# ENR 3 ATS ROUTES

## ENR 3.3 AREA NAVIGATION (RNAV) ROUTES

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits / Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **L629 (RNP 10)** | | | | | | |
| ▲ BUVAL (FIR BDRY)<br>033622N 1034342E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft. |
| | 054°<br>22.6 NM | FL 460 / FL 245<br>MNM FL 250 | 20 | ↑ | | |
| ▲ PEKAN<br>DVOR/DME (VPK)<br>032259N 1032524E | | | | | | |
| **L635 (RNP 10)** | | | | | | |
| ▲ DOVOL (FIR BDRY)<br>033048N 1034924E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft. |
| | 252°<br>25.2 NM | FL 460 / FL 245<br>MNM FL 250 | 20 | ↓ | | |
| ▲ PEKAN<br>DVOR/DME (VPK)<br>032259N 1032524E | | | | | | |
| **L642 (RNP 10)** | | | | | | |
| ▲ EGOLO (FIR BDRY)<br>031936N 1040048E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft. |
| | 009° / 189°<br>25.1 NM | FL 460 / FL 245<br>MNM FL 250 | | ↓ | | |
| ▲ ROBMO<br>025440N 1035700E | | | | | | |
| | 009° / 189°<br>31.5 NM | | 20 | ↑ | | |
| ▲ MERSING<br>DVOR/DME (VMR)<br>022318N 1035218E | | | | | | |
| **L645 (RNP 10)** | | | | | | |
| ▲ SAPAM (FIR BDRY)<br>080434N 0973300E | | | | | | Longitudinal Separation of 10 mins between RNAV equipped acft. applying Mach Number Technique.<br><br>**Controlling Authority :**<br>Kuala Lumpur ACC:<br>(P) 133.4 MHz, (S) 132.55 MHz |
| | 267° / 087°<br>20 NM | FL 460 / FL 260<br>MNM FL 260 | 20 | ↓ | | |
| ▲ MAPSO<br>080330N 0971256E | | | | | | |
| | 268° / 088°<br>102 NM | | | | | |
| ▲ IDKUT<br>080017N 0953017E | | | | | | |
| | 269° / 089°<br>65 NM | | | ↑ | | |
| ▲ SAMAK (FIR BDRY)<br>075842N 0942500E | | | | | | |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **L510 (RNP 10)** | | | | | | |
| ▲ EMRAN<br>083430N 0942500E<br><br>▲ IDKUT<br>080017N 0953017E<br><br>▲ LEKIR<br>071632N 0965243E<br><br>▲GIVAL<br>070000N 0980000E | 298°<br>118°<br>73NM<br>298°<br>118°<br>93NM<br>284°<br>104°<br>69NM | FL 460<br>FL275<br>MNM FL280<br><br>FL 460<br>FL255<br><br>MNM FL260 | 20 | ↓ | | Longitudinal separation of 10 mins btn RNAV equipped acft applying Mach Number Technique.<br><br>Note1: Unidirectional Eastbound – 24 hrs, daily<br><br>Note 2: When successive AFTM westbound flights flight planned on P628 arriving GIVAL between 1500 and 1900UTC and flights flight planned on N571/N877 arriving VAMPI between 1530 and 1930UTC do not meet the required longitudinal separation requirements, some of these flights may be rerouted onto this ATS route by KL ACC to allow the allocation of more optimal flight levels<br><br>Note 3: Operators should not flight plan westbound on L510.<br><br>Controlling Authority: Kuala Lumpur ACC –<br>(P) 133.4 MHZ (S) 132.55 MHZ |
| **L517** | | | | | | |
| ▲ GULIB (FIR BDRY)<br>041714N 1110633E<br><br>△ TMA BDRY<br>041938N 1131937E<br><br>▲ MIRI DVOR/DME (VMI)<br>042016N 1135939E | 269°<br>089°<br>133NM<br>269°<br>089°<br>40NM | FL 460<br>FL135<br>MNM FL140<br>FL 460<br>A065<br><br>MNM A070 | 20 | ↑ | | **No PDC arrangements FL280, FL300 and FL340**<br><br>**Controlling Authority:**<br>Miri Approach 129.9MHz and Kota Kinabalu ACC 128.3MHz.<br>* This unidirectional RNAV route joins M758 at TERIX. |
| **M522** | | | | | | |
