



R&M Home Wiring

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Wetzikon, September 2002



Convincing cabling solutions

Why is it time for a new kind of Home Wiring?

- Fast Internet (broadband) Access for everybody
- Multimedia applications (Movies, Videos, etc.)
- Home Network, File and Printer sharing, games
- Interconnection between different kind of active components
- Most of the households have two or more PC's...
- Freedom of choice and flexibility for further application

Buy your computer in a supermarket...

Tiefpreis-Shop

Gültig ab 2.9.

1898,-

15" TFT

2 JAHRE GARANTIE

SOLANGE VORRAT! **ONT CEL 1.8 TFT Bundle***, Intel Celeron 1.8 GHz-Prozessor, 256 MB DDR-RAM, 40 GB Festplatte 16x DVD-ROM und 24x CD-RW Laufwerk, 64MB nVidia GeForce, 2 MX-400 Grafikkarte & 15" ONT LCD TFT Max. Auflösung 1024 x 768, Kontrast 300:1, TCO 99

50%
8,45 statt 16,90

Senf
Moutarde
Senape

5x4
Wienerli
Saucisse de Vienne

Tiefpreis-Shop

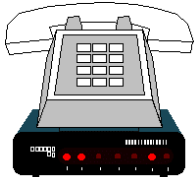


Applications – Driving Growth

<i>Application</i>	<i>Min.</i>	<i>Ideal</i>
Videoconferencing	70 kbps	200 kbps
Movies on Demand	1 Mbps	2 – 7 Mbps
Audio on Demand	110 kbps	700 kbps
Digital TV	1 Mbps	7 Mbps






