

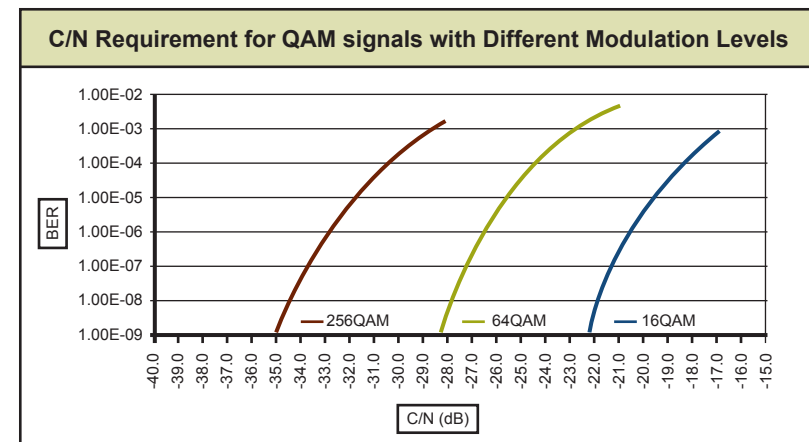
# Cable Basics

## RF/QAM

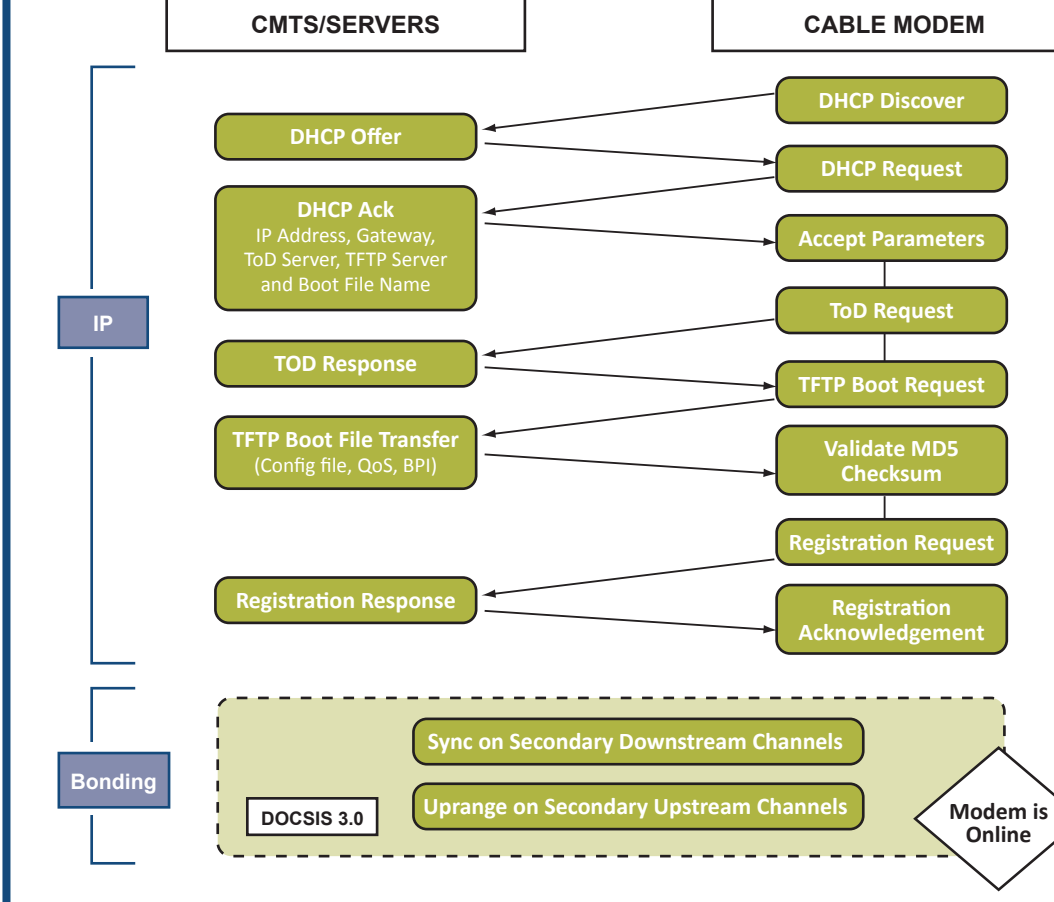
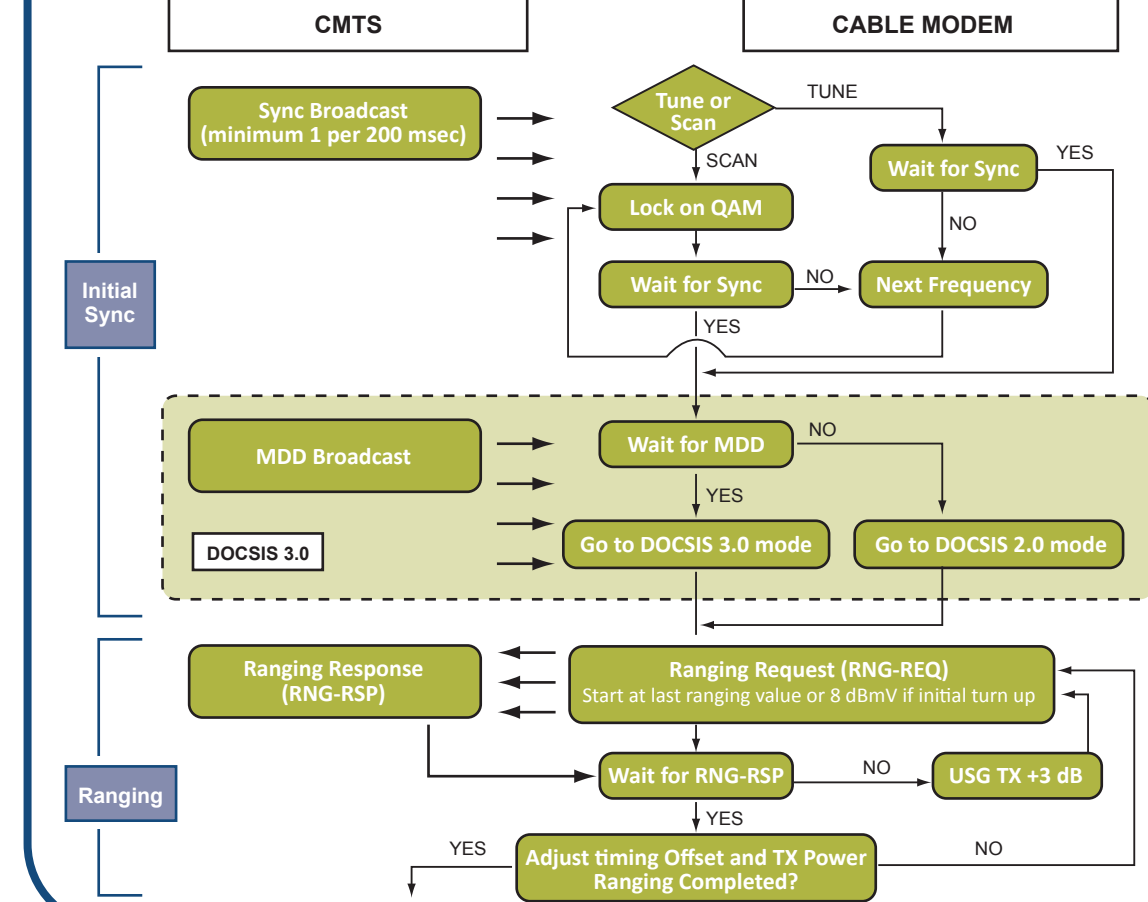
Assumed Downstream RF Channel Characteristics DOCSIS Radio Frequency Interface Specifications	
Parameter	Value
Carrier-to-noise ratio in a 6 MHz band	Not less than 35 dB
Carrier-to-composite triple beat distortion ratio	Not less than 41 dB
Carrier-to-composite second order distortion ratio	Not less than 41 dB
Carrier-to-any other discrete interference	Not less than 41 dB
Amplitude ripple	3 dB within the design bandwidth
Group delay ripple in the spectrum occupied	75 ns within the design bandwidth
Micro-reflections bound for dominant echo	-10 dBc @ ≤ 0.5 μs -15 dBc @ ≤ 1.0 μs -20 dBc @ ≤ 1.5 μs -30 dBc @ > 1.5 μs
Carrier hum modulation	Not greater than -26 dB (5%)

Assumed Upstream RF Channel Characteristics DOCSIS Radio Frequency Interface Specifications	
Parameter	Value
Carrier-to-interference plus ingress ratio	Not less than 25 dB
Amplitude ripple	0.5 dB/MHz
Group delay ripple	200 ns/MHz
Micro-reflections bound for dominant echo	-10 dBc @ ≤ 0.5 μs -20 dBc @ ≤ 1.0 μs -30 dBc @ > 1.5 μs