| ▲ MAMOK<br>040506N 1154712E<br><br>▲ KOTA KINABALU DVOR/DME (VJN)<br>055357.3N 1160202.3E<br><br>▲ NODIN (FIR BDRY)<br>081100N 1161142E | 008°<br>188°<br>110NM<br>004°<br>184°<br>137NM | FL 460<br>FL135<br>MNM FL140 | 20 | ↓ | ↑ | **No Pre Departure Coordination (No PDC) arrangement :**<br><br>Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M754 will be cleared to FL270. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed.<br><br>**Controlling Authority :**<br>Kinabalu ACC - 126.1 MHz. |
| **M626** | | | | | | |
| △ KADAX (FIR BDRY)<br>061556N 1021542E<br><br>▲ KOTA BHARU DVOR/DME (VKB)<br>060948.3N 1021851.1E | 153°<br>333°<br>7NM | FL 460<br>6500FT ALT<br>MNM 7000FT | 20 | ↓ | ↑ | **Controlling Authority:**<br>Kuala Lumpur ACC:<br>(P) 134.25 MHz, (S) 129.75 MHz<br>(Below FL 150 within Kota Bharu TMA - Kota Bharu Approach<br>(P) 120.85 MHz (S) 130.3 MHz. |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **M644** | | | | | | |
| ▲ ABTOK (FIR BDRY)<br>061818N 1021744E<br><br>▲ KOTA BHARU<br>DVOR/DME (VKB)<br>060948.3N 1021851.1E | 172°<br>352°<br>8NM | FL 460<br>FL 285<br>MNM FL290 | 20 | ↓ | ↑ | **Controlling Authority :**<br>Kuala Lumpur ACC -<br>(P) 134.25 MHz .(S) 129.75 MHz |
| **M751** | | | | | | |
| ▲ GOLUD (FIR BDRY)<br>061706N 1021636E<br><br>▲ KOTA BHARU<br>DVOR/DME (VKB)<br>060948.3N 1021851.1E<br><br>▲ PEKAN<br>DVOR/DME (VPK)<br>032259N 1032524E | 163°<br>343°<br>8 NM<br>158°<br>338°<br>179 NM | FL 460<br>FL 235<br>MNM FL 240 | 20 | ↓ | ↑ | Longitudinal Separation of 10 mins between RNAV equipped acft. applying Mach Number Technique.<br><br>**Reporting Procedures :**<br>Pilots operating on Awy M751 and destined for Kuantan, must report on RTF to Kuantan ATC before entering Kuantan TMA.<br>All acft on Awy M751 deviating east of track when area WMR 102B is active and other acft intending to enter these areas, shall contact Kuantan Approach or Lumpur Control as appropriate and obtain traffic information. Pilots are warned that these areas are intensively used by mliitary acft.<br>**No Pre Departure Coordination (No PDC) arrangement :**<br>Flights departing from Singapore to airports within Thailands will be cleared to all flight levels. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed.<br>**Controlling Authority:**<br>GOLUD - A/VKN - Kuala Lumpur ACC :<br>(P) 134.25 MHz, (S) 129.75 MHz,<br>A/VKN - VPK - Kuala Lumpur ACC:<br>(P) 132.6 MHz, (S) 133.65 MHz |
| **M754** | | | | | | |
| ▲ SUMLA (FIR BDRY)<br>080242N 1160054E<br><br>▲ VIDIP<br>054106N 1151003E<br><br>▲ UKIBA<br>051849N 1150209E<br><br>▲ BRUNEI<br>DVOR/DME (BRU)<br>045230N 1145254E | 200°<br>020°<br>150 NM<br>200°<br>020°<br>24 NM<br>200°<br>020°<br>28 NM | FL 460<br>FL 135<br>MNM FL 140 | 20 | ↓ | ↑ | **No Pre Departure Coordination (No PDC) arrangement :**<br><br>Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M754 will be cleared to FL 270. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed.<br><br>**Controlling Authority :**<br>Kinabalu ACC - 126.1 MHz |

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|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **M758** | | | | | | |
| ▲ PEKAN<br>DVOR/DME (VPK)<br>032259N 1032524E | | | | | | |
