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**NEC Unified Solutions**

**Business Mobility IP DECT**

**AP300 series / Site Survey Kit**



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## SUMMARY

This document provides information about the new AP300 based NEC Unified Solutions' DECT Site Survey Kit.

The DECT Site Survey Kit can be used for all DECT solutions in the NEC Unified Solutions' portfolio.

Before installing a DECT system at a given location NEC strongly recommends the execution of a DECT Site Survey. In some cases a so-called paper survey will be appropriate, but more commonly an on-site DECT Site Survey will have to take place. The DECT Site Survey Kit is to be used to determine the number and the position of the RFPs<sup>1</sup> at the site.

This DECT Site Survey Kit replaces the AP200 based Site Survey Kit, which is no longer available for new orders.

Highlights of this new DECT Site Survey Kit are

- All equipment stored in a strong, protective suitcase
- Fitted with two base stations, one AP300G with internal omni-directional antenna and one AP300E to connect directional external antenna
- Possibility to make handset to handsets calls (to check the connection)
- Based on NEC's own DECT equipment, so the DECT Site Survey Kit is perfectly matched with NEC's DECT solutions
- Supplied with 3 calibrated G955 DECT Handsets
- Spare battery for "base" supplied

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<sup>1</sup> The term RFP (Radio Fixed Part) refers to both the traditional DECT and to the IP DECT radio.

# 1. MAIN CHARACTERISTICS

## 1.1 DECT Site Survey Kit Parts

The DECT Site Survey Kit is neatly packed in a suitcase; this suitcase also protects the DECT Site Survey Kit during transportation. The following equipment is packed in the suitcase:

- Two Site Survey Base Station (AP300G and AP300E)
- One directional antenna 8 dBi gain with two cables
- One Ethernet cable RJ45 – RJ45 (1 meter)
- One plastic board for mounting the Battery cabinet and one base station
- Two Battery cabinets including batteries and power convertor (converting the battery voltage to 48 Volt) for power provision to the base station
- One power supply to charge the “base” batteries
- Material to connect base station and antennas to the tripod
- Three calibrated G955 DECT Handsets with desktop chargers and mains adapters
- Three protective pouches for the G955 DECT Handsets
- Two Bluetooth Modules (to be installed in two of the G955 DECT Handsets)
- Two Bluetooth Headsets
- Documentation

A tripod is also part of the DECT Site Survey Kit, but this is not fitted in the suitcase.

## 1.2 Main Features/Key Benefits

- Possibility to connect directional external antenna
- Pre-configured, so immediately ready for use (out of the box)
- Perfectly suitable for NEC's DECT equipments: accurate results
- Easy to use
- 2 x 4-hour operation without mains power supply
- 3 pre-subscribed G955 DECT Handsets supplied with the Kit
- Support of handset to handset call
- All equipment (except tripod) stored in one suitcase
- Robust

## 1.3 Rationale for DECT Site Survey Execution

When supplying a DECT system to a customer it is important to have on the one hand enough base stations installed to guarantee the required DECT coverage, but on the other hand it is also important not to have too many base stations (as that would mean an unnecessary increase in costs of the installation). To safeguard the above in most cases a good on-site DECT Site Survey is absolutely essential. To be able to perform an accurate DECT Site Survey for NEC's DECT solutions the use of the NEC DECT Site Survey Kit is strongly advised. As this DECT Site Survey Kit is based on NEC's own DECT solutions (it re-uses the normal commercially available product parts) the results of the survey done with this Kit resemble as close as possible the actual NEC DECT installation.

Using the NEC DECT Site Survey Kit is your best guarantee to a solution that gives DECT coverage in line with the requirements of the customer, without installing too many base stations. Thus the customer gets a DECT solution with good speech quality at all the locations he has indicated for the right price.