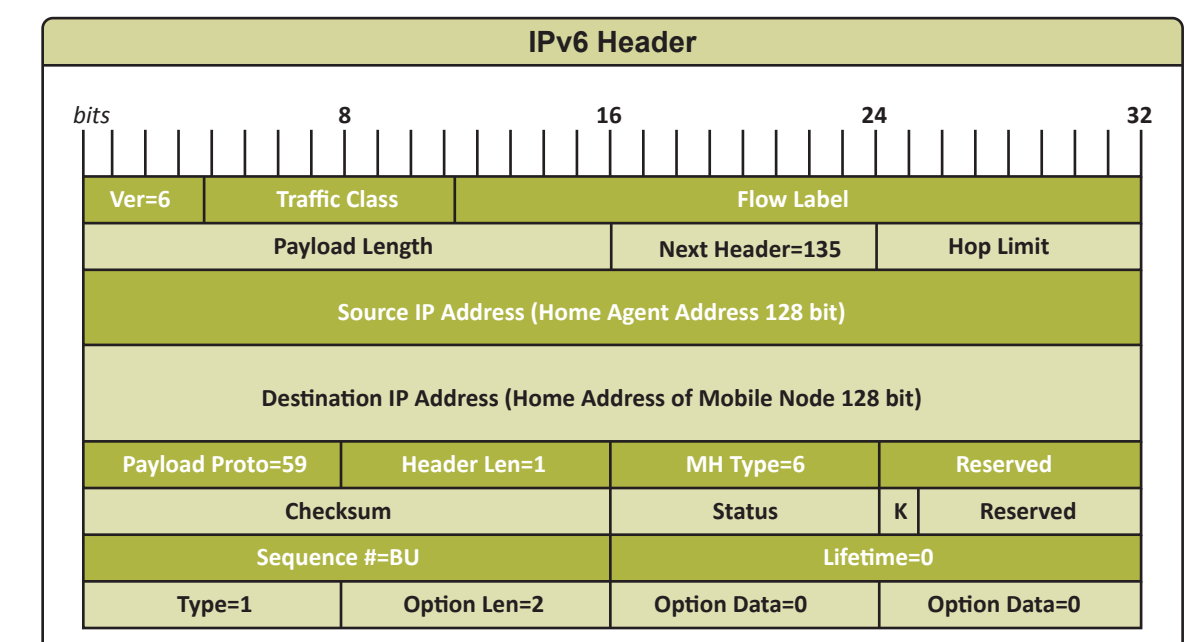
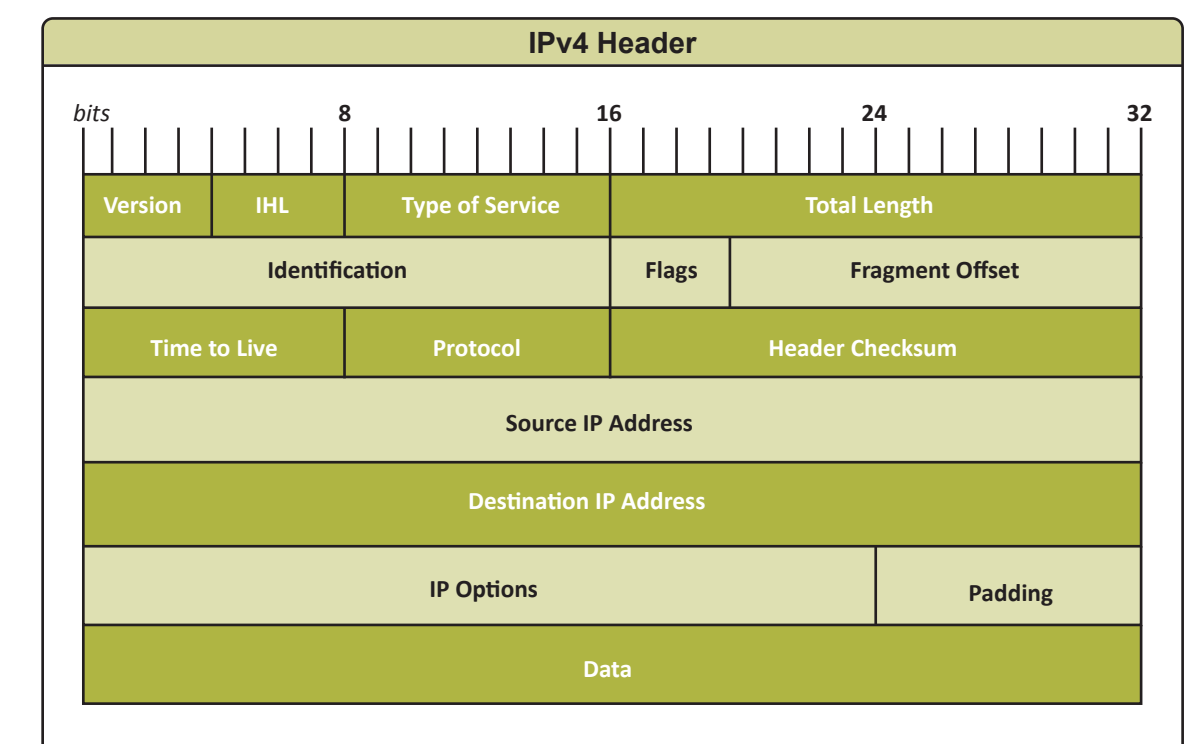
Data Rates vs. QAM			
Annex	Modulation type	Std. Symbol Rate (MHz)	Max. data rate
Annex A (8MHz)	QAM64	6.952	41.4
Annex A (6MHz)	QAM256	6.952	55.2 (480 max 8 channel bonding)
Annex B (8MHz)	QAM64	5.057	38
Annex B (6MHz)	QAM256	5.361	43 (320 max 8 channel bonding)



