

ATS ROUTES
ENR 3.1 LOWER ATS ROUTES

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit Lower Limit	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
		MNM FLT ALT Airspace Classification		Odd	Even	
1	2	3	4	5		6
G460						
▲ KUCHING DVOR/DME (VKG) 012824N 1101842E	066° 246°	FL 460 6 500 FT AMSL Class A 7 000 FT	20	↓		Controlling Authority: 1a. VKG DVOR/DME to VBU DVOR/DME: Kuching Radar (H24) Freq: (PRI) 134.5 MHz (SRY) 125.35 MHz 1b. Except from VKG DVOR/DME to VBU DVOR/DME: Kuching Radar 0000UTC – 0800UTC daily Freq: (PRI) 132.35 MHz (SRY) 133.95 MHz 2. Except Sibul/Bintulu Control Zone VBU DVOR/DME to BRU DVOR/DME Kota Kinabalu ACC– Freq 128.3 MHz 3. Except that part of AWY within a) Brunei TMA Brunei Radar Freq: 127.1MHz b) Miri TMA Miri Approach Freq: (PRI) 129.9 MHz (SRY) 122.70 MHz 4. VLB DVOR/DME to VJN DVOR/DME: a. Kota Kinabalu ACC Freq: 126.1 MHz Except Labuan Control Zone b. Labuan Approach Freq: 119.7 MHz
▲ SIBU DVOR/DME (VSI) 021448N 1120012E	112.0 NM 048° 228°					
▲ BINTULU DVOR/DME (VBU) 030914N 1130048E	82.0 NM 047° 227°					
▲ KADMO 041215N 1140808E	91.0 NM 047° 227°					
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E	61.0 NM 042° 222°					
▲ LABUAN DVOR/DME (VLB) 051723N 1151529E	33.4 NM 052° 232°					
▲ KOTA KINABALU DVOR/DME (VJN) 055357N 1160202E	59.5NM			↑		

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
		Lower Limit MNM FLT ALT Airspace Classification		Odd	Even	
1	2	3	4	5		6
G580						
▲ NIMIX 012454N 1075924E ▲ ATETI (FIR BDRY) 012540N 1083000E ▲ KUCHING DVOR/DME (VKG) 012824N 1101842E ▲ PILAX 021850N 1112326E ▲ MUKAH DVOR/DME (VMH) 025334N 1120210E ▲ SARVO 032630N 1125010E ▲ MIRI DVOR/DME (VMY) 041811N 1135841E ▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E	089° 269°	FL 460 6 500 FT AMSL Class A 7 000 FT	20	↓ 		

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit Lower Limit MNM FLT ALT Airspace Classification	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
				Odd	Even	
1	2	3	4	5		6
L649 (RNP10)						
△ DAKIX (FIR BDRY) 070854N 1145054E						Available only for flights departing from Brunei (WBSB), Labuan (WBKL) and Miri (WBGR) to Hong Kong (VHHH) only. No PDC FL300 and FL380 applicable. Controlling Authority: Within Brunei TMA Brunei Radar Freq 127.1 MHz Brunei TMA to DAKIX: Kota Kinabalu ACC Freq 126.1 MHz
△ PARLU 061912N 1145136E	49.5	FL460 FL135				
△ DOTOX 055618N 1145200E	22.8	Class A				
▲ ISKUD 053636N 1145218E	19.6					
△ AROBO 052000N 1145230E	16.5					
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E	27.4	FL460 6 500 FT AMSL Class A				
M522						
▲ MAMOK 040506N 1154712E		FL 460 FL 135 Class A				No Pre Departure Coordination (No PDC) arrangement: Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M754 will be cleared to FL270. Succeeding aircraft may be cleared to same level provided 10 MIN longitudinal separation using MNT exist with no closing speed. Controlling Authority: Kota Kinabalu ACC Freq 126.1 MHz
△ ELPOX (FIR BDRY) 045316N 1155346E	49.0 NM	MNM FL 140				
▲ KOTA KINABALU DVOR/DME (VJN) 055357N 1160202E	61.0 NM	FL 460 6 500 FT MSL Class A				
△ ENBAX (FIR BDRY) 064403N 1160532E	50.0 NM	MNM 7000FT				
▲ NODIN (FIR BDRY) 081100N 1161142E	87.0 NM					

