In Building Solution Proposal

(H-DPX type)

PACIFIC AVE

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In-building Distribution System via CATV Cable

Overview

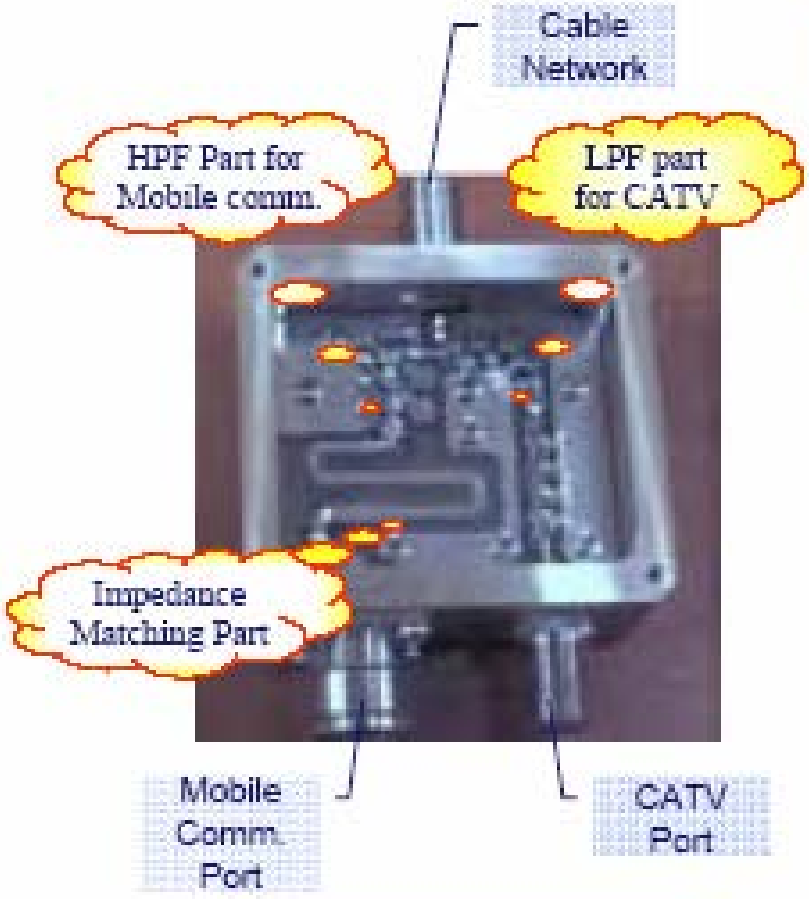
- New In-building Distribution System in place of RF or Optic Distribution System
- Over existing CATV Cable, the coverage solution which minimizes the installation cost

Feature

- Das system using CATV cable in pace of RF Cable makes lower the facilities cost.
  - *$4 per 1m ½" RF Cable Vs $0.95 per 1m CATV 5C Cable -> 76% cost saving*
  - *In case of using existing Cable network, almost zero facilities cost.*
- Hybrid-Diplexer (H-DPX) combines or separates Mobile communication signal and CATV signal, which makes deployment or expansion easy and simple.
  - *Possible combination of CATV network and mobile communication in-building DAS.*
- This system using CCTV network in place of CATV is able to eliminate a shadow area in elevator and underground parking lot.
- Defect: Distributors installed in CATV network, No NMS for Line-AMP.

CATV COMBINED INTO IN-BUILDING NETWORK

Hybrid-Diplexer Overview



H-DPX inside view

- Hybrid-Diplexer separates or combine a mobile signal within 890~2,400 MHz and CATV signal under 650 MHz, and prevent the mix/modulation of CATV network by mobile comm. Signal.
- Matching part in order to combine two different signals with 75 Ω for CATV and 50 Ω for CATCC.

Item		Specifications
Frequency Rang	CATV Port	DC ~ 650 MHz
	GSM Port	890 ~ 2,400 MHz
Insertion Loss	CATV Port	Max. 2.5 dB
	GSM Port	Max. 2.5 dB
Return Loss		Min. 15 dB
Pass Band Ripple		Max. 2.0 dBp-p
Band Rejection (CATV Port)	890 ~ 1,000 MHz	Min. 25 dBc
	1,700 ~ 2,400 MHz	Min. 45 dBc
Band Rejection (GSM Port)	DC ~ 450 MHz	Min. 50 dBc
	450 ~ 650 MHz	Min. 25 dBc
Impedance	COM, CATV Port	75 Ω
	GSM Port	50 Ω
Connector	COM, CATV Port	F-type (F)
	GSM Port	N-type (F)
Operating Temperature		-20 ~ +50 ℃
Dimension		50 * 89 * 32 mm