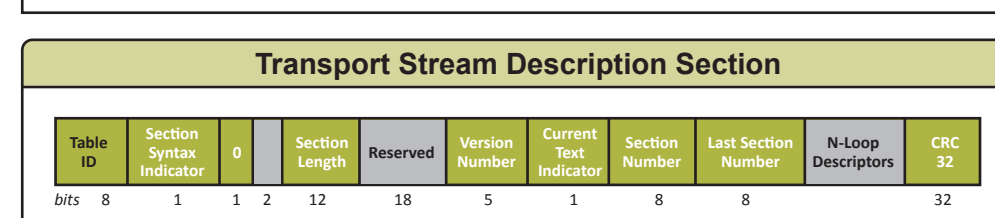
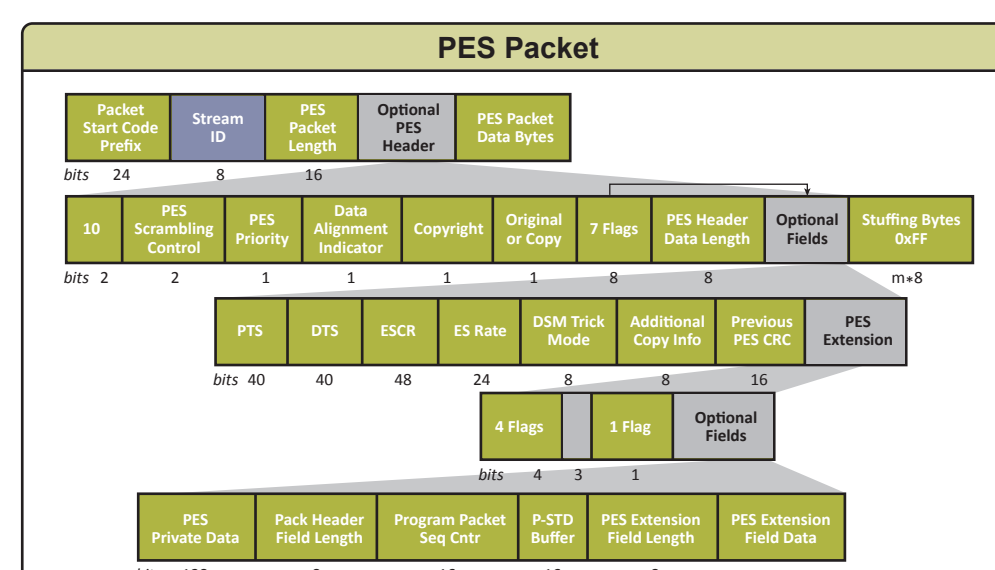
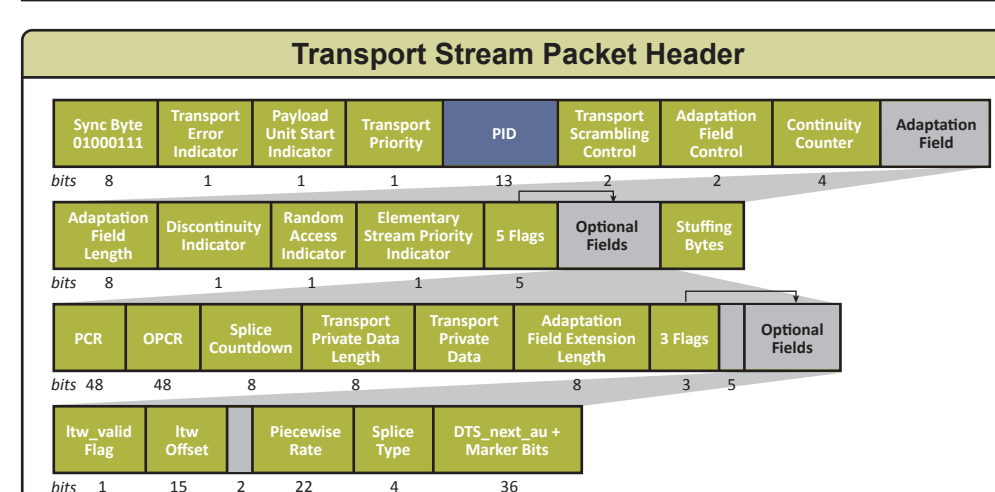