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit Lower Limit	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
		MNM FLT ALT Airspace Classification		Odd	Even	
1	2	3	4	5		6
M646 (RNP 10)						
▲ OSANU (FIR BDRY) 074124N 1171736E	215° 035°	FL460 FL135		↓		Controlling Authority: 1. OSANU to BRU DVOR/DME Kota Kinabalu ACC – 126.1 MHz 2. BRU DVOR/DME to DARMU Kota Kinabalu ACC – 128.3 MHz 3. DARMU to KAMIN Kuching Radar (H24) Freq: (PRI) 134.5 MHz (SRY) 125.35 MHz Except that part of AWY within Brunei TMA Brunei Radar Freq: 127.1 MHz.
▲ KOTA KINABALU DVOR/DME (VJN) 055357N 1160202E	130.1NM	Class A				
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E	228° 048°	FL460 6500FT AMSL Class A				
△ 50 DME BRU 043437N 1140607E	92.0 NM	MNM 7000FT				
△ SAKMA 042428N 1133955E	249° 069°	FL460 7500FT AMSL MNM 8000FT ALT Class A				
	50.0 NM					
▲ DARMU 040139N 1124036E	249° 069°	FL460 FL135 MNM FL140				
	28.0 NM					
▲ KAMIN (FIR BDRY) 023442N 1085536E	63.5 NM	Class A	241.0 NM			
M754						
▲ SUMLA (FIR BDRY) 080242N 1160054E	200° 020°	FL 460 FL 135 Class A MNM FL 140	20	↓		No Pre Departure Coordination (No PDC) arrangement: Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M754 will be cleared to FL270. Succeeding aircraft may be cleared to same level provided 10 minutes longitudinal separation using MNT exists with no closing speed. Controlling Authority: Kota Kinabalu ACC Freq: 126.1 MHz
▲ VIDIP 054106N 1151003E	150.0 NM					
▲ UKIBA 051849N 1150209E	200° 020°					
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E	24.0 NM					
	200° 020°			↑		
M759						
▲ OLKIT (FIR BDRY) 045012N 1115118E	089° 269°	FL 460 6 500FT AMSL Class A	20	↓		No Pre Departure Coordination (No PDC) arrangement: Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M759/M758 will be cleared to FL310. Succeeding aircraft may be cleared to same level provided 10 minutes longitudinal separation using MNT exists with no closing speed. Controlling Authority: Kota Kinabalu ACC Freq: 126.1 MHz
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E	181.0 NM	MNM 7 000FT				

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit Lower Limit	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
		MNM FLT ALT Airspace Classification		Odd	Even	
1	2	3	4	5		6
M768						
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E ▲ DOGOG 052518N 11407412E ▲ ASISU (FIR BDRY) 055906N 1132046E	306° 126° 56.0 NM 306° 126° 58.0 NM	FL 460 6 500 FT AMSL Class A MNM 7 000 FT	20	↓ ↑		No Pre Departure Coordination (No PDC) arrangement: Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M768 will Be cleared to FL280. Succeeding aircraft may be cleared to same level provided 10 minutes longitudinal separation using MNT exists with no closing speed. Controlling Authority: Kota Kinabalu ACC Freq: 126.1 MHz
M768						
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E △ TMA BDRY BRU 041923N 1153036E ▲ MAMOK 040506N 1154712E	131° 311° 50.0 NM 131° 311° 22.0 NM	FL 460 10 500FT AMSL Class A MNM 11 000 FT	20	↓ ↑		No Pre Departure Coordination (No PDC) arrangement: Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M768 will be cleared to FL280. Succeeding aircraft may be cleared to same level provided 10 minutes longitudinal separation using MNT exists with no closing speed. Controlling Authority: Kota Kinabalu ACC Freq: 128.3 MHz # except that part of ATS route within Brunei TMA – Brunei Radar Freq: 127.1 MHz
R223						
▲ BRUNEI DVOR/DME (BRU) 045229N 1145308E ▲ BUTAX 042613N 1145232E ▲ AGSON (FIR BDRY) 021500N 1145124E	181° 001° 26.0 NM 181° 001° 131.0 NM	FL 460 FL 135 Class A FL 140	20	↓ ↑		Controlling Authority: Kota Kinabalu ACC Freq: 128.3 MHz

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit Lower Limit	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
		MNM FLT ALT Airspace Classification		Odd	Even	
1	2	3	4	5		6
W420						
▲ KOTA KINABALU DVOR/DME (VJN) 055357N 1160202E △ KABDU 063322N 1163312E ▲ KUDAT 065430N 1165000E ▲ SANDAKAN DVOR/DME (VSN) 055414N 1180430E	038° 218°	FL460 8 500FT AMSL	20	↓ 		