2. H-DPX Construction

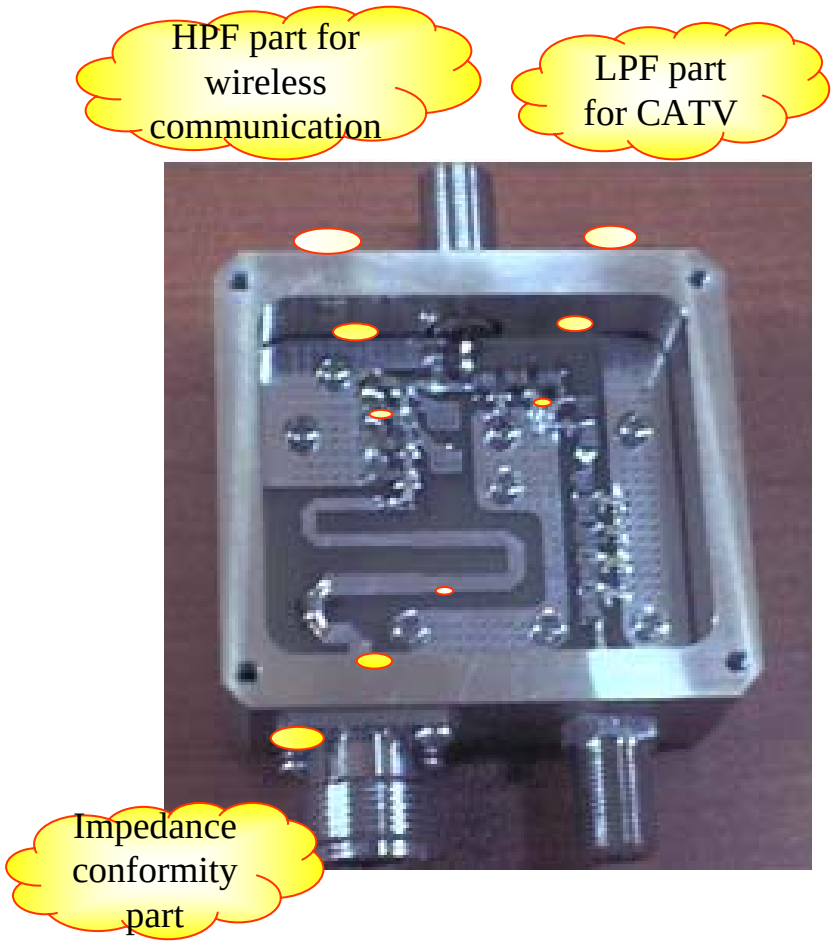
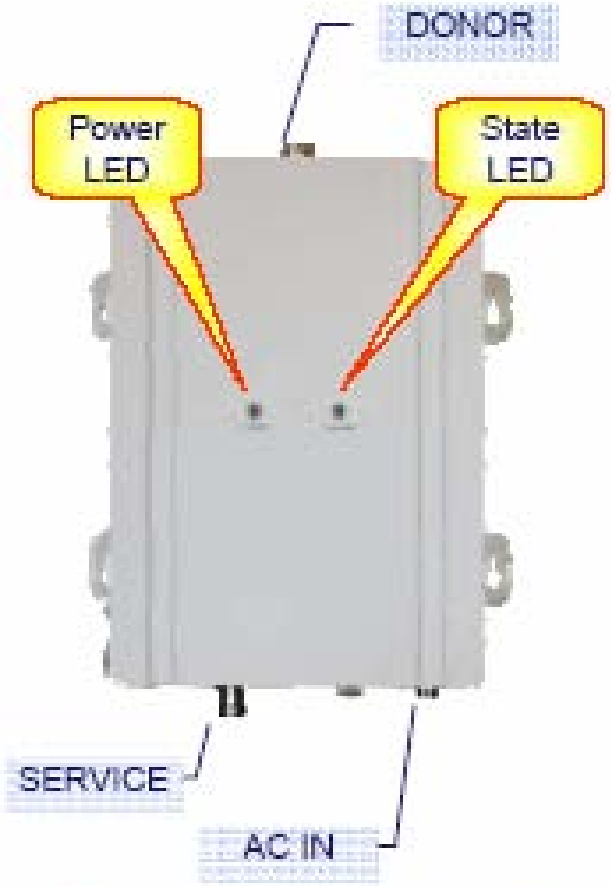


