Japan CATV operators' Requirements for EPoC

Operators' comment #1

Schedule

We will do the field test in the environment according to draft1.0 in March 2014 and confirm the performance as good expected.

- **Japanese operators use frequency between 90 and 222MHz for the analog terrestrial broadcast by government leadership.**
- **It will finish in March 2015, and then analog band will be open.**
- **Many operators will investigate how to use analog band in March 2014(before 1 year of it) .**
- **Unless it is specified that analog band is used for EPoC in March 2014, Few operators will adopt EPoC.**

Cf. IEEE Plan Draft1.0:2013/11, Standard1.0:2015/5

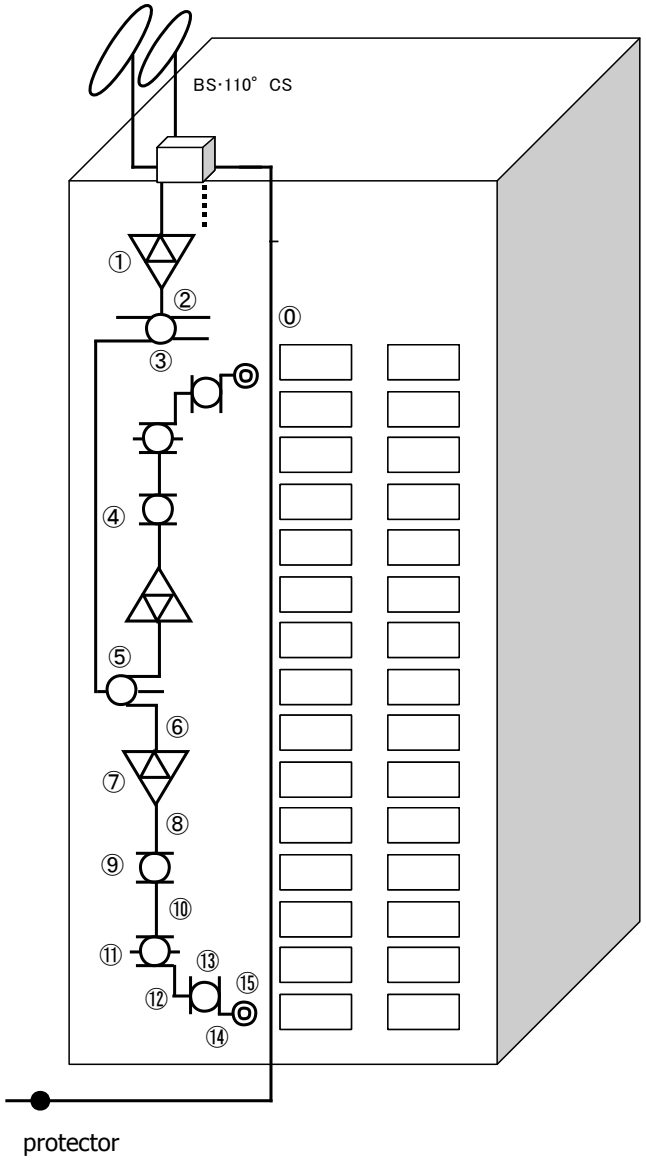
Operators' comment #2

Frequency

Upstream Frequency：10～230MHz

- **Ingress noise dominate less than 30MHz in HFC, so we don't use the band less than 30MHz.**
- **But if we can use modulation method that has high noise tolerance, we can use the band more than 20MHz.**
- **In addition, ingress noise in MDU is lower than one in HFC.**
- **When we consider the existing facilities, we suggest that the start of the upstream frequency be 10MHz.**