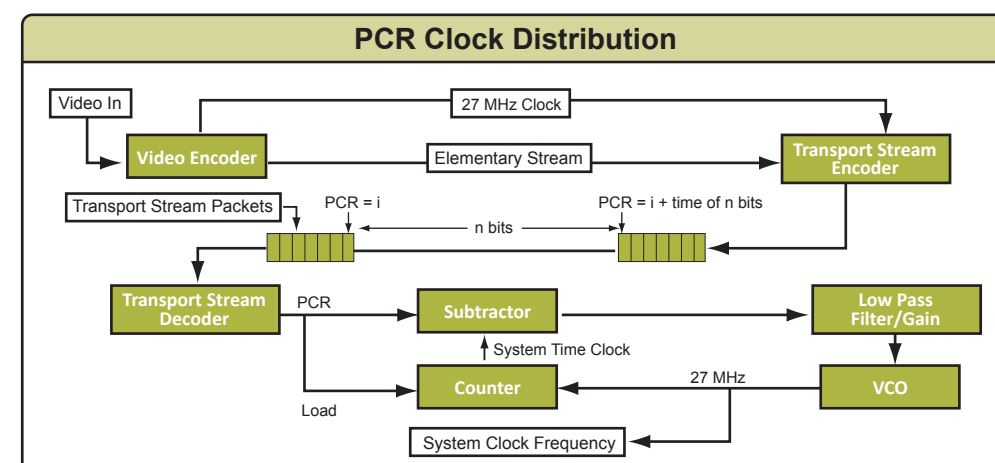
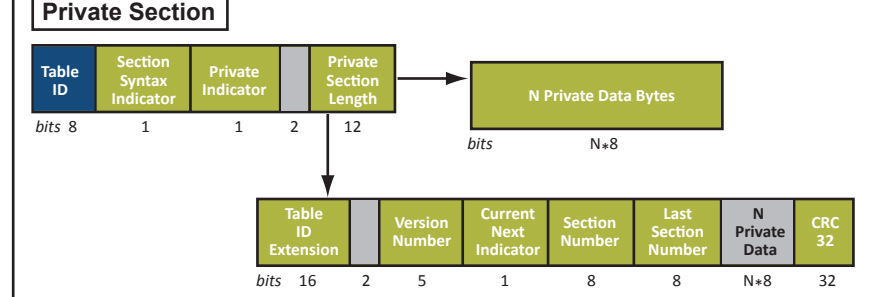
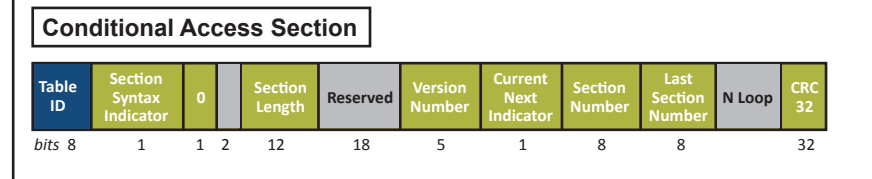