Figure-1 Within Structure of H-DPX

Figure-2 Outside structure of H-DPX

CATV COMBINED INTO IN-BUILDING NETWORK

Line-AMP Overview



GSM 900 & GSM 1800 Line-AMP

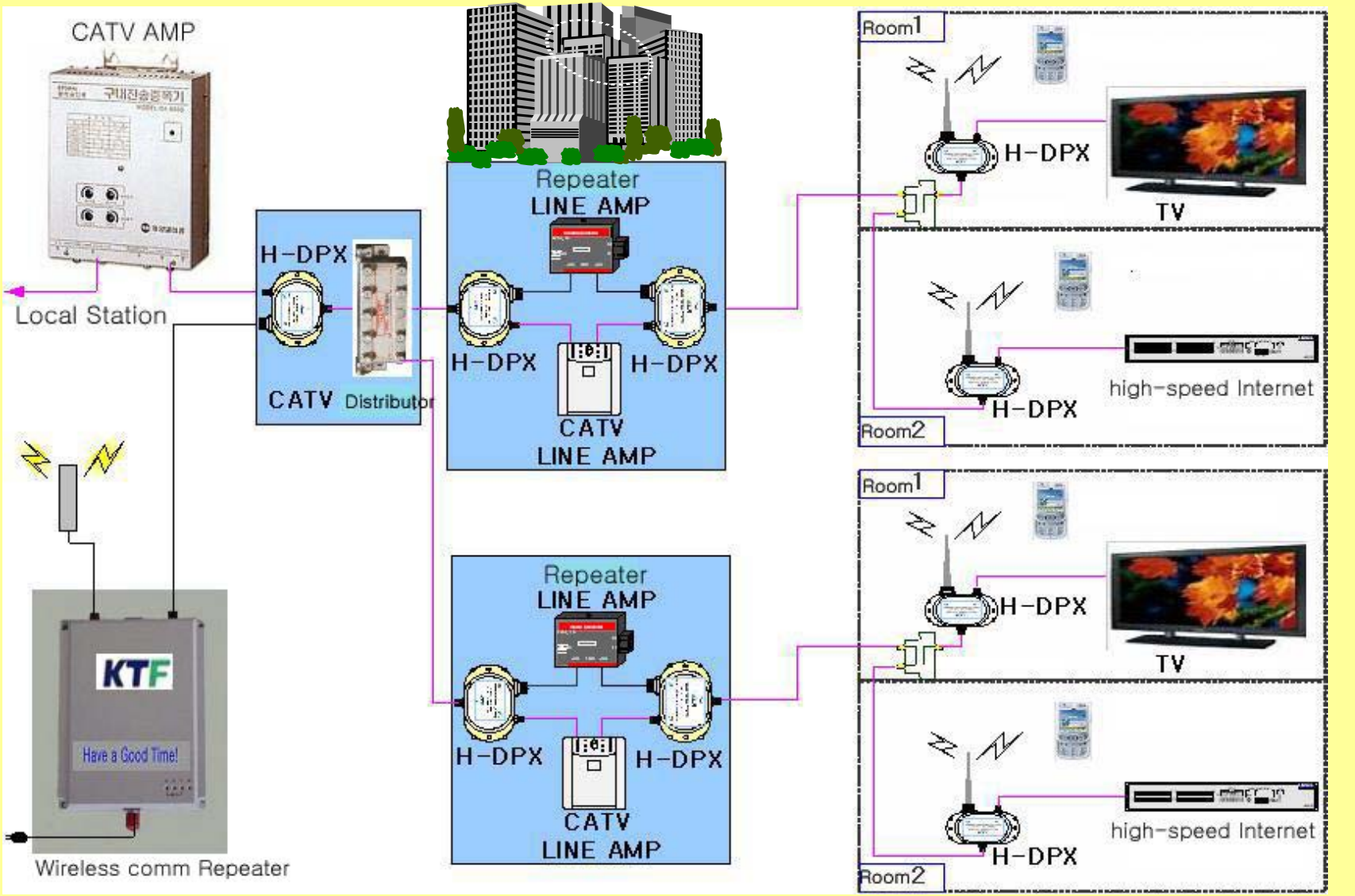
Overview

- Installed in existing CATV network and amplifies GSM signal.
- Compensation for gain loss caused by CATV distribution and transmission and AGC.
- Strengthening insensibility to CATV signal and suppressing spurious

