

AX.25 Amateur Packet-Radio Link-Layer Protocol

State	I with Poll	I with P Poll	RR with Poll	REJ with P Poll	RNR with out P Poll	RNR with out P Poll	SABM	DISC
S1 Disconnected	DM	DM	DM	DM	DM	DM	either	either
S2 Link Setup							UA,S5*	DM,**
S3 Frame Reject	FMR	FMR	FMR	FMR	FMR	FMR		UA,S5** DM,S1
S4 Disconnect Rqst	DM,S1	DM,S1	DM,S1	DM,S1	DM,S1	DM,S1		UA,S5* UA,S1
S5 Information Xfr	RR	I	RR	I	RR	I	RR,S9	S9 UA,S1
S6 REJ Frame Sent	RR,S5	I,S5	RR	I	RR	I	RR,S15	S15 UA,S1
S7 Waiting Acknow.	RR	I	RR	I	RR	I	RR,S12	S12 UA,S5 UA,S1
S8 Device Busy	RNR	RNR	RNR	I	RNR	I	RNR,S10	S10 UA UA,S1
S9 Remote Device Busy	RR	RR	RR,S5	I,S5	RR,S5	I,S5	RR	UA,S5 UA,S1
S10 Both Devices Busy	RNR	RNR	RNR,S8	I,S8	RNR,S8	I,S8	RNR	UA,S5 UA,S1
S11 Waiting Acknow. and Device Busy	RNR	RNR	RNR	I	RNR	I	RNR,S13	S13 UA,S8 UA,S1
S12 Waiting Acknow. and Remote Busy	RR	RR	RR,S7	I,S7	RR,S7	I,S7	RR	UA,S5 UA,S1
S13 Waiting Acknow. Both Devices Busy	RNR	RNR	RNR,S11	I,S11	RNR,S11	I,S11	RNR	UA,S8 UA,S1
S14 REJ Sent and Device Busy	RNR	RNR	RNR	I	RNR	I	RNR,S16	S16 UA,S8 UA,S1
S15 REJ Sent and Remote Busy	RR,S9	RR,S9	RR,S6	I,S6	RR,S6	I,S6	RR	UA,S5 UA,S1
S16 REJ Sent and Both Devices Busy	RNR	RNR	RNR,S14	I,S14	RNR,S14	I,S14	RNR	UA,S5 UA,S1

* DM,S1 if unable to establish link
** UA if received frame is without poll

Fig. A1 — Level 2 state table for command frames received

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State	RR with Final	RR with out F	REJ with Final	REJ with out F	RNR with Final	RNR with out F	UA either	DM either	FRMR either
S1 Disconnected	-	-	-	-	-	-	-	-	-
S2 Link Setup	-	-	-	-	-	-	S5	S1	-
S3 Frame Reject	-	-	-	-	-	-	-	-	SABM, S2
S4 Disconnect Rqst	-	-	-	-	-	-	S1	S1	-
S5 Information Xfr	I	I	I	I	I	S9	S9	I	SABM, S2 SABM, S2
S6 REJ Frame Sent	I	I	I	I	I	S15	I	S15	SABM, S2 SABM, S2 SABM, S2
S7 Waiting Acknow.	I, S5	I	I, S5	I	I	S9	I	S12	SABM, S2 SABM, S2 SABM, S2
S8 Device Busy	I	I	I	I	I	S10	I	S10	SABM, S2 SABM, S2 SABM, S2
S9 Remote Device Busy	I, S5	I, S5	I, S5	I, S5	I	-	-	SABM, S2 SABM, S2 SABM, S2	
S10 Both Devices Busy	I, S8	I, S8	I, S8	I, S8	I, S8	-	-	SABM, S2 SABM, S2 SABM, S2	
S11 Waiting Acknow. and Device Busy	I, S8	I	I, S8	I	I	S10	I	S13	SABM, S2 SABM, S2 SABM, S2
S12 Waiting Acknow. and Remote Busy	I, S5	I, S7	I, S5	I, S7	I	-	-	SABM, S2 SABM, S2 SABM, S2	
S13 Waiting Acknow. Both Devices Busy	I, S8	I, S11	I, S8	I, S11	I	-	-	SABM, S2 SABM, S2 SABM, S2	
S14 REJ Sent and Device Busy	I	I	I	I	I	S16	I	S16	SABM, S2 SABM, S2 SABM, S2
S15 REJ Sent and Remote Busy	I, S6	I, S6	I, S6	I, S6	I	-	-	SABM, S2 SABM, S2 SABM, S2	
S16 REJ Sent and Both Devices Busy	I, S14	I, S14	I, S14	I, S14	I, S14	-	-	SABM, S2 SABM, S2 SABM, S2	

Fig. A2 — Level 2 state table of response frames received

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State	Local Start Cmnd	Local Stop Cmnd	Station Becomes Busy	Condition Clears	T ₁ Expires	T ₃ Expires	N ₂ is Exceeded	Invalid N(S)	Invalid N(R)	Unrecd Frame Received
S1 Disconnected	SABM, S2				SABM	SABM	S1			
S2 Link Setup		DISC, S4			FRMR	FRMR	SABM, S2			
S3 Frame Reject	SABM, S2	DISC, S4			DISC	DISC	S1			
S4 Disconnect Rqst	SABM, S2									
S5 Information Xfr	SABM, S2	DISC, S4	RNR, S8	RR _c , S7	RR _c , S7	REJ, S6	FRMR, S3	FRMR, S3	FRMR, S3	
S6 REJ Frame Sent	SABM, S2	DISC, S4	RNR, S14	RR _c , S7	RR _c , S7	SABM, S2		FRMR, S3	FRMR, S3	
S7 Waiting Acknow.	SABM, S2	DISC, S4	RNR, S11	RR _c ,	SABM, S2			FRMR, S3	FRMR, S3	
S8 Device Busy	SABM, S2	DISC, S4	RR, S5	RNR _c , S11	RNR _c , S11	RNR	FRMR, S3	FRMR, S3	FRMR, S3	
S9 Remote Device Busy	SABM, S2	DISC, S4	RNR, S10	RR _c , S12	RR _c , S12	REJ, S15	FRMR, S3	FRMR, S3	FRMR, S3	
S10 Both Devices Busy	SABM, S2	DISC, S4	RR, S9	RNR _c , S13	RNR _c , S13	RNR	FRMR, S3	FRMR, S3	FRMR, S3	
S11 Waiting Acknow. and Device Busy	SABM, S2	DISC, S4	RR, S7	RNR _c		SABM, S2		FRMR, S3	FRMR, S3	
S12 Waiting Acknow. and Remote Busy	SABM, S2	DISC, S4	RR, S12	BNR _c		SABM, S2		FRMR, S3	FRMR, S3	
S13 Waiting Acknow. Both Devices Busy	SABM, S2	DISC, S4	RR, S6	RNR _c , S11	RNR _c , S11	RNR	FRMR, S3	FRMR, S3	FRMR, S3	
S14 REJ Sent and and Device Busy	SABM, S2	DISC, S4	RR, S16	RR _c , S12	RR _c , S12			FRMR, S3	FRMR, S3	
S15 REJ Sent and Remote Busy	SABM, S2	DISC, S4						FRMR, S3	FRMR, S3	
S16 REJ Sent and Both Devices Busy	SABM, S2	DISC, S4						FRMR, S3	FRMR, S3	

Note: S frames with the notation XXXc are to be sent as commands, all others as responses

Fig. A3 — Level 2 state table miscellaneous inputs

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