Route Designator Significant Points Coordinates	Track (MAG) Dist (NM)	Upper Limit	Lateral Limits (NM)	Cruising Levels		Remarks Controlling Units
		Lower Limit		Odd	Even	
1	2	3	4	5		6
W442						
▲ OLKIT (FIR BDRY) 045012N 1115118E	<u>104°</u> 284°	FL 460 6 500 FT AMSL	20	↓	Controlling Authority: Kota Kinabalu ACC Freq: 128.3 MHz	
▲ ASAKI 042755N 1132007E	91.4 NM <u>104°</u> 284°	Class A				
▲ NIXUR 042332N 1133730E	17.7 NM <u>104°</u> 284°	7 0000 FT				
▲ MIRI DVOR/DME (VMY) 041811N 1135841E	20.0NM			↑		
W449						
▲ MIRI DVOR/DME (VMY) 041811N 1135841E	<u>108°</u> 288°	FL 245 4 500 FT MSL	20	↓	Controlling Authority: Kota Kinabalu ACC Freq: 128.3 MHz except within Miri TMA Miri APPROACH Freq: (PRI) 129.9 MHz (SRY) 122.7 MHz Within Brunei TMA Brunei Radar Freq: 127.1 MHz Within Mulu CTR Mulu AFIS Freq: (PRI) 129.200 MHz (SRY) 121.700 MHz Caution: Acft intending to hold over VZU DVOR/DME or DVOR must cross 8 DME VZU at 10000 FT or enter minimum holding pattern at 10000 FT due to high terrain east of VZU DVOR.	
▲ ESLAB 041152N 1141749E	20.1 NM <u>108°</u> 288°	5 000 FT				
▲ 8 DME VZU 040429N 1144007E	23.5NM <u>108°</u> 288°	FL 245 9 500 FT MSL				
▲ MULU DVOR/DME (VZU) 040158N 1144743E	8.0 NM	10 000 FT		↑		
W450						
▲ LIMBANG DVOR/DME (VLG) 044750N 1150008E	<u>244°</u> 064°	FL 245 4 500 FT MSL	20	↓	Controlling Authority: Kota Kinabalu ACC Freq: 128.3Mhz except within Brunei TMA Brunei Radar Freq: 127.1 MHz Within Miri TMA Miri APPROACH Freq: (PRI) 129.9 MHz (SRY) 122.7 MHz Limbang Tower Freq: (PRI) 124.30 MHz (SRY) 118.50 MHz	
▲ EXUGO 042425N 1141135E	53.7NM <u>244°</u> 064°	Class A				
▲ MIRI DVOR/DME (VMY) 041811N 1135841E	14.3 NM	5 000 FT				↑

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		MNM FLT ALT Airspace Classification		Odd	Even	
1	2	3	4	5		6
W451						
▲ LIMBANG DVOR/DME (VLG) 044750N 1150008E	043° 223 °	FL 245 4 500 FT AMSL	20	↓	↑	Controlling Authority: Kota Kinabalu ACC Freq: 128.3 MHz Except within Brunei TMA Brunei Radar Freq: 127.1 MHz Limbang Tower Freq: (PRI) 124.30 MHz (SRY) 118.50 MHz
	91.0 NM	5 000FT				
▲ KOTA KINABALU DVOR/DME (VJN) 055357N 1160202E						
W452						
▲ MULU DVOR/DME (VZU) 040158N 1144743E	012 ° 192 °	FL 245 9 500 FT MSL	20	↓	↑	Controlling Authority: Kota Kinabalu ACC Freq: 128.3 MHz Except within Miri TMA Miri APPROACH Freq: (PRI) 129.9 MHz (SRY) 122.70 MHz Within Brunei TMA Brunei Radar Freq: 127.1 MHz Mulu AFIS Freq: (PRI) 129.200 MHZ (SRY) 121.700 MHz Caution: Acft intending to hold over VZU DVOR/DME or DVOR must cross 16 DME VZU at 10000 ft or enter minimum holding pattern at 10000 ft due to high terrain east of VZU DVOR
	16.0 NM	10 000 FT				
	012 ° 192 °	FL 245 7 000 FT MSL				
		Class A				
▲ 16 DME VZU 041740N 1145104E						
▲ BUTAX 042613N 1145232E	9.0 NM	7 000 FT				
Y445						
▲ LEDAM 045149N 1134706E		FL 460 FL 195		↓	↑	Controlling Authority : Kota Kinabalu ACC Freq: 126.1 MHz
	72.0 NM	Class A				
▲ ASISU (FIR BDRY) 055906N 1132046E						