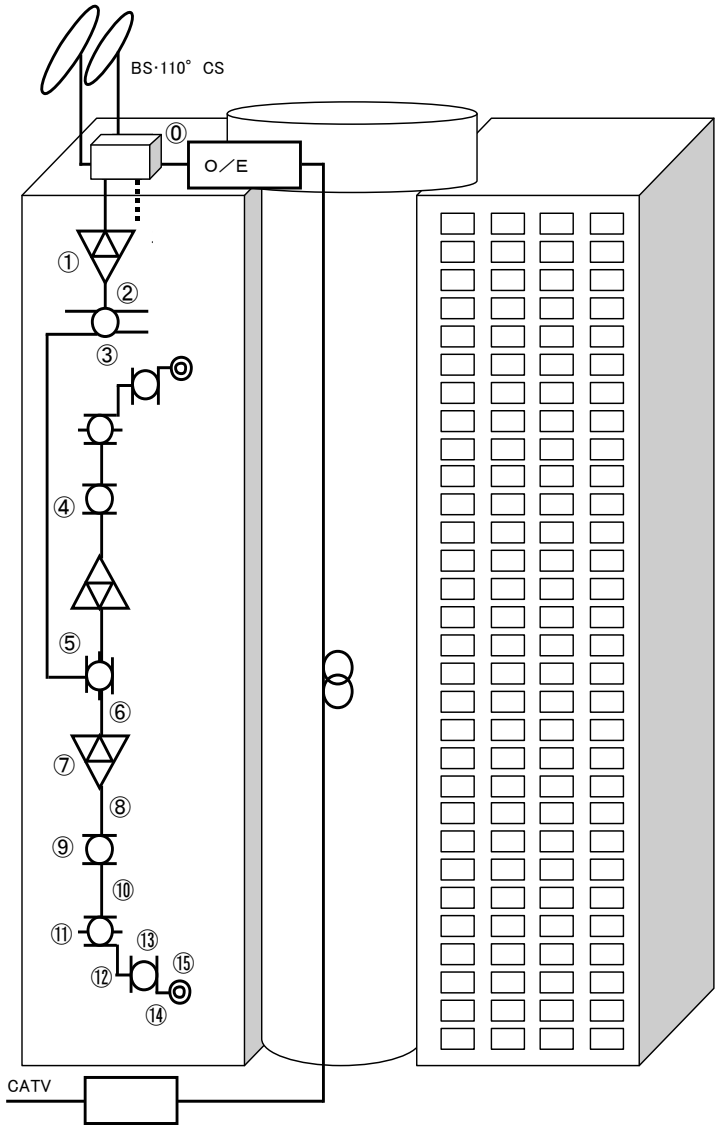
cf. Network in MDU(15F, 120 households)



			Level							
			Up	Down(A)		Down(D) 770M		BS-IF	CS-IF	
			55	70	770	64QAM	OFDM	1336	2150	2602
	Satellite antenna･converter Output		–	–	–	–		80	80	80
	Protector Output(design)		105.7	75	75	65		–	–	–
	Protector(requirement)		–	75	75	65		–	–	–
⓪	Cable(10C)	50m	1.3	1.4	5.2	5.2		–	–	–
	Booster Input(Down)		–	73.6	69.8	59.8		–	–	–
①	1st Booster	Down In/Up out	107	64	64	54		73	73	73
		Down Out/Up In	80	102	102	94		102.5	107.6	110
	Booster Input(Up)		89.9	–	–	–		–	–	–
②	Cable(10C)	0.5m	0.1	0.1	0.1	0.1		0.1	0.1	0.2
③	4 Distributor		8	8	8	8		9	10.5	11.5
④	Cable(10C)	24m	0.6	0.7	2.5	2.5		3.2	4.4	5
⑤	4 Distributor		8	8	8	8		9	10.5	11.5
⑥	Cable(10C)	15m	0.4	0.5	1.6	1.6		2	2.8	3.2
	Total Loss		17.1	17.3	20.2	20.2		23.3	28.3	31.4
	Booster Input(Down)		–	84.7	81.8	73.8		79.2	79.3	78.6
⑦	2nd Booster	Down In/Up out	107	64	64	54		73	73	73
		Down Out/Up In	80	102	102	92		102.5	107.6	110
	Booster Input(Up)		86.2	–	–	–		–	–	–
⑧	Cable(7C)	0.5m	0.1	0.1	0.1	0.1		0.1	0.2	0.2
⑨	4 Branch		4.5	4.5	4.5	4.5		5.5	6	6.5
⑩	Cable(7C)	12m	0.4	0.5	1.7	1.7		2.4	3.2	3.6
⑪	6 Distributor		11	11	11	11		12	14	16
⑫	Cable(7C)	13m	0.5	0.5	1.9	1.9		2.6	3.5	3.9
⑬	4 Distributor		8	8	8	8		9	10.5	11.5
⑭	Cable(5C)	10m	0.5	0.6	2	2		2.7	3.6	4
⑮	TV terminal		0.8	0.8	0.6	0.6		0.8	1.5	2
	Total Loss		25.8	26	29.8	29.8		35.1	42.5	47.7
	TV terminal output/ cable modem output	Calculated	112	76	72.2	62.2		67.4	65.1	62.3
		Spec	–	≧60	≧65	57~81	57~81	57~81	57~81	57~81