## 2. DETAILED DESCRIPTION

### 2.1 Introduction

The DECT Site Survey Kit offers the perfect means to perform on-site DECT Site Surveys. Four criteria are offered to determine the DECT cell boundary:

1. Signal strength (RSSI value)
2. Frame errors
3. Quality of received (constant) tone
4. Voice quality (handset to handset call)

The DECT Site Survey Kit is a completely self-supporting system – no additional equipment is needed to perform the survey. The base station and the handsets are a stand-alone DECT system and the supplied batteries mean the set can operate for one 8-hour working day (at least 4 hours per battery set) without the availability of a mains connection.

### 2.2 AP300G and AP300E

The Business Mobility IP DECT AP300G and AP300E DECT Access Points form the heart of the DECT Site Survey Kit. For this purpose the AP300G and the AP300E are used in a stand-alone environment (no need for LAN or power wiring) and support for the purpose of the DECT Site Survey the following functions:

- Subscription data for the DECT Site Survey handsets
- Set-up of DECT handset to handset call
- Giving of constant in-band tone to subscribed DECT handsets
- With AP300 in use: means to connect directional external antennas

The DECT Site Survey Kit contains the following additional equipment for the AP300G/AP300E:

- For AP300E: One Huber & Suhner directional antenna 8 dBi gain
- Material to connect AP300G/AP300E (and antenna) to the tripod
- Two sets of “base” batteries
- Charger for “base” batteries

### 2.3 Calibrated G955 DECT Handset

The calibrated G955 DECT Handsets delivered in the DECT Site Survey Kit are special G955 DECT Handsets. The G955 DECT Handset’s main characteristics with respect to the DECT Site Survey Kit are:

- Calibrated to guarantee the DECT Site Survey results
- Pre-subscribed at the DECT Site Survey Kit’s DECT system
- Display of the RSSI value (i.e., the signal strength of the base station)
- Display of the number of encountered frame errors
- Means to connect a headset
- Large display (for ease of reading out the RSSI value and the frame errors)
- Long operation (12 hrs talk, 120 hrs stand-by) with the Li-Ion battery (supplied with each handset), allowing completion of the DECT Site Survey without the need to recharge the battery

The DECT Site Survey Kit is fitted with the following additional material for the calibrated G955 DECT Handsets:

- Desktop charger and mains adapter
- Protective pouches
- 2 Bluetooth Modules (after first use installed in tow of the G955 DECT Handsets)
- 2 Bluetooth Headsets
- User Guide

## 2.4 Packaging

Except for the tripod, the entire DECT Site Survey Kit equipment fits in one hardcover type suitcase with protective, preformed to fit all equipment, foam interior. The suitcase is very robust and the suitcase and its contents are tested to sustain a 1-meter drop proof.

All DECT Site Survey Kits contain DECT Site Survey documentation in English.

## 2.5 Variants

The DECT Site Survey Kit will be available in the following variants:

- One supporting the international frequency band (1880 – 1900 MHz);
- One supporting the North-American frequency band (1920 – 1930 MHz).

In other regions with a frequency band in the 1.9 GHz band, the DECT Site Survey Kit with international frequency band can be used to perform DECT Site Surveys.

## 2.6 Technical Data

For detailed technical data please refer to the various (main) DECT products from which the DECT Site Survey Kit has been composed:

- [AP300G/AP300E DECT Access Point](#)
- [Huber & Suhner directional antenna](#)
- For the calibrated G955 DECT Handset refer to the standard [DECT Handset G944](#)

## 2.7 Compatibility

The DECT Site Survey Kit is composed of various standard Business Mobility IP DECT components. As such the Kit is highly compatible with NEC's DECT portfolio – which makes it a perfect solution to execute DECT Site Surveys for the NEC DECT solutions.

The software for the DECT Site Survey Kit is the same as the Business Mobility IP DECT software (only some dedicated settings).

To guarantee the results of the DECT Site Survey always the calibrated G955 DECT Handsets should be used.