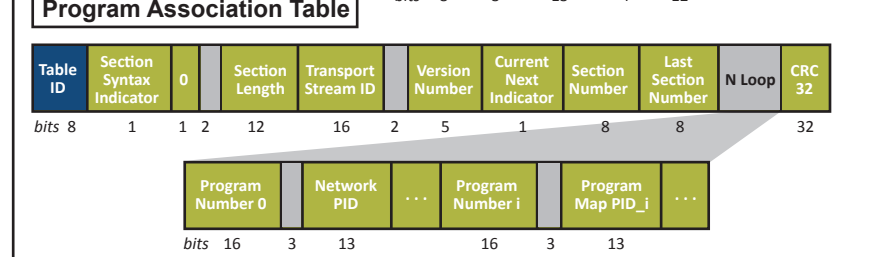
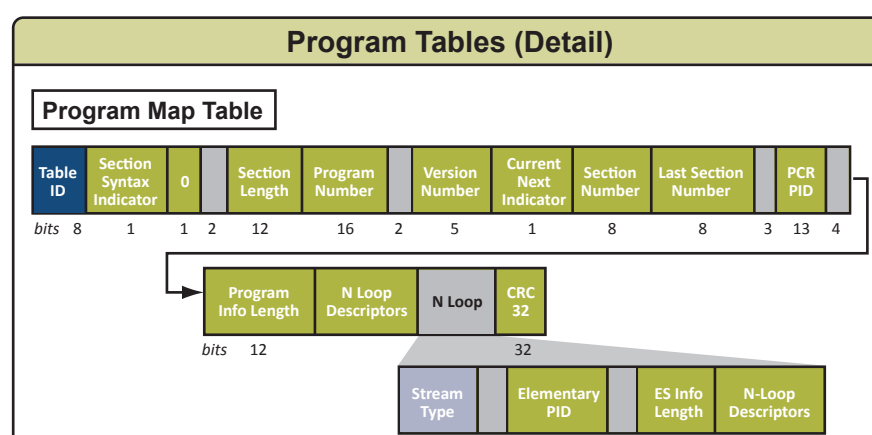
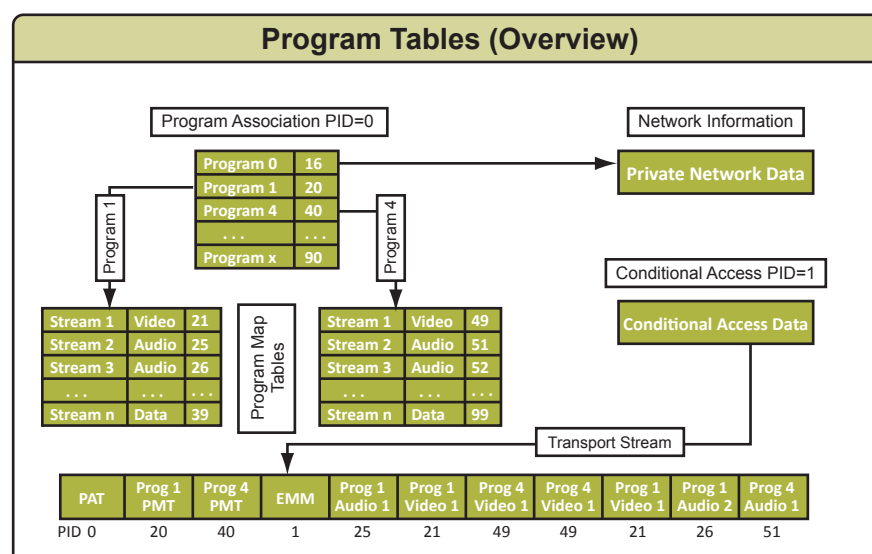
## DOCSIS 3.0