| | 087°<br>267°<br>30.4 NM | | | ↓ | | Longitudinal separation of 10 mins between RNAV equipped acft.<br><br>**No Pre Departure Coordination (No PDC) arrangement :**<br><br>Flights departing from Peninsular Malaysia to Kota Kinabalu FIR via RNAV route M758 will be cleared to FL 270, FL 290 or FL 330. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed. |
| ▲ IDSEL (FIR BDRY)<br>032430N 1035518E | - | | | | | |
| ▲ URIGO<br>032505N 1040647E | - | | | | | |
| ▲ VISAT<br>032620N 1043134E | - | FL 460<br>FL 245<br>MNM FL 250 | 20 | | | |
| ▲ MABAL<br>032826N 1051236E | - | | | | | |
| ▲ ELGOR<br>033014N 1054818E | - | | | | | |
| ▲ LUSMO<br>033341N 1065534E | - | | | | | |
| ▲ TERIX<br>041521N 1093456E | - | | | | | |
| ▲ OLKIT (FIR BDRY)<br>045012N 1115118E | | | | | | |
| | 077°<br>257°<br>140 NM | | | | | Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M758 will be cleared to FL 310. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed.<br><br>**Controlling Authority :**<br>Kinabalu ACC - 126.1 MHz |
| ▲ DOGOG<br>052518N 1140742E | 077°<br>257°<br>65 NM | FL 460<br>FL 135<br>MNM FL 140 | | | | |
| ▲ VIDIP<br>054106N 1151003E | 077°<br>257°<br>53 NM | | | ↑ | | |
| ▲KOTA KINABALU<br>DVOR/DME (VJN)<br>055357.3N 1160202.3E | | | | | | |
| **M759** | | | | | | |
| ▲ OLKIT (FIR BDRY)<br>045012N 1115118E | | | | | | |
| | 089°<br>269°<br>181 NM | FL 460<br>6 500 FT ALT<br>MNM 7 000 FT | 20 | ↑ | ↓ | **No Pre Departure Coordination (No PDC) arrangement :**<br><br>Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M759/M758 will be cleared to FL 310. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed.<br><br>**Controlling Authority :**<br>Kinabalu ACC - 126.1 MHz |
| ▲ BRUNEI<br>DVOR/DME (BRU)<br>045230N 1145254E | | | | | | |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **M761** | | | | | | |
| ▲ PEKAN<br>DVOR/DME (VPK)<br>032259N 1032524E | | | | | | |
| | 105°<br>285°<br>46 NM | | | ↓ | | Longitudinal separation of 10 mins between RNAV equipped acft.<br>**No Pre Departure Coordination (No PDC) arrangement :**<br>Flights departing from Peninsular Malaysia to Kota Kinabalu FIR via RNAV route M761 will be cleared to FL 270, FL 290 or FL 330. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed. |
| ▲ KETOD (FIR BDRY)<br>031042N 1040942E | - | | | | | |
| ▲ OTLON<br>030752N 1042006E | - | FL 460<br>FL 245<br>MNM FL 250 | 20 | | | |
| ▲ KILOT<br>030217N 1044023E | - | | | | | |
| ▲ LIPRO<br>025342N 1051128E | - | | | | | |
| ▲ BOBOB<br>022206N 1070558E | - | | | | | |
| ▲ SABIP<br>020942N 1075042E | 106°<br>286°<br>40.8NM | FL 460<br>6 500 FT ALT<br>MNM 7 000 FT | | | | Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M761 will be cleared to FL 280. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed. |
| ▲ AGOBA (FIR BDRY)<br>015842N 1083000E | 106°<br>286°<br>113 NM | | | ↑ | | |
| ▲ KUCHING<br>DVOR/DME (VKG)<br>012824.0N 1101820.7E | | | | | | **Controlling Authority :**<br>Kuching ACC - 134.5 MHz |
| **M763** | | | | | | |
| ▲ PEKAN<br>DVOR/DME (VPK)<br>032259N 1032524E | | | | | | |