Last mile connection Options

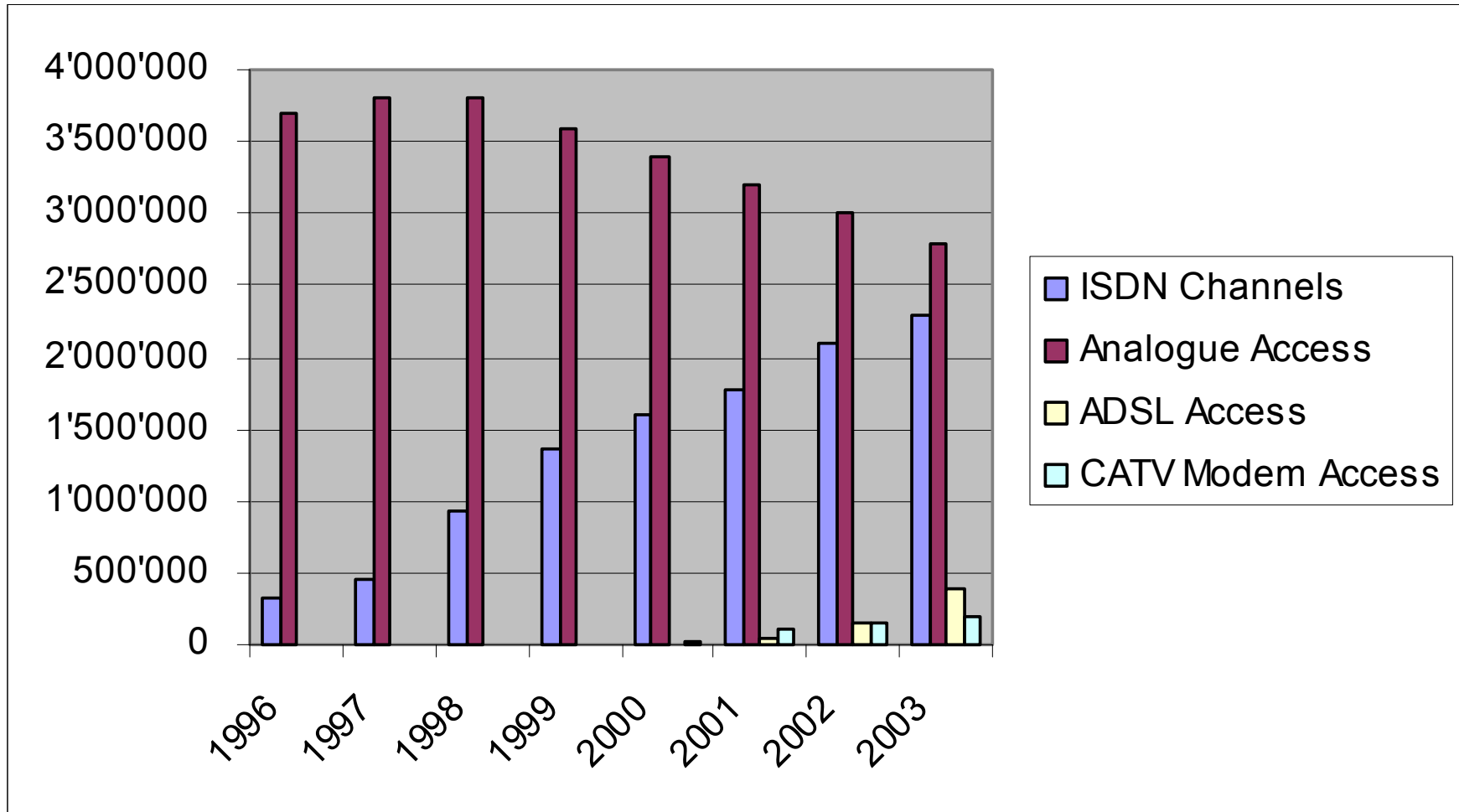


	<i>Capacity</i>	<i>Price in €</i>	<i>Availability</i>
Modem 	56 kbps ISDN 128 kbps	€15-25	nearly universal
CATV 	256 kbps - 15 Mbps <i>Depending on the service selected</i>	€30-60 +install	moderate / high
DSL 	256 kbps - 8 Mbps <i>Depending on the service selected</i>	€45-70 +install	Moderate /high

Last mile connection Options (2)

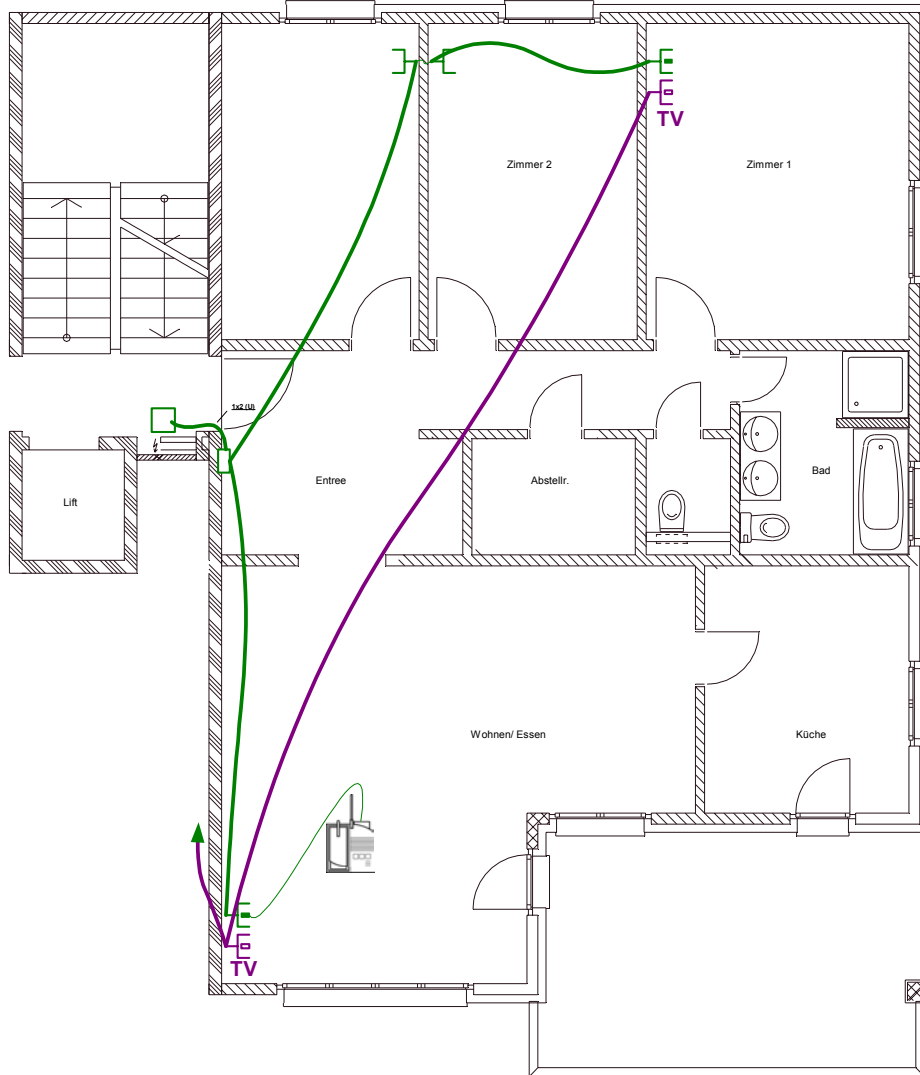
	<i>Capacity</i>	<i>Price in €</i>	<i>Availability</i>
Satellite 	500-768 Kbps	€50 + install	very high
WLL 	256- 768 Kbps	€40	low
PLC 	500-768 Kbps	€60	Very low, some parts in CH