Item		Specifications	
		GSM900 System	GSM1800 System
Frequency Rang	Down Link	935 ~ 960 MHz	1815 ~ 1880 MHz
	Up Link	890 ~ 915 MHz	1720 ~ 1785 MHz
Output Power	Down Link	Max. 33 dBm	Max. 33 dBm
	Up Link	Max. 0 dBm	Max. 0 dBm
Gain		30 ~ 60 dB	30 ~ 60 dB
Pass Band Ripple		≤ 3.0 dBp-p	≤ 3.0 dBp-p
VSWR		≤ 1.5 : 1	≤ 1.5 : 1
IMD	Down Link	≤ -45 dBc	≤ -45 dBc
	Up Link	≤ -50 dBc	≤ -50 dBc
Time Delay		≤ 5 us	≤ 5 us
Out-band Spurious	9 kHz~1 GHz	≤ -36 dBm	≤ -36 dBm
	1GHz~12.75GHz	≤ -30 dBm	≤ -30 dBm
Operating Temperature		-20 ~ +50 ℃	-20 ~ +50 ℃
Power Supply		220 VAC / 50 Hz	220 VAC / 50 Hz
Dimension		280*242*84 mm	280*242*84 mm

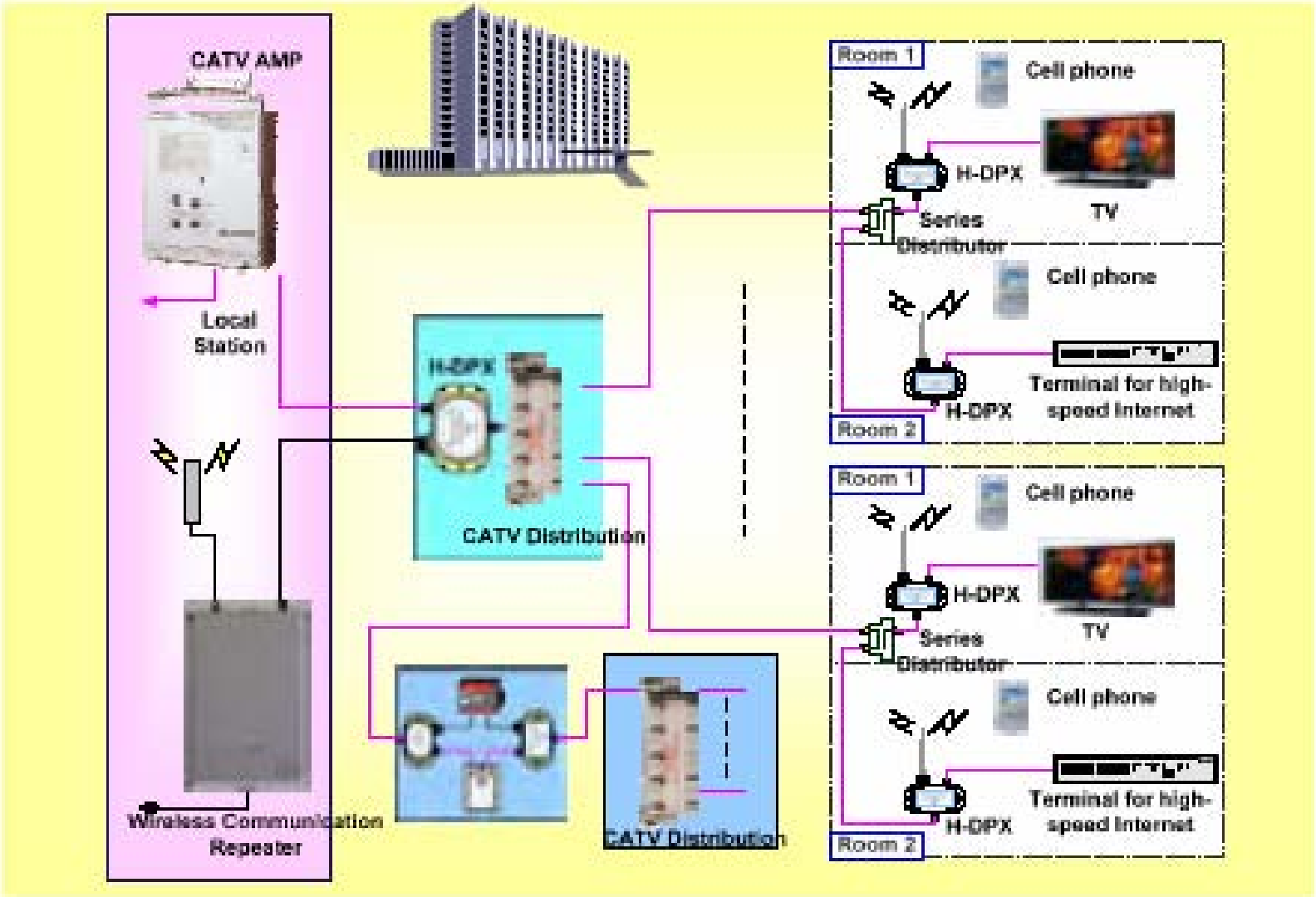
CATV COMBINED INTO IN-BUILDING NETWORK