## ETHERNET/IP



## MPEG



Assignments			
Table ID	ISO/IEC	Object Desc.	Reserved
0x00	ISO/IEC 14496	Object Desc. Section	
0x01	ITU-T Rec. H.222.01	ISO/IEC 13818-1	Reserved
0x02	ISO/IEC 13818-6	Defined in ISO/IEC 13818-6	
0x03	ISO/IEC 14496	User Private	
0x04	ISO/IEC 14496	Scene Description Section	
0xFF		Forbidden	

PID	ISO/IEC	Object Desc.	Reserved
0x0000*	ISO/IEC 13818-3, 11172-3, 13818-7 or 14496-3	Audio Stream Number xxxx	
0x0001*	ISO/IEC 13818-2 or 11172-2 or 14496-2	Video Stream Number xxxx	
0x0002	ISO/IEC 14496-1_SL	packelized_stream	
0x0003-0x000F		Reserved	
0x0010	ISO/IEC 14496-1_FlexMux	stream	
0x1FFF		Null Packet	
0x1FFE*		Elementary PID or other purposes	
0x1FFF		Null Packet	

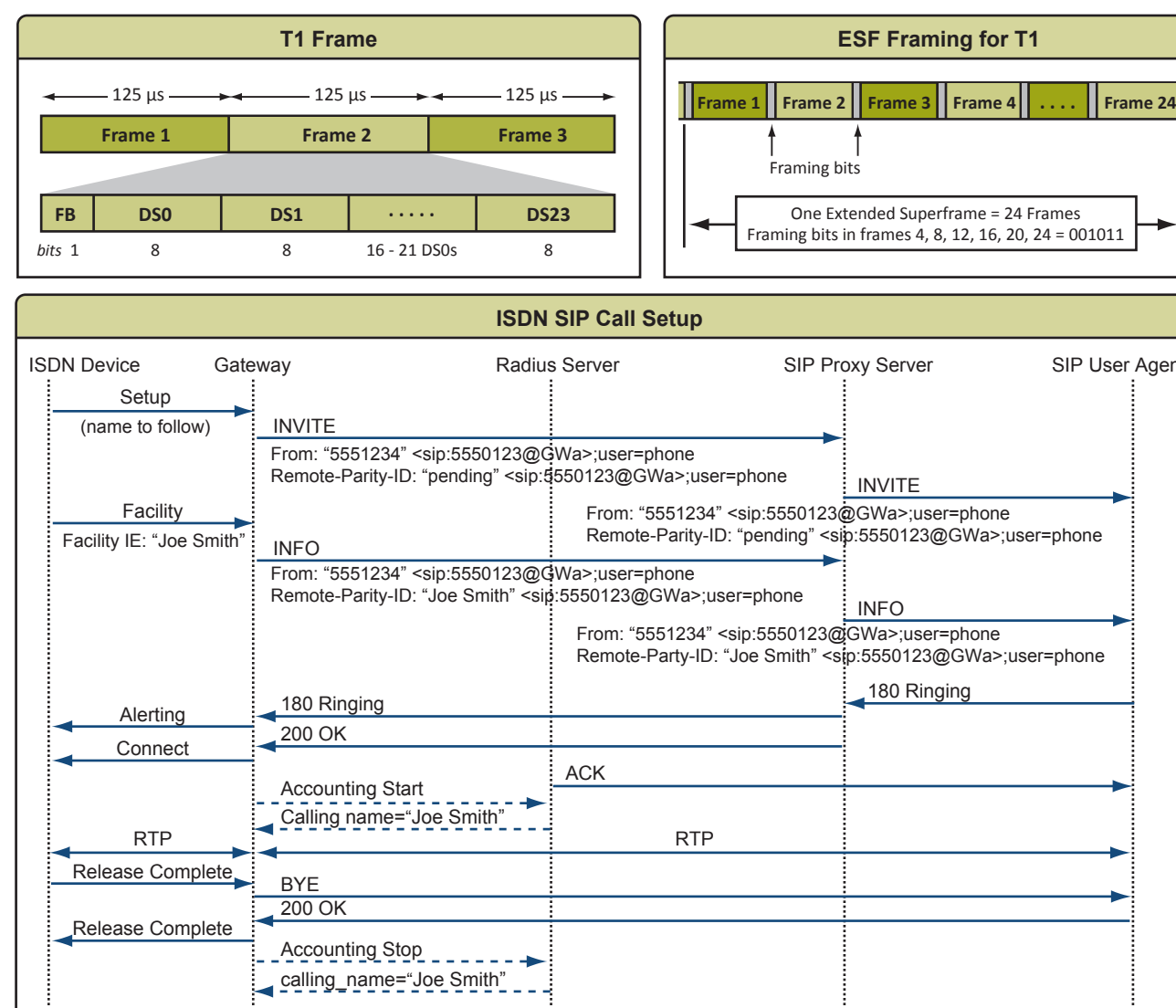
  

Stream ID	ISO/IEC	Object Desc.	Reserved
0xBC	ISO/IEC 13522	stream	
0xBD	ITU-T Rec. H.222.1	Type A	
0xBE	ITU-T Rec. H.222.1	Type B	
0xBF	ITU-T Rec. H.222.1	Type C	
0xC0	ITU-T Rec. H.222.1	Type D	
0xC1	ITU-T Rec. H.222.1	Type E	
0xC2	ITU-T Rec. H.222.1	Type F	
0xC3	ITU-T Rec. H.222.1	Type G	
0xC4	ITU-T Rec. H.222.1	Type H	
0xC5	ITU-T Rec. H.222.1	Type I	
0xC6	ITU-T Rec. H.222.1	Type J	
0xC7	ITU-T Rec. H.222.1	Type K	
0xC8	ITU-T Rec. H.222.1	Type L	
0xC9	ITU-T Rec. H.222.1	Type M	
0xCA	ITU-T Rec. H.222.1	Type N	
0xCB	ITU-T Rec. H.222.1	Type O	
0xCC	ITU-T Rec. H.222.1	Type P	
0xCD	ITU-T Rec. H.222.1	Type Q	
0xCE	ITU-T Rec. H.222.1	Type R	
0xCF	ITU-T Rec. H.222.1	Type S	
0xD0	ITU-T Rec. H.222.1	Type T	
0xD1	ITU-T Rec. H.222.1	Type U	
0xD2	ITU-T Rec. H.222.1	Type V	
0xD3	ITU-T Rec. H.222.1	Type W	
0xD4	ITU-T Rec. H.222.1	Type X	
0xD5	ITU-T Rec. H.222.1	Type Y	
0xD6	ITU-T Rec. H.222.1	Type Z	
0xD7	ITU-T Rec. H.222.1	Type AA	
0xD8	ITU-T Rec. H.222.1	Type AB	
0xD9	ITU-T Rec. H.222.1	Type AC	
0xDA	ITU-T Rec. H.222.1	Type AD	
0xDB	ITU-T Rec. H.222.1	Type AE	
0xDC	ITU-T Rec. H.222.1	Type AF	
