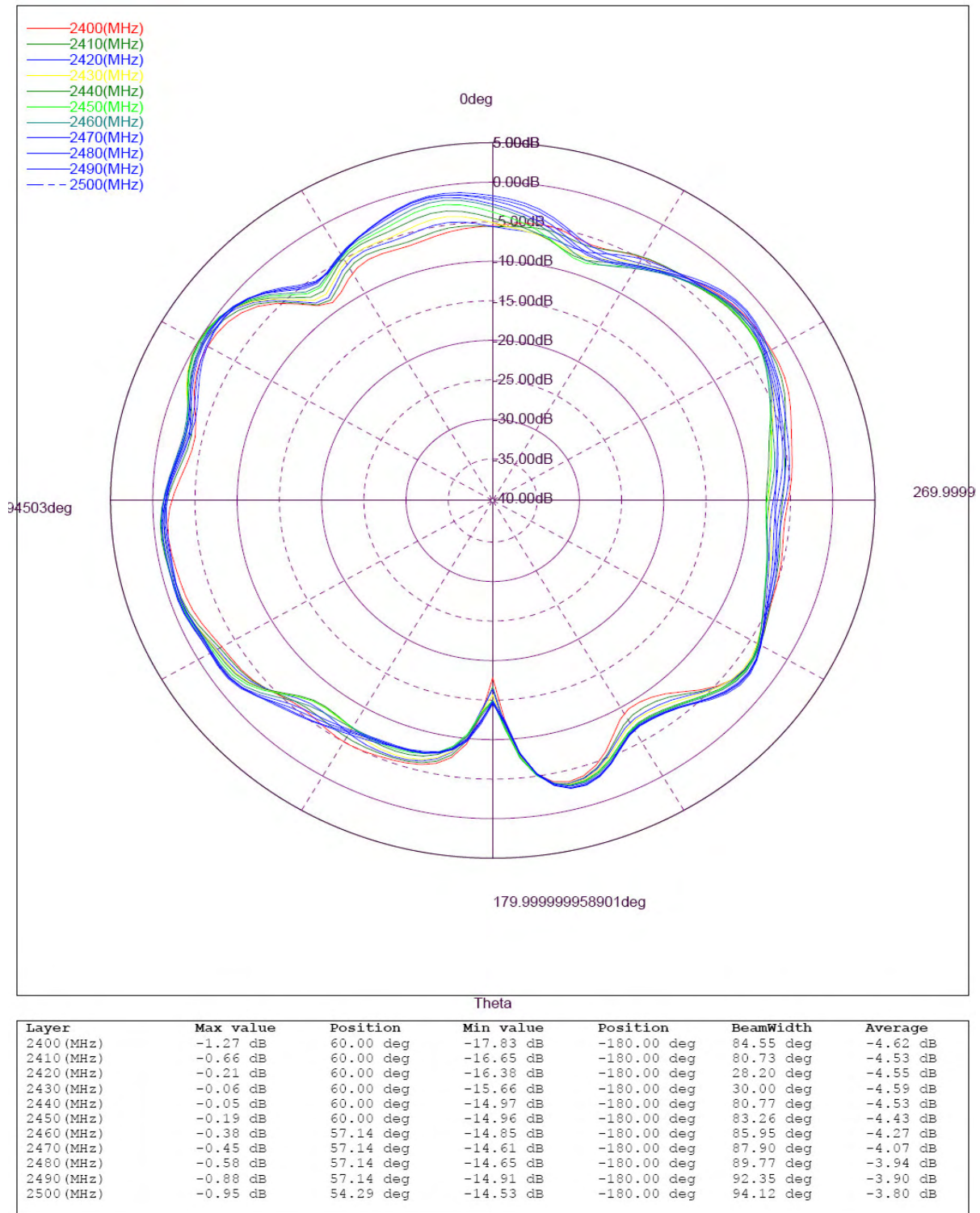


Figure 6 AUX ANTENNA PHI=0

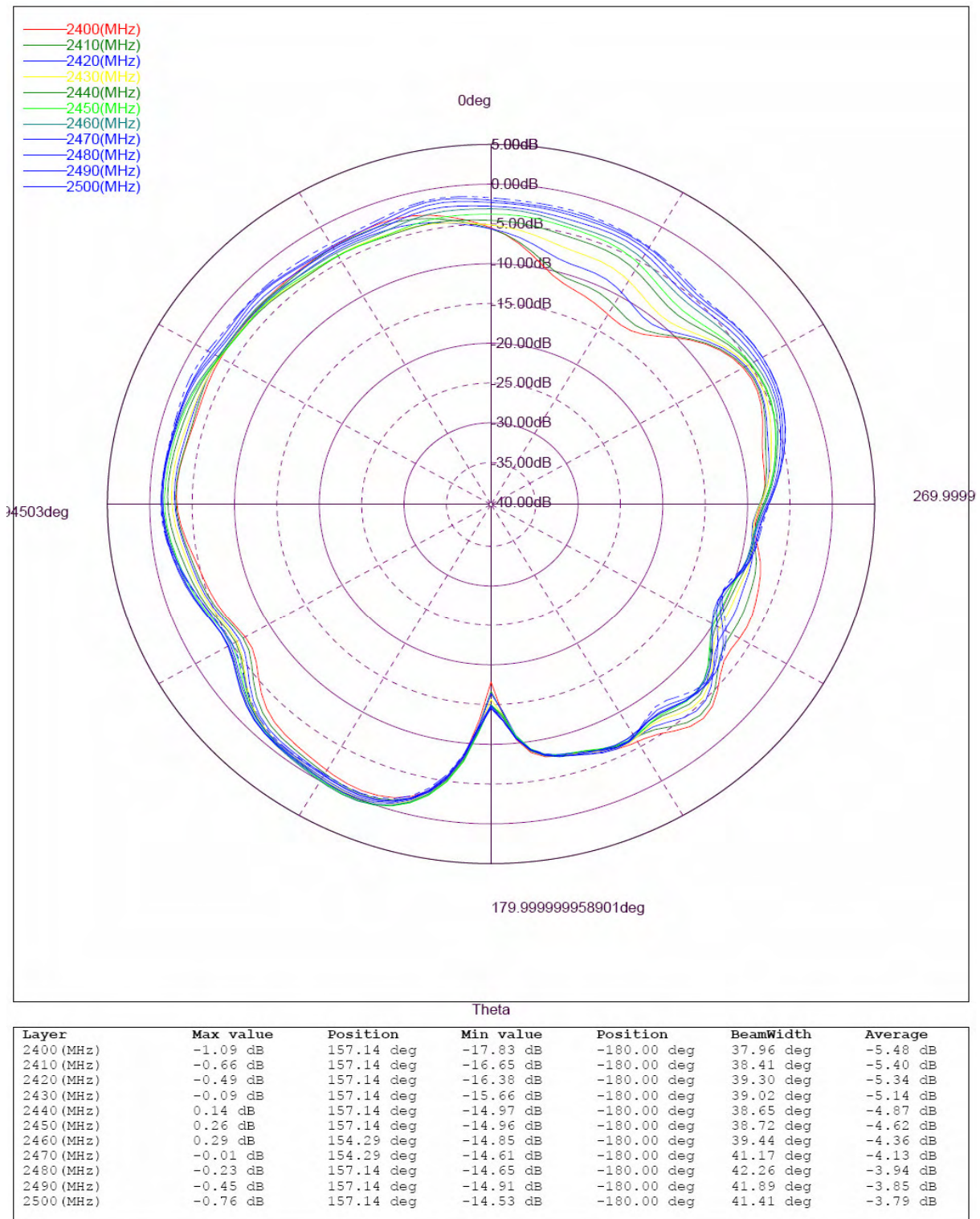


Figure 7 AUX ANTENNA PHI=90