Example for large Office or Multiplex Building



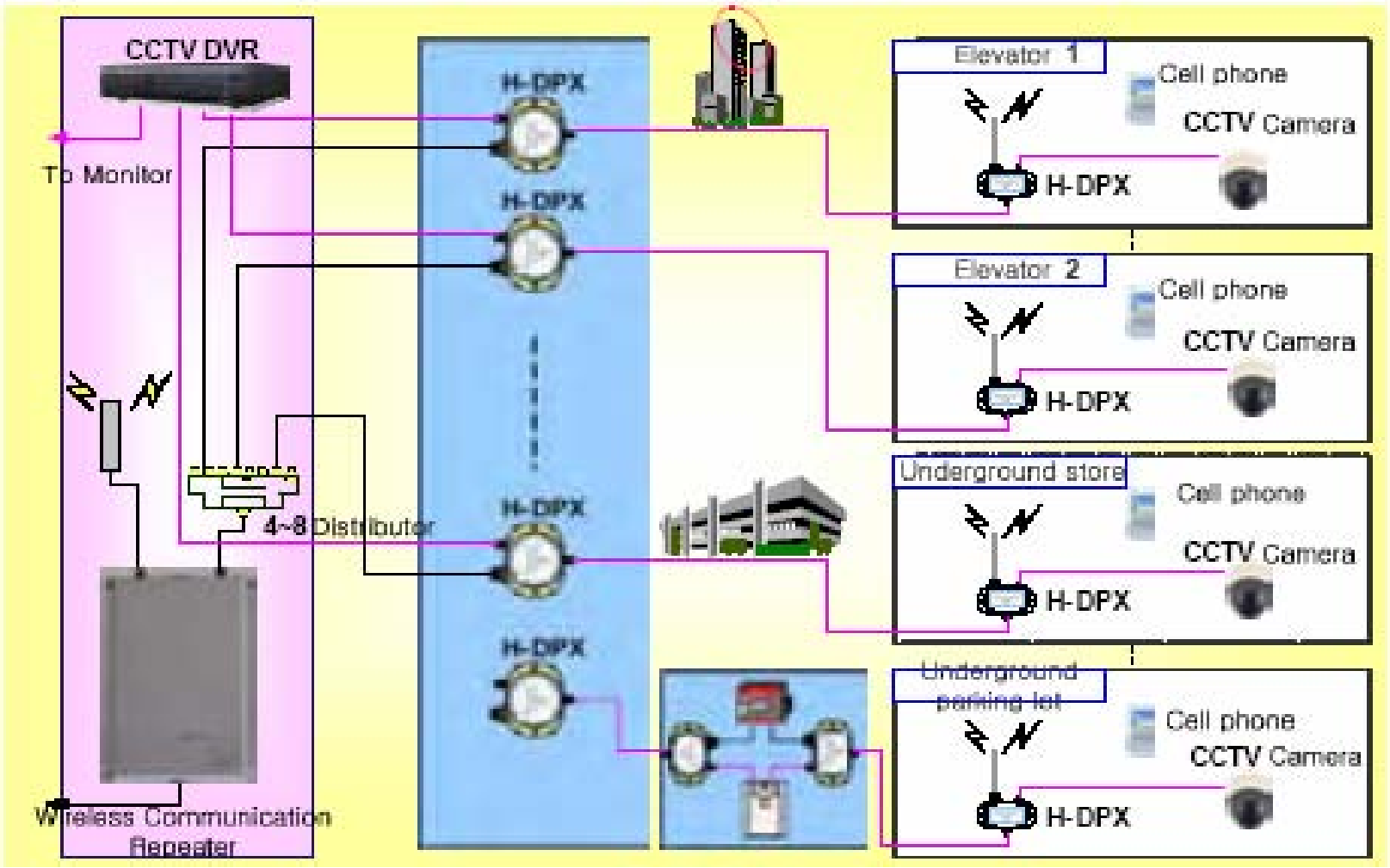
CATV COMBINED INTO IN-BUILDING NETWORK

Example of Configuration for Apartment / Hotel



CATV COMBINED INTO IN-BUILDING NETWORK

Example of configuration for Elevators / Large Parking Lot



Conclusion

Key Merits

- 30% reduction of installation cost comparing with RF-DAS system.
- Able to share service with other operators and high effective.
- Antenna is able to be directly connected to CATV terminal on a wall, so there is no need for in-building repeaters.
- Easy installation and maintenance of this solution comparing with other solutions like RF-DAS.
- Simple extension of Service Coverage.