MANUAL Pulse Listen X2

Check-out Line

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Technical Support

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Safety precautions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED NEDAP SERVICE PERSONNEL.

Lightning flash with an arrowhead, enclosed in a triangle, alerts you to the presence of uninsulated voltage points inside the product which could cause a serious electrical shock.

An exclamation mark enclosed in a triangle alerts you to important operating and maintenance instructions in the documentation provided with the product.

WARNING! To avoid the risk of fire or electrical shock, never expose these products to water or operate in a high humidity environment.

EN 50419:2005

This European Standard specifies a marking

- of electrical and electronic equipment in accordance with Article 11(2) of Directive 2002/96/EC (WEEE); This is in addition to the marking requirement in Article 10(3) of this Directive which requires producers to mark electrical and electronic equipment put on the market after 13 August 2005 with a 'crossed-out wheeled bin' symbol.
- that applies to electrical and electronic equipment falling under Annex IA of Directive 2002/96/EC, provided the equipment concerned is not part of another type of equipment that does not fall within the scope of this Directive. Annex IB of Directive 2002/96/EC contains an indicative list of the products, which fall under the categories set out in Annex IA of this Directive;
- that serves to clearly identify the producer of the equipment and that the equipment has been put on the market after 13 August 2005.

No warranty

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Printed in the Netherlands

Notice

The documentation is based in a Part numbers and Drawing number structure.
Part number can also be named as Artikel nummer or Article number
Drawing numbers can also be named as: Tekening
Drawing numbers are build up in a the drawing Number with a structure Txxxx-yyy-zz
Txxxx-yyy is the drawing number and extension number zz means:

10	is an overview drawing of the part and can contain wiring and circuit diagrams;
11	is the bill of material;
12	is the circuit diagram of the device.
Xxxx	= 0000 – 9999
yyy	= 000-999

Table of content

1 INTRODUCTION

N.V. Nederlandsche Apparatenfabriek "Nedap" further on called Nedap manufactures reliable and scalable EAS Systems

With this X2 system your able to reduce the shoplifting costs the best in combination with Nedap's tag line.

The X2 system produces an acoustic – and visual signal when it detects an operating tag by means of the antennas and will identify a visitor with the active tag on one of his carried items.

X2 is developed for middle scaled configurations. It starts with 2 antennas for one entrance scalable up to 150 entrances. The system is buildup in four different types of components:

- Antennas with the following types: PG27, PG39, FL30, FL45, W37-CC and EQ45-F;
- Transmitter and Receiver units installed into the antennas;
- Network controlled unit named NCC;
- Power inserter.

With the Check-out line X2 you're able to build big EAS systems connectable to the EASi/Net or Cube system.

Some of the advantages are:

1. On the antenna there is an additional advertising space;
2. The antenna color can be chosen for a fitting look in the shop;
3. There is the opportunity to integrate the customer counting feature to measure the visitor stream;
4. Optional is the communication of the system to the outside world via GSM/GPRS, PSTN, LAN or WiFi;

Further details can be found in the X2 Electronics Manual

2 System overview

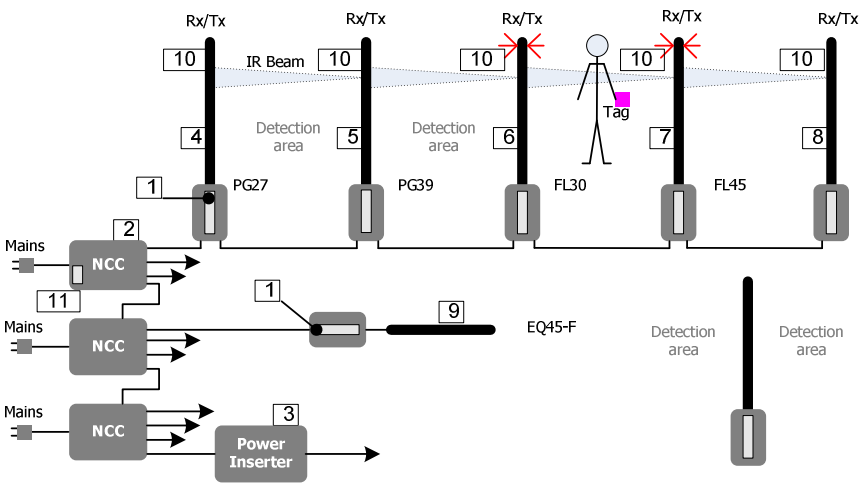

Figure 1 Functional system overview

The system consists of the following components:

1. X2 Rx/Tx Unit
2. NCC unit for communication
3. Power inserter
4. Antenna frame 27 cm Model: PG27
5. Antenna frame 39 cm Model: PG39
6. Antenna frame 30 cm Model: FL30
7. Antenna frame 45 cm Model: FL45
8. Antenna frame 37 cm Model: W37-CC
9. Antenna frame 45 cm Model: EQ45-F Floor antenna
10. Customer Counting unit including Lighting
11. Optional communication units:
    - PSTN: MT5600SMI-92 by Multitech CE approved, Canada IC: 125 11142A and USA FCC complies with 47 CFR Part 68: AU7USA-46014-MD-E or any other CE, FCC and IC approved PSTN.
    - GSM/GPRS: MTSMC–G-F4 by Multitech CE approved , Canada IC: 125A-0027 and USA FCC ID: AU79U07A31817 or any other approved FCC or IC approved GSM
    - LAN: XPORT by Lantronix
    - WiFi: IEEE 802.11b WiPort 485 by Lantronix FCC ID: R68WIPORTG IC-ID:3867A-WIPORTG

The X2 system is complete wired up and ready for use. You only have to follow up the next steps:

- Install the X2 system according the X2 Electronics Manual;
- Distance between an antenna and a wall, door, sliding door etc. must be at least 0.2 m;
- Distance between an antenna and the nearest tagged item must be at least 2 m;
- Reading range totally (split up in two antenna sides) when using:
    - hard tags Ø50 mm and FL30 antennas is: 1.80 m;
    - paper tags 40x40 mm and FL30 antennas is: 1.40 m;
    - hard tags Ø50 mm and FL45 antennas is: 2.30 m;
    - paper tags 40x40 mm and FL45 antennas is: 1.80 m;
    - hard tags Ø50 mm and PG27 antennas is: 2.00 m;
    - paper tags 40x40 mm and PG27 antennas is: 1.50 m
    - hard tags Ø50 mm and PG39 antennas is: 2.60 m;
    - paper tags 40x40 mm and PG39 antennas is: 2.00 m;
    - hard tags Ø50 mm and W37-CC antennas is: 2.60 m;
    - paper tags 40x40 mm and W37-CC antennas is: 2.00 m;
    - hard tags Ø50 mm and EQ45-F antennas is: 1.00 m;

- paper tags 40x40 mm and EQ45-F antennas is: 0.75 m;
- Power up the X2 system
- Check the functionality;
- Call Nedap Customer Support for quick hands-on problem solution in case of unforeseen problems [see Technical Support];

3 Wiring diagram

Schematically diagrams below shows an example of the connections between used modules.
The picture shows the full configuration that can be built up.

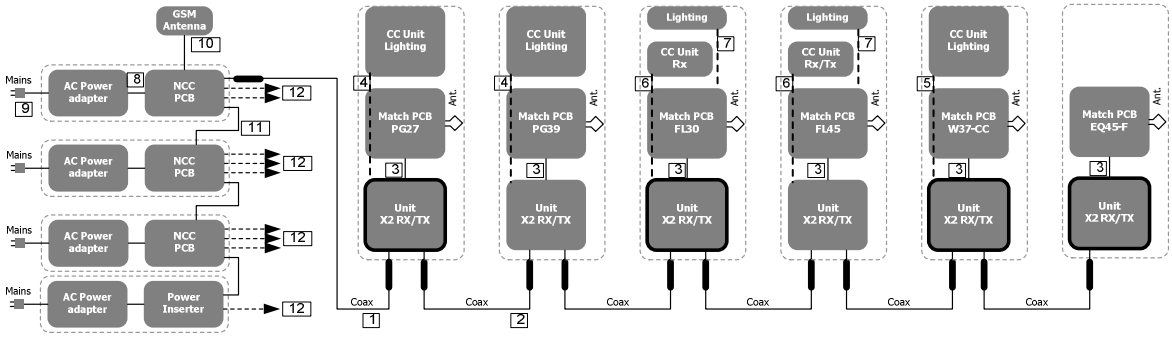

Figure 2 Example full configuration

The connections for a full configuration are:

1. **Datacom cable for NCC to Unit X2**
   Connects Data communication and power from NCC [9203508] to a Unit X2 RX/TX [9938176]
2. **Datacom cable between Unit X2 to second Unit X2**
   Connects the data and power between the X2 RX/TX Units.
3. **Coax cable**
   Connects the antenna Match PCBA to X2 RX/TX unit [9938176] for the EAS antennas PG27, PG39, FL30, FL45, W37-CC and EQ45-F
4. **Cable for Cusomer counting and lighting unit PG27/PG39**
   Connects the X2 RX/TX [9938176] to the Customer Counter and lighting unit [7833342]
5. **Cable for Cusomer counting and lighting unit W37-CC**
   Connects the X2 RX/TX [9938176] to the Customer Counter and lighting unit [7835361]
6. **Cable for Cusomer counting and lighting unit FL30/FL45**
   Connects the X2 RX/TX [9938176] to one of the Customer counter units [9923373, 9928529, 9936114, 9935207]
7. **Cable for lighting module FL30/FL45**
   Connects the X2 RX/TX [9938176] to the lighting module
8. **DC cable from Power adapter to NCC electronics**
   Connects the Power-adapter [9651543] to the NCC main board [7824785] and carries 33V DC power
9. **Mains cable**
   Connects the Mains power to the Power-adapter [9651543]
10. **Coax cable for GSM antenna**
    Connects the GSM module to the GSM external antenna to contact the GSM network.
11. **Datacom cables to slave NCC's**
    Connects a NCC with the behavior "Master" to NCC devices with the behavior "Slave"
12. **Datacom cables for system expansion**
    Connects more antenna strings up to 16 devices with the same function as Wire 1 and 2

4. FCC/IC Declarations

Compliance statements (part15.19)
This device complies with part 15 of the FCC Rules and to RSS210 of Industry Canada. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil se conforme aux normes RSS210 exemptés de license du Industry Canada. L'opération est soumis aux deux conditions suivantes:
(1) cet appareil ne doit causer aucune interférence, et
(2) cet appareil doit accepter n'importe quelle interférence, y inclus interférence qui peut causer une opération non pas voulu de cet appareil.

Warning (part15.21)
Changes or modifications not expressly approved by party responsible for compliance could void the user's authority to operate the equipment.
This in particular is applicable for the antenna which can be delivered with the X2 System.

Information to the User (Part 15.106(b))
Note: This equipment has been tested and found to comply with the limits for a class B digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequent energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does not cause harmful interference to radio or television reception, which can be determine by turning the equipment off and on , the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

5 Specifications X2.

Enviromental

Description PG27	PG27	PG39	FL30	FL45	W37-CC	EQ45-F
Antenna Hight (in mm)	1533	1670	1665	1665	1500	1800
Antenna With (in mm)	273	390	322	462	370	700
Antenna Base (in mm)	104	104	100	100	55	
Frame thickness (in mm)	20	20	70	70	40	67
Weight (in kg)	13	20	12	15	8	10
Material Construction	PMMA*	PMMA	Al**	Al**	Al** Polycarbonate	Copper
Material Covers	Stainles Steel	Stainless Steel	ABS*** HI-121, Calibre 201-15		Stainless Steel	Eternit
Protection Class	IP20					

*PMMA= Polymethylmethacrylaat **AL=Aluminum ***ABS= Acrylonitril-butadieen-styreen

Description	Min.	Typical	Max.	Condition
Operating frequency	7.4 MHz		8.8 MHz	
Operational temperature	0°C		40 °C	
Storage temperature	-10°C		+70°C	
Relative Humidity	20%		90%	non-condensing
Operating Distance	0.9m		2.4m	Tag and Antenna dependant see Section 2

Input Requirements and electrical specifications

Description	Min.	Typical	Max.	Condition
Input Voltage	100VAC		240VAC	Full Range; 50/60Hz
Input Current	-	-	2A	90VAC 50Hz
Line Frequency	47 Hz	50-60Hz	63Hz	-
Inrush Current @25°C			60A	230VAC Cold Start
Operation Voltage	29.1VDC	30VDC	30.9VDC	
Power	0 W		30W	230VAC 50Hz

Regulations

Safety approvals of the Power Adapter:
· cULus according to UL/CSA 60950-1
· Japan PSE
· CE Europe according to EN60950-1
Telecom system approval
· Canada IC ID according to RSS210 IC ID: 1444A-
· US according to FCC Part 15 FCC ID: CGD
· CE according to EN 300 330
In compliance with Human exposure assessment according to:
· EN62369-1 and EN50364
· ICNIRP Guidelines
· IEEE C95.1
· RSS102
· ARIB STD-38
Electromagnetic compatibility
· EN 301 489
· IEC 61000-6-2
· IEC 61000-6-3
· CISPR 22 / EN55022