Growth Projections in Switzerland



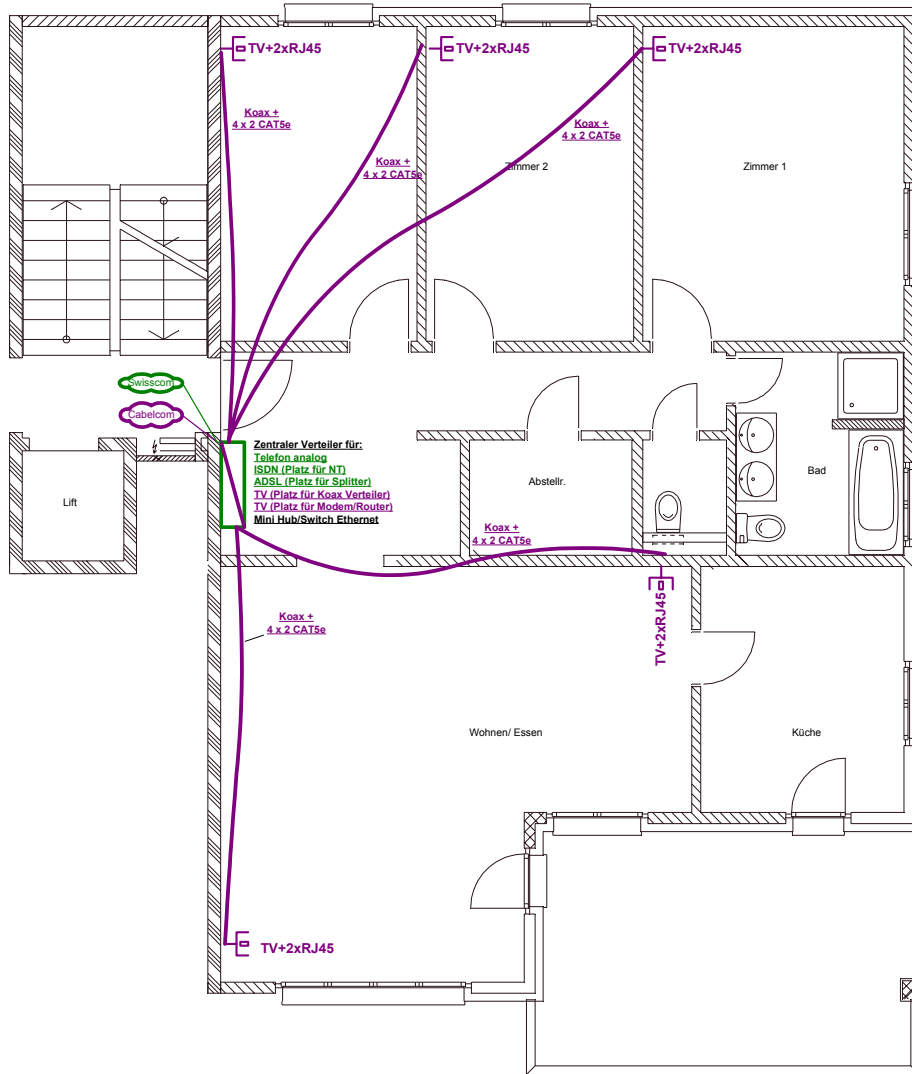
➡ **Clear trend: From narrowband to broadband!**