| | 029°<br>209°<br>31.4 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | ↓ | ↑ | Longitudinal separation of 10 mins between RNAV equipped acft.<br>All acft on Awy M763 deviating west of track when area WMR 102B is active and other acft intendng to enter these area, shall contact Kuantan Approach or Lumpur Control as appropriate and obtain traffic information. |
| ▲ TAXUL (FIR BDRY)<br>035036N 1034036E | | | | | | |
| **M765** | | | | | | |
| ▲ IGARI<br>065612N 1033506E | | | | | | |
| | 059°<br>239°<br>53 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | | ↓ | Longitudinal separation of 10 mins between RNAV equipped acft.<br>Portion of M765 within Singapore FIR from VENLI to IGARI delegated to Lumpur ACC for provision of ATS.<br>**No Pre Departure Coordination (No PDC) arrangement :**<br>Flights departing from Peninsular Malaysia for Northeast bound traffic up to PANDI will be cleared to FL 270 / FL 370. For Northeast bound traffic after PANDI will be cleared to FL 290 / FL 370.<br>**Controlling Authority:**<br>Kuala Lumpur ACC:<br>(P) 134.25 MHz, (S) 129.75 MHz |
| ▲ VENLI (FIR BDRY)<br>062848N 1024900E | 058°<br>238°<br>36 NM | | | ↑ | | |
| ▲ KOTA BHARU<br>DVOR/DME (VKB)<br>060948.3N 1021851.1E | | | | | | |

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|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **M768** | | | | | | |
| ▲ MAMOK<br>040506N 1154712E | 311°<br>131°<br>22NM | | | | | **No Pre Departure Coordination (No PDC) arrangement :**<br><br>Flights departing from aerodromes within Kota Kinabalu FIR via RNAV route M768 will be cleared to FL 280. Succeeding acft may be cleared to same level provided 10 mins longitudinal separation using MNT exists with no closing speed.<br><br>**Controlling Authority :**<br>Kinabalu ACC - 126.1 MHz |
| △ TMA BDRY<br>041923.2N 1153036.1E | 311°<br>131°<br>50NM | FL 460<br>10500FT ALT<br>MNM 11000FT | | ↑ | | |
| ▲ BRUNEI<br>DVOR/DME (BRU)<br>045230N 1145254E | 306°<br>126°<br>56NM | | 20 | | | |
| ▲ DOGOG<br>052518N 1140742E | 306°<br>126°<br>58NM | FL 460<br>6500FT ALT<br>MNM 7000FT | | ↓ | | |
| ▲ ASISU (FIR BDRY)<br>055906N 1132046E | | | | | | |
| **M771** | | | | | | |
| ▲ MERSING<br>DVOR/DME (VMR)<br>022318N 1035218E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft. |
| ▲RAXIM (FIR BDRY)<br>030318N 1041712E | 032°<br>212°<br>47 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | ↓ | | |
| **M772** | | | | | | |
| ▲ ASISU (FIR BDRY)<br>055906N 1132048E | | | | | | No Pre Departure Coordination (No PDC) arrangement: Unidirectional routing for flights between city pair of Jakarta and Hong Kong and restricted to FL300 and FL380 only.<br><br>**Controlling Authority:**<br>Between section:<br>1. ANIPU - DARMU<br>Kuching ACC - 134.5MHz.<br>2. DARMU - ANIRU<br>Kinabalu ACC - 128.3MHz.<br>3. ANIRU - ASISU<br>Kinabalu ACC 126.1MHz. |
| ▲ ANIRU<br>050911N 1130326E | 019°<br>53 NM | | | | | |
| ▲ BOMPO<br>045100N 1125709E | 019°<br>19 NM | | | | | |
| ▲ AGUPO<br>043537N 1125200E | 019°<br>16 NM | | | | | |
| ▲ DARMU<br>040139N 1124036E | 019°<br>36 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | | | |
| ▲ RIZAN<br>030115N 1121724E | 021°<br>65NM | | | | | |
| ▲ SIBU<br>DVOR/DME (VSI)<br>021448.5N 1120012.2E | 021°<br>50NM | | | | | |