Source : JCTEA STD-013 Transmission System for MDU

cf. Network in MDU(30F, 240 households)



			Level							
			Up	Down(A)		Down(D) 770M		BS-IF	CS-IF	
			55	70	770	64QAM	OFDM	1336	2150	2602
	Satellite antenna･converter Output		–	–	–	–		80	80	80
	O/E		Spec between Transmitter and Receiver					–	–	–
		Down Out/Up In	80	95	95	85		–	–	–
	Reciever Input(Up)		106.8	–	–	–		–	–	–
⓪	Cable(10C)	5m	0.2	0.2	0.6	0.6		–	–	–
	Booster Input(Down)		–	94.8	94.4	84.4		–	–	–
①	1st Booster	Down In/Up out	107	64	64	54		73	73	73
		Down Out/Up In	80	102	102	92		104	109.1	111.5
	Booster Input(Up)		85.7	–	–	–		–	–	–
②	Cable(10C)	0.5m	0.1	0.1	0.1	0.1		0.1	0.1	0.2
③	4 Distributor		8	8	8	8		9	10.5	11.5
④	Cable(10C)	49.5m	1.3	1.4	5.2	5.2		6.6	9.1	10.3
⑤	6 Distributor		11	11	11	11		12	14	16
⑥	Cable(10C)	33m	0.9	1	3.5	3.5		4.4	6.1	6.9
	Total Loss		21.3	21.5	27.8	27.8		32.1	39.8	44.9
	Booster Input(Down)		–	80.5	74.2	64.2		71.9	69.3	66.6
⑦	2nd Booster	Down In/Up out	107	64	64	54		66.5	66.5	66.5
		Down Out/Up In	80	102	102	92		99	104.1	106.5
	Booster Input(Up)		86.1	–	–	–		–	–	–
⑧	Cable(7C)	0.5m	0.1	0.1	0.1	0.1		0.1	0.2	0.2
⑨	4 Branch		4.5	4.5	4.5	4.5		5.5	6	6.5
⑩	Cable(7C)	13.2m	0.5	0.5	1.9	1.9		2.6	3.5	4
⑪	6 Distributor		11	11	11	11		12	14	16
⑫	Cable(7C)	14.3m	0.5	0.6	2.1	2.1		2.8	3.8	4.3
⑬	4 Distributor		8	8	8	8		9	10.5	11.5
⑭	Cable(5C)	10m	0.5	0.6	2	2		2.7	3.6	4
⑮	TV terminal		0.8	0.8	0.6	0.6		0.8	1.5	2
	Total Loss		25.9	26.1	30.2	30.2		35.5	43.1	48.5
	TV terminal output/ cable modem output	Calculated	112	75.9	71.8	61.8		63.5	61	58
		Spec	–	≧60	≧65	57~81	57~81	57~81	57~81	57~81

Source : JCTEA STD-013 Transmission System for MDU