Traditional Home Wiring



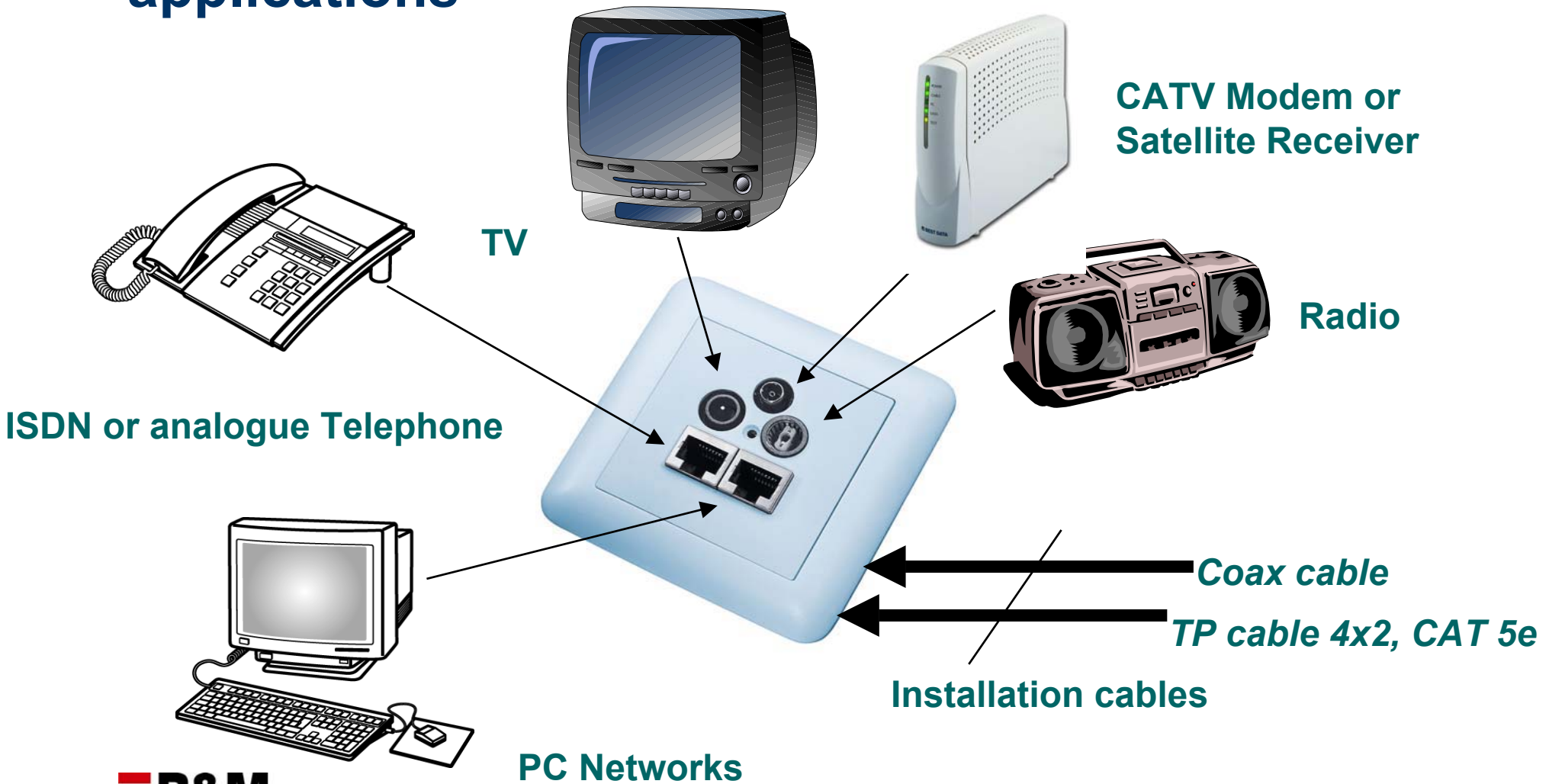
- Not a structured cabling (daisy chain, star)
- Not every room is wired
- Telephone and CATV is separated
- Installation Cable CAT 3 or less