| ▲ ANIPU (FIR BDRY)<br>010142N 1112725E | 024°<br>80 NM | | | ↑ | | |

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|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **N571 (RNP 10)** | | | | | | |
| ▲ GUNIP<br>042953N 0993150E | | | | | | Longitudinal Separation of 10 mins between RNAV equipped acft. applying Mach Number Technique. Uni-Directional Routing System (Refer ENR 1.9 - 5 and ENR 1.9-8)<br><br>**No Pre Departure Coordination (No PDC) arrangement :**<br>Flights departing from WMSA/WMKK/WSSS will be cleared to FL280 or FL 300. Succeeding acft cleared to same cruising level shall be provided at least 10 mins longitudinal separation with no closing speed. Additional longitudinal separation shall be provided by ATC for faster acft following the slower acft on the same route.<br>**Note**: There are no ATFM requirements or flight planning restrictions for flights via N571/N877 entering Kabul FIR at SERKA then UL333 to SOKAM. However, to avoid conflictions with flights that are subjected to ATFM procedures, flights shall not flight plan via N571/N877 to enter Kabul FIR at SERKA then B466 to PAROD.<br><br>**Controlling Authority :**<br>Kuala Lumpur ACC<br>(P) 133.4 MHz, (S) 132.55 MHz |
| ▲VAMPI<br>061056N 0973508E | 311°<br>131°<br>154 NM | FL 460<br>FL 275<br>MNM FL 280 | 20 | ↓ | | |
| ▲MEKAR<br>063014N 0962928E | 286°<br>106°<br>68 NM | | | | | |
| ▲NILAM<br>064523N 0955836E | 296°<br>116°<br>34 NM | | | | | |
| ▲IGOGU (FIR BDRY)<br>073101N 0942500E | 296°<br>116°<br>104 NM | | | ↑ | | |
| **N633 (RNP 10)** | | | | | | |
| ▲ KUALA LUMPUR DVOR/DME (VKL)<br>024328.0N 1014417.0E | | | | | | Longitudinal Separation of 10 Mins between RNAV equipped aircraft applying Mach Number Technique<br><br>**Controlling Authority:**<br>Kuala Lumpur ACC<br>(P) 123.75 MHz, (S) 132.75 MHz (Below FL 190 within Kuala Lumpur TMA - Lumpur Approach South - 119.45 MHz) |
| △ RUMID<br>022016N 1013627E | 199°<br>019°<br>24.4 NM | FL 460<br>6 500 FT ALT<br>MNM 7 000 FT | 20 | ↓ | | |
| ▲ SALAX (FIR BDRY)<br>021224N 1013343E | 199°<br>019°<br>8.3 NM | | | ↑ | | |
| **N884 (RNP 10)** | | | | | | |
| ▲ LENDA (FIR BDRY)<br>024124N 1043930E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft. |
| ▲ MERSING DVOR/DME (VMR)<br>022318N 1035218E | 069°<br>249°<br>50.6 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | ↑ | | |
| **N891 (RNP 10)** | | | | | | |
| ▲ PAPA UNIFORM DVOR/DME (PU)<br>012524N 1035600E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft.<br>All FPL for tfc opr on ATS RTE N891 shall include AFTN addressee WMFCZQZX |
| ▲ MANIM (FIR BDRY)<br>031430N 1040554E | 005°<br>185°<br>109 NM | FL 460<br>FL 155<br>MNM FL 160 | 20 | ↑ | ↓ | |

| Route Designator Significant Points Coordinates | Track (MAG) DIST (NM) | Upper limits / Lower limits Minimum Flight Altitude Airspace Classification (Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels Odd | Cruising levels Even | Remarks Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **N892 (RNP 10)** | | | | | | |
| ▲ KIBOL (FIR BDRY)<br>025224N 1042818E | | | | | | Longitudinal separation of 10 mins between RNAV equipped acft. |
| | 051°<br>28.1 NM | FL 460 / FL 135<br>MNM FL 140 | 20 | ↓ | | |