0xDD	ITU-T Rec. H.222.1	Type AG	
0xDE	ITU-T Rec. H.222.1	Type AH	
0xDF	ITU-T Rec. H.222.1	Type AI	
0xE0	ITU-T Rec. H.222.1	Type AJ	
0xE1	ITU-T Rec. H.222.1	Type AK	
0xE2	ITU-T Rec. H.222.1	Type AL	
0xE3	ITU-T Rec. H.222.1	Type AM	
0xE4	ITU-T Rec. H.222.1	Type AN	
0xE5	ITU-T Rec. H.222.1	Type AO	
0xE6	ITU-T Rec. H.222.1	Type AP	
0xE7	ITU-T Rec. H.222.1	Type AQ	
0xE8	ITU-T Rec. H.222.1	Type AR	
0xE9	ITU-T Rec. H.222.1	Type AS	
0xEA	ITU-T Rec. H.222.1	Type AT	
0xEB	ITU-T Rec. H.222.1	Type AU	
0xEC	ITU-T Rec. H.222.1	Type AV	
0xED	ITU-T Rec. H.222.1	Type AW	
0xEE	ITU-T Rec. H.222.1	Type AX	
0xEF	ITU-T Rec. H.222.1	Type AY	
0xF0	ITU-T Rec. H.222.1	Type AZ	
0xF1	ITU-T Rec. H.222.1	Type BA	
0xF2	ITU-T Rec. H.222.1	Type BB	
0xF3	ITU-T Rec. H.222.1	Type BC	
0xF4	ITU-T Rec. H.222.1	Type BD	
0xF5	ITU-T Rec. H.222.1	Type BE	
0xF6	ITU-T Rec. H.222.1	Type BF	
0xF7	ITU-T Rec. H.222.1	Type BG	
0xF8	ITU-T Rec. H.222.1	Type BH	
0xF9	ITU-T Rec. H.222.1	Type BI	
0xFA	ITU-T Rec. H.222.1	Type BJ	
0xFB	ITU-T Rec. H.222.1	Type BK	
0xFC	ITU-T Rec. H.222.1	Type BL	
0xFD	ITU-T Rec. H.222.1	Type BM	
0xFE	ITU-T Rec. H.222.1	Type BN	
0xFF	ITU-T Rec. H.222.1	Type BO	

## VoIP/MOS

User Opinion	R Factor	MOS Score (LQ/CQ)
Very Satisfied	100 - 90	5.0 - 4.3
Satisfied	90 - 80	4.3 - 4.0
Some Users Satisfied	80 - 70	4.0 - 3.6
Many Users Dissatisfied	70 - 60	3.6 - 3.1
Nearly All Users Dissatisfied	60 - 50	3.1 - 2.6
Not Recommended	50 - 0	2.6 - 1.0

## T1/ISDN PRI



Ethernet Port Negotiation							
10/100/1000 BaseT Switch Configuration							
Speed	Duplex	Auto	10	10	100	100	1000
Auto	Auto	1000	10	100	100	1000	1000
10	Half	1000	10	100	100	1000	1000
10	Full	1000	10	100	100	1000	1000
100	Half	1000	10	100	100	1000	1000
100	Full	1000	10	100	100	1000	1000
1000	Half	1000	10	100	100	1000	1000
1000	Full	1000	10	100	100	1000	1000