New Home Wiring Concept

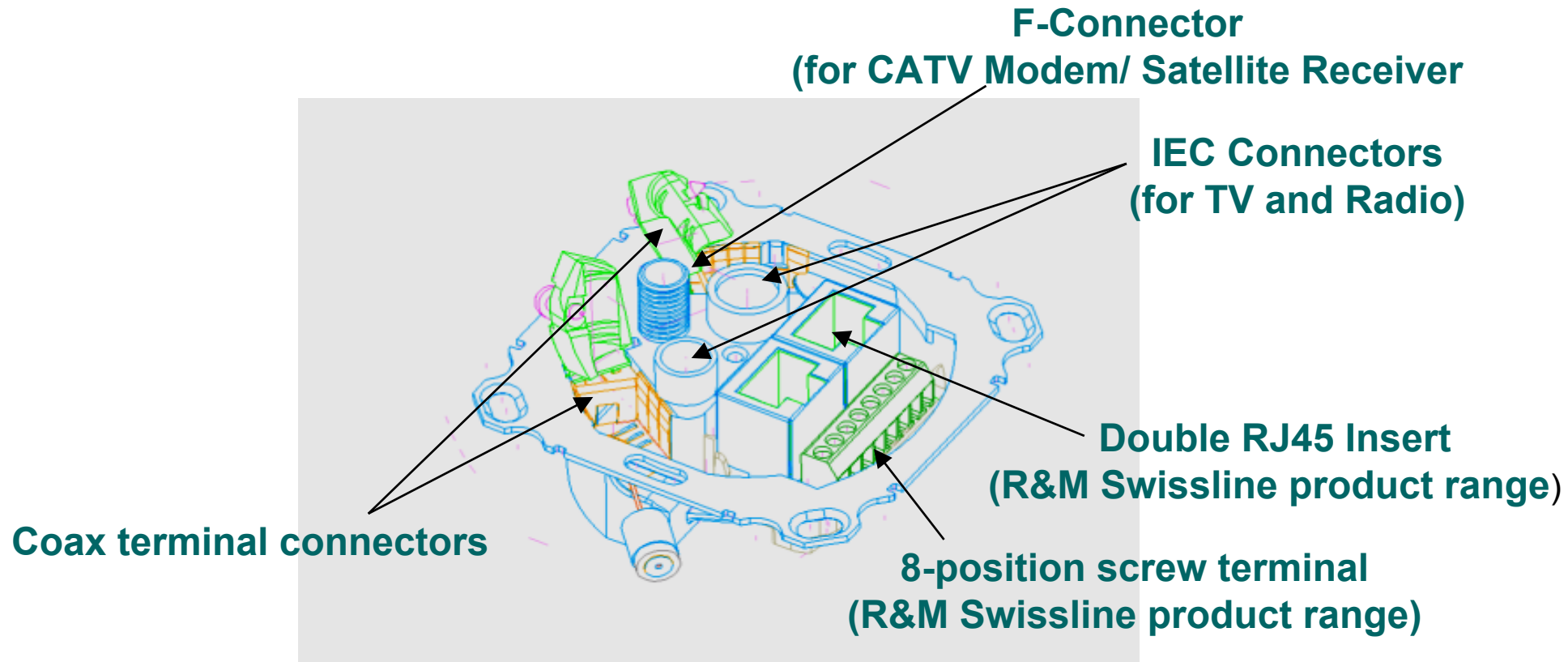


- Structured, star wiring pattern
- Every room is wired
- Telephone and CATV is merged
- TP Installation Cable CAT 5e or 6 (future proved)
- Flexibility, all changes in distribution can be quickly made at the central distributor
- Only one Multimedia-Outlet for all applications
- High performance Coax Cable/ Outlet, enable HDTV (High Definition TV)
- Ready for new services

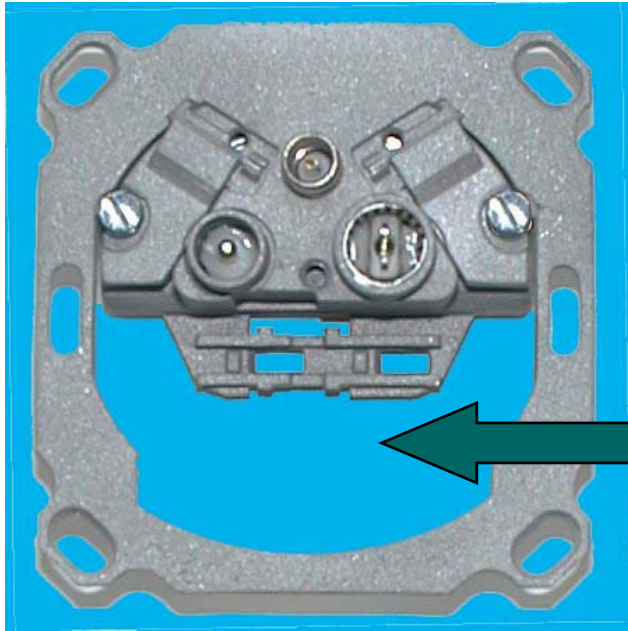
One Multimedia Outlet (TV + RJ45) for all applications



Multimedia Outlet, Cable termination



Modularity



Multimedia Outlet (coax part)