| ▲ PEKLA<br>023437N 1040618E | 051°<br>18 NM | | | | | |
| ▲ MERSING DVOR/DME (VMR)<br>022318N 1035218E | | | | | | |
| **P501 (RNP 10)** | | | | | | |
| ▲ ARAMA<br>013654N 1030712E | | | | | | **Controlling Authority :**<br>LUMPUR ACC<br>(P) 133.4 MHZ<br>(S) 132.55 MHZ<br><br>Singapore ACC<br>P 133.25 MHZ<br>S 135.8 MHZ |
| | 147°<br>25 NM | FL460 / 9 500 FT ALT<br>MNM 10 000 FT | 10 NM on the western side and 5 NM on the eastern side of line joining ARAMA to BOBAG | ↓ | | |
| ▲ ANBUS (FIR BDRY)<br>011556N 1032102E | | | | | | |
| **P574 (RNP 10)** | | | | | | |
| ▲ ANSAX (FIR BDRY)<br>060000N 0953029E | | | | | | Longitudinal Separation of 10 mins between RNAV equipped acft. applying Mach Number Technique.<br><br>**No Pre Departure Coordination (No PDC) arrangement :**<br>Flights departing from WMSA/ WMKK /WSSS will be cleared to FL 280 or FL 300. Succeeding acft cleared to same cruising level shall be provided at least 10 mins longitudinal separation with no closing speed. Additional longitudinal separation shall be provided by ATC for faster acft following the slower acft on the same route.<br>**Controlling Authority:**<br>Kuala Lumpur ACC:<br>(P) 133.4 MHz, (S) 132.55 MHz |
| | 299° / 119°<br>30 NM | FL 460 / FL 275<br>MNM FL 280 | 20 | ↓ | | |
| ▲ IGEBO<br>061409N 0950451E | 299° / 119°<br>45 NM | | | ↑ | | |
| ▲ NOPEK (FIR BDRY)<br>063614N 0942500E | | | | | | |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **P627 (RNP 10)** | | | | | | |
| ▲ RUSET (FIR BDRY)<br>074616N 0974257E | | | | | | |
| | 240°<br>060°<br>13.8 NM | FL 460<br>FL 240<br>MNM FL 250 | 20 | ↓ | | Longitudinal Separation of 10 Mins between RNAV equipped aircraft applying Mach Number Technique.. |
| ▲DUKUN<br>073856N 0973109E | | | | | | |
| | 240°<br>060°<br>44.2 NM | | | | | **Controlling Authority :**<br>Kuala Lumpur ACC<br>(P) 133.4 MHz, (S) 132.55 MHz |
| ▲LEKIR<br>071632N 0965243E | | | | | | |
| | 240°<br>060°<br>62.1 NM | | | | | |
| ▲NILAM<br>064523N 0955835E | | | | | | |
| | 240°<br>060°<br>21.0 NM | | | | | |
| ▲SANOB<br>063510N 0954009E | | | | | | |
| | 240°<br>060°<br>40.9 NM | | | | | |
| ▲ IGEBO<br>061409N 0950451E | | | | | | |
| | 240°<br>060°<br>28.5 NM | | | ↑ | | |
| ▲ POVUS (FIR BDRY)<br>060000N 0943958E | | | | | | |
| **P628 (RNP 10)** | | | | | | |
| ▲ IGREX<br>(WMFC/VOMF BDRY)<br>094328N 0942500E | | | | | | Longitudinal Separation of 10 mins between RNAV equipped acft. applying Mach Number Technique.<br>**Note 1 :**<br>**Unidirectional Westbound between GIVAL and IGREX - 24 hrs daily.**<br>**Note 2 :**<br>**Bi-directional between VPL and GIVAL - 24 hrs daily.**<br>**Note 3:**<br>**All westbound flights on P628 which are not subject to ATFM measures when transiting through KL FIR to destinations in South Asia, Middle East and Europe are required to file the FPL as follows:**<br>**(1) FL360 or above for flights estimates IGREX btn 1600 and 1930 UTC. Flights which are unable to comply during these periods are advised to use alternate route.**<br>**Controlling Authority :**<br>Kuala Lumpur ACC<br>(P) 133.4 MHz, (S) 132.55 MHz |
| | 301°<br>111 NM | FL 460<br>FL 275<br>MNM FL 280 | 20 | | | |
| ▲ MINAT<br>084