Even though the DECT Site Survey Kit is build up from standard Business Mobility IP DECTY components it is not possible to replace existing DECT Site Survey Kit components with “normal” of the shelf Business Mobility IP DECT components. To guarantee the results of the DECT Site Survey always parts belonging to one and the same DECT Site Survey Kit should be used.

## 2.8 Expert Services

The DECT Site Survey Kit is an integral part of the DECT Site Survey service. The DECT Site Survey service provides an assessment of the premises in which wireless DECT infrastructure will be established, prior to its implementation. The survey is performed to:

- Guarantee the radio coverage of the geographical area concerned
- Determine the number of RFPs required by the network
- Determine the number of RFPs with external directional antennas
- Define the location of the RFPs
- Define the location and direction of the external directional antennas

## 2.9 Approval Aspects

The DECT Site Survey Kit product parts are fully approved to all relevant specifications with respect to DECT, transmission, Radio specifications, EMC/ESD and safety.

The DECT Site Survey Kits for the North American market are individually CSA Field Certified.

For details on the various approvals turn to the respective DECT products from which the DECT Site Survey Kit is composed.

### 3. TRAINING

Only experienced service personnel should execute DECT Site Surveys. It is therefore required that relevant staff has attended the Business Mobility IP DECT Live training.

The Business Mobility IP DECT Live training is a training module for participants who have completed the Business Mobility IP DECT CBT. The Business Mobility IP DECT Live training gives hands-on experience on important matters like IP Networking, trouble shooting with Performance Analyser, Site Survey etc. And, there are Q&A sessions.

For planning and details please turn to the relevant pages on BusinessNet: [Training](#).



## 4. LOGISTICS

### 4.1 Variants

The DECT Site Survey Kit will be available in two variants, which are both orderable as complete sets:

| Description                     | 12NC           |
|---------------------------------|----------------|
| Site Survey Kit – International | 9600 039 19000 |
| Site Survey Kit – North America | 9600 039 20000 |

### 4.2 Tripod

The tripod that is used with the DECT Site Survey Kit is not contained in the Kit itself, but should be ordered separately:

| Description        | 12NC           |
|--------------------|----------------|
| Site Survey Tripod | 9600 038 70100 |

### 4.3 Hardware

The following hardware is contained in the DECT Site Survey Kit:

| Description                                       | 12NC           |
|---------------------------------------------------|----------------|
| DECT AP300G (unbranded)                           | 9600 039 17000 |
| DECT AP300E (unbranded)                           | 9600 039 13100 |
| 8 dBi Directional Antenna & cables                | 9600 038 65000 |
| (Calibrated) G955 DECT Handset – NEC              | 9600 015 61100 |
| G955 Desktop Charger                              | 9600 015 72000 |
| G355/G955 AC Adapter – INT                        | 9600 015 73100 |
| G355/G955 Vertical Pouch                          | 9600 015 82000 |
| Bluetooth Module G955                             | 9600 015 78000 |
| Bluetooth Headset                                 | 9600 017 76000 |
| Base plate                                        | 7522 213 12140 |
| Suitcase with protective, preformed foam interior | 7522 213 12090 |
| “Base” battery (Battery pack and convertor)       | -              |

### 4.4 Software

The DECT Site Survey is delivered with a specially installed/configured version of the standard Business Mobility IP DECT Release 5.x software. Software installation should only be done by or under the supervision of NEC Unified Solutions.

### 4.5 Manuals

The following manuals are available for the DECT Site Survey Kit:

| Description                                                                             |
|-----------------------------------------------------------------------------------------|
| Deployment / Site Survey Manual for Survey Kit with G955 – For Traditional DECT Systems |
| Deployment / Site Survey Manual for Survey Kit with G955 – For IP DECT Systems          |

For installing the Bluetooth Module and Bluetooth Headset for the calibrated G955 DECT Handsets turn to:

| Description                                             |
|---------------------------------------------------------|
| <a href="#">G355, G955 and I755 Administrator Guide</a> |
| <a href="#">G355, G955 and I755 Basic User Manual</a>   |