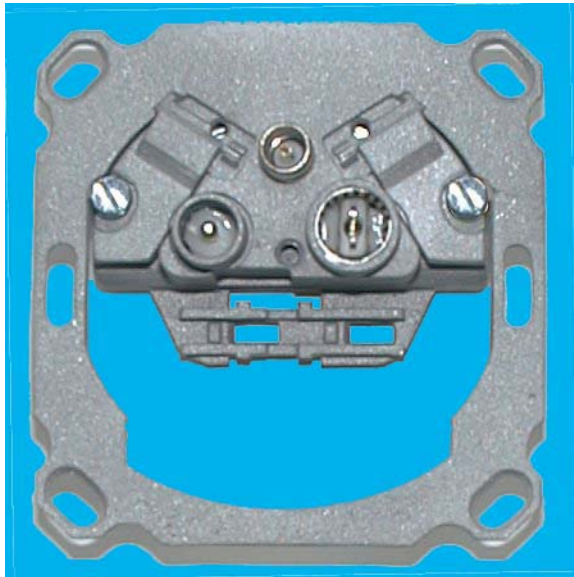
Inserts

(R&M swissline product range)

- Shielded and unshielded inserts
- CAT. 3 and CAT. 5 inserts
- T+T 83 insert
- TAE insert possible
- Ready for future connection hardware (Firewire, USB etc.)

Multimedia Outlet with Data Connector

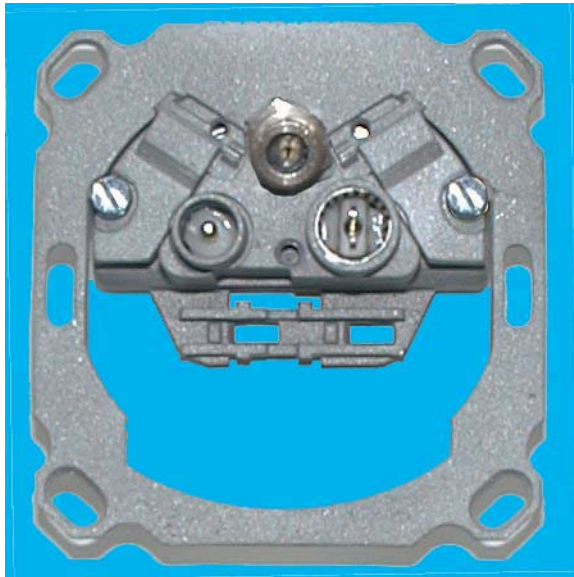
Radio/TV and Data Outlet Socket



- TV Connectors to IEC Standard
- Data Connector to F-Standard
- Frequency range 5 – 862 MHz
- Side loss 4, 11, 14 and 19 dB (loop through sockets)
- Individual sockets
- Screening factor according to EN 50083-2, Class A

Multimedia Outlet with Satellite Receiver Connector

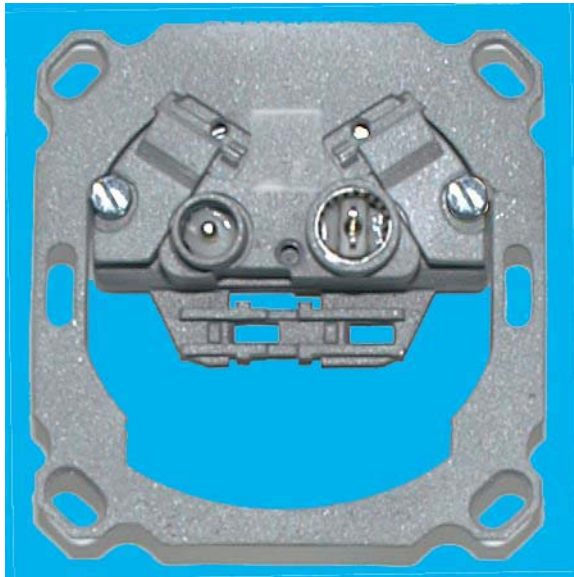
Radio/TV and Satellite Receiver



- TV Connectors to IEC Standard
- Satellite Receiver Connector to F-Standard
- Frequency range 47 – 2050 MHz
- Side loss 16 dB (loop through sockets)
- Individual sockets, side loss 2.0 dB
- Screening factor according to EN 50083-2, Class A