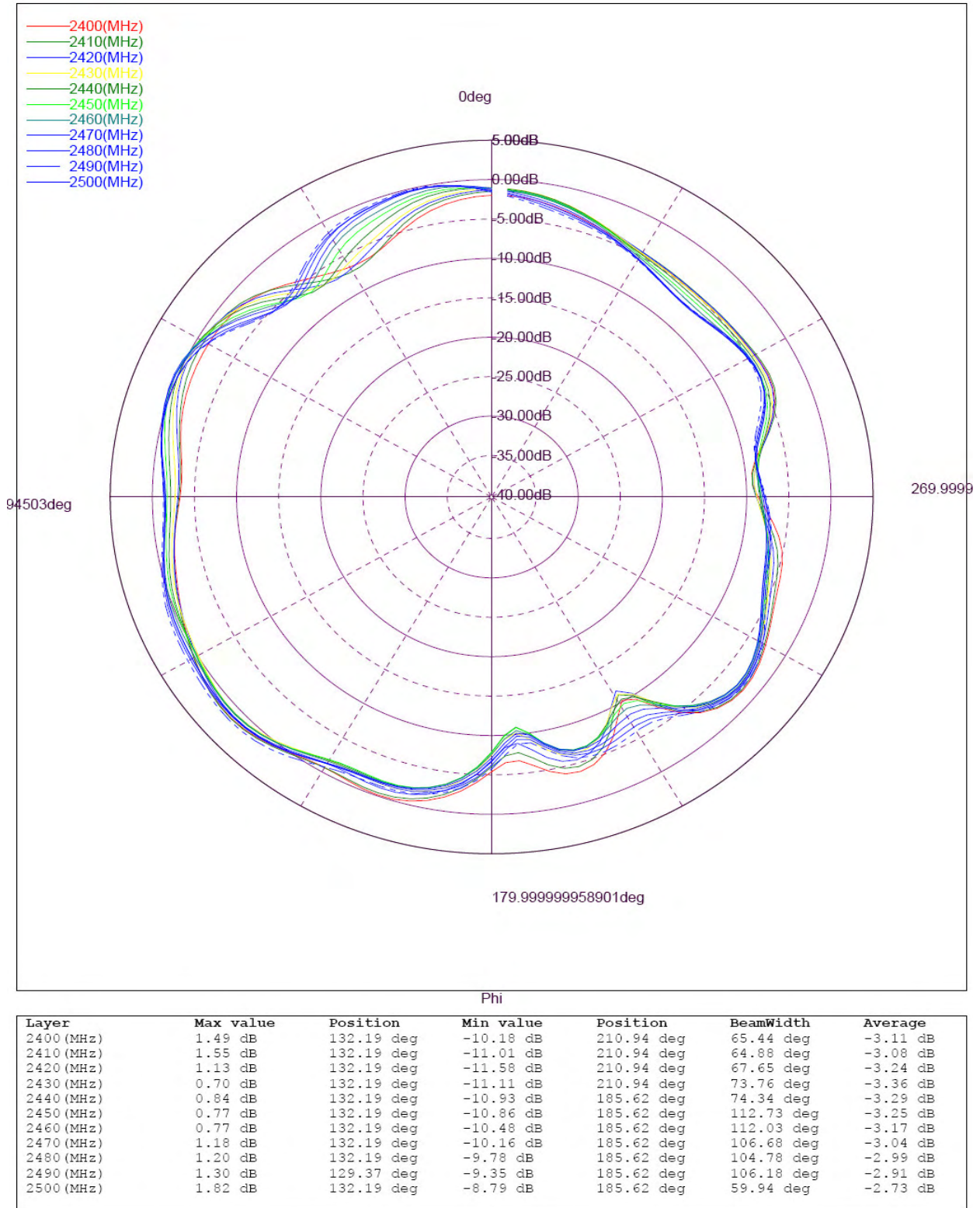


Figure 8 AUX Antenna Theta=90

## 6.0 ANTENNA EFFICIENCY

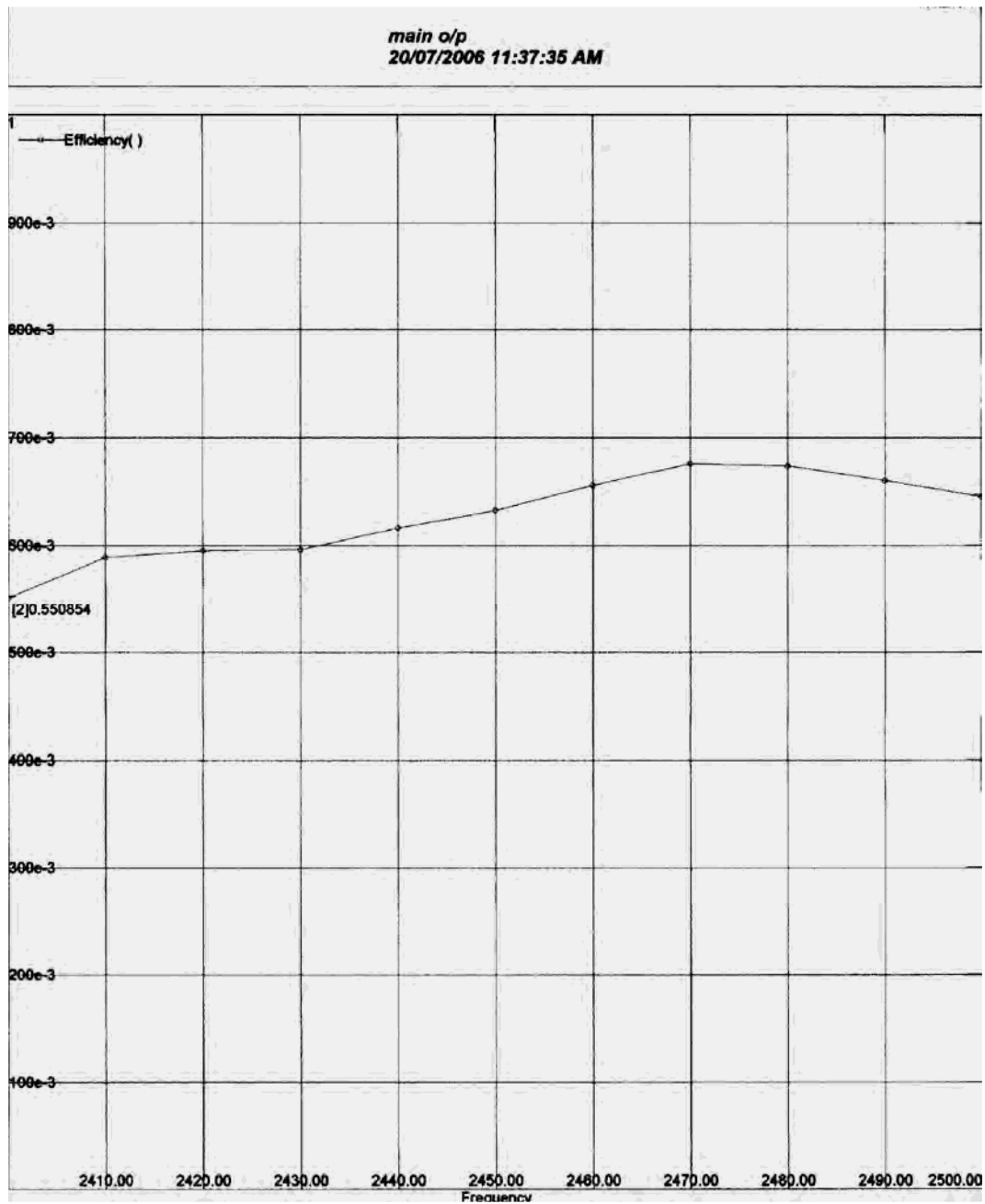