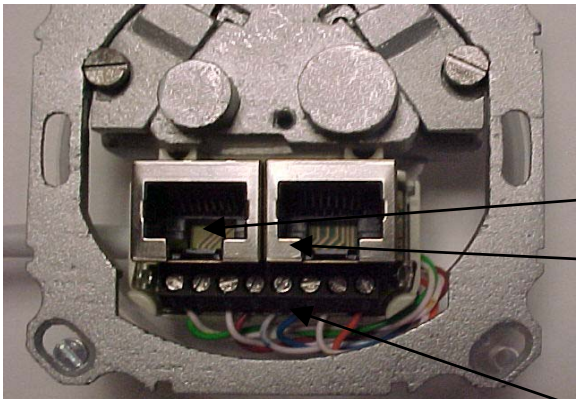
Multimedia Outlet Radio/ TV

Radio/TV



- TV Connectors to IEC Standard
- Frequency range 5 – 862 MHz
- Side loss 4, 11, 14 and 19 dB (loop through sockets)
- Individual sockets
- Screening factor according to EN 50083-2, Class A

Multimedia Outlet, Wiring Map RJ45 module



- TP cable sharing to reduce amount of cable and cost.
- RJ45 (left) Pin 1-2 / 3-6 (Fast Ethernet)
- RJ45 (right) Pin 4-5 / 3-6 (ISDN, analogue Telephone)
- CAT. 5 performance
- 8-position screw terminal

Distributor Home Wiring

ISDN/ POTS Distributor
10 x RJ45

RJ45 Patch Panel
20 x RJ45

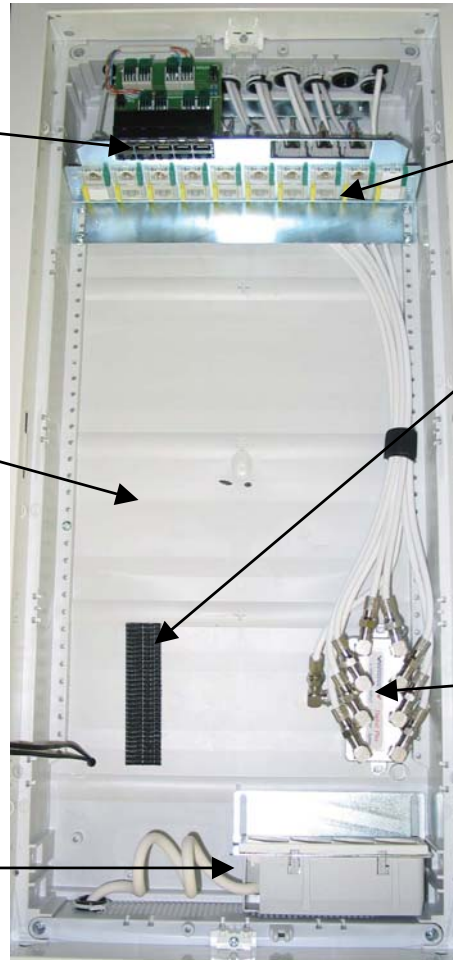
Spare room for active components:

- ISDN NT
- CATV Modem
- ADSL Splitter
- Router
- Switch/ HUB
- Powerline Modem
- etc.