Figure 9 Efficiency of Main Antenna

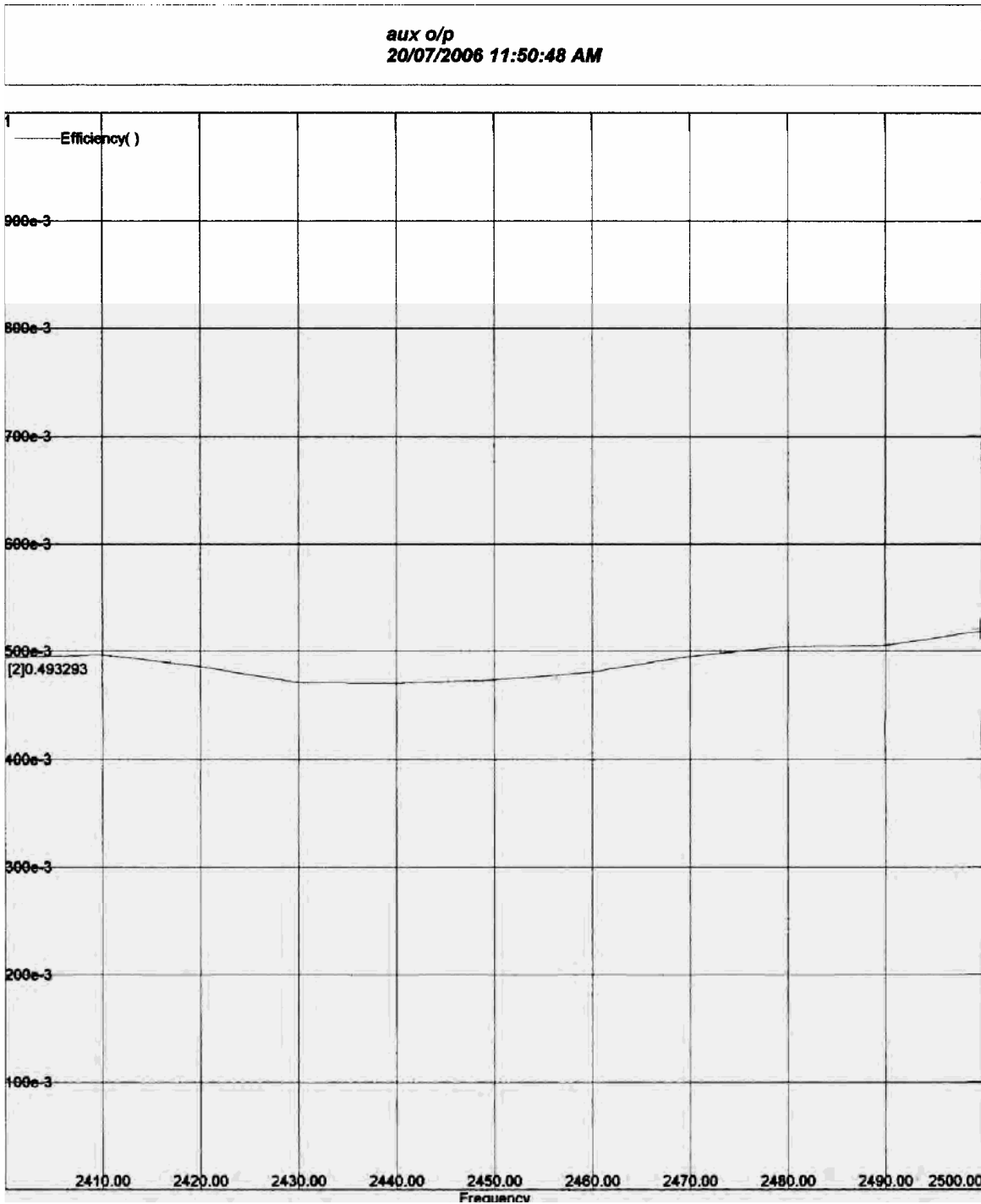


Figure 10 Efficiency of AUX Antenna

## 7.0 CONCLUSION

This document provides a detailed measurement report for the 2.4GHz Antenna developed for Intermec PDA Model CV30. All measurements are performed in a calibrated Satimo 3D Chamber in Perlos. All measurements are based on the latest Production Hard-tool Samples and CV30 Model B Production Unit.