Velcro fastening
For screw-less and easy
mounting of active components

Coax Splitter
1xIN, 8xOUT

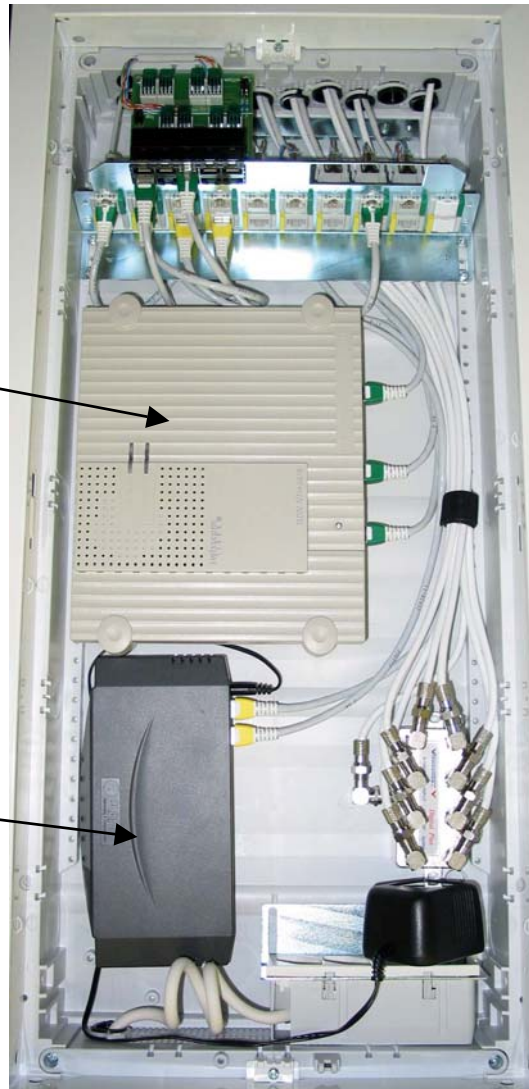
Power Socket Bar



Example of Home Wiring Distributor

ISDN Network Terminator (NT)

Switch (Fast Ethernet)



Overview home distributors

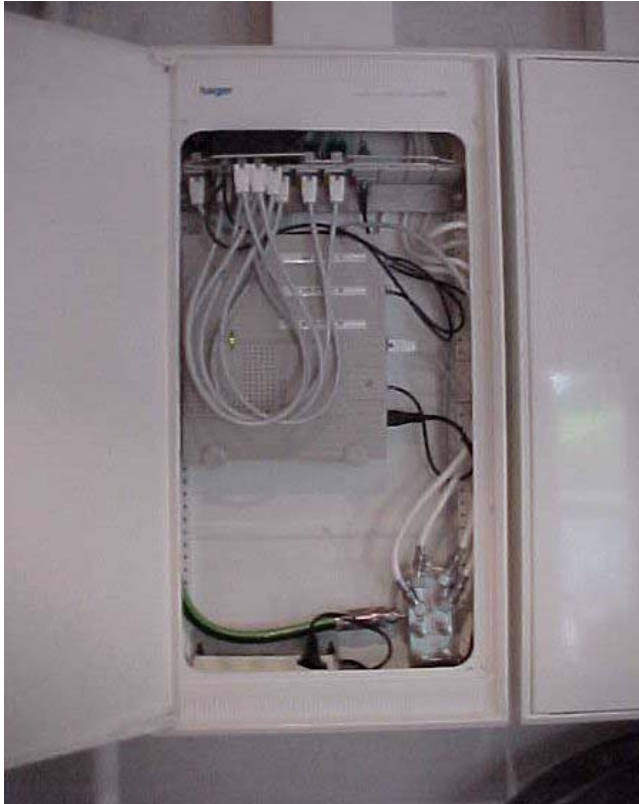
Anzahl Zimmer/Steckdosen <i>Quantity of rooms/outlets</i>				Platz für Aktivgeräte <i>Space for Active Components</i>				
				1 -4	3 - 6	4 -8	ISDN NT	ADSL Splitter
Verteilergrösse <i>Distributor size</i>								
Gr. 2	330x567 (BxH)		x		(x)	x	x	(x)
Gr. 3	330x692 (BxH)			x	x	x	x	x

Pilot project Gstalden Hinwil



- Project with 50 apartments and 10 houses
- Finished February 2002
- Big success (End-user, Installer, Planer, Architect)

Pilot project Gstalden Hinwil

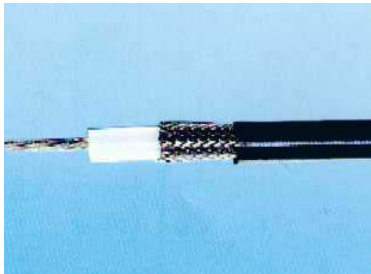


Distributor

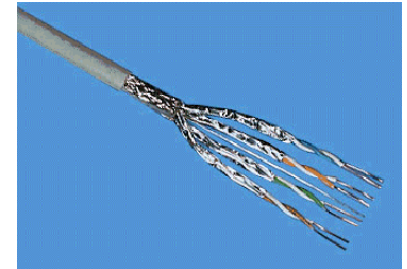


CATV and Data/Telephone Outlet,
will be replaced by the Multimedia Outlet
in the future (March 2003)

Comparison CATV over Twisted Pair and Coax



	CATV over Coax	CATV over TP
Attenuation		
62 MHz	4dB	15dB
860 MHz	15dB	60dB
2150 MHz (SAT) (per 100m)	30dB	ca. 120dB
Maximum length (Amplifier output 100uVdB)	250m Min 63uVdB	60m Min 63uVdB
Cost	1x	4x



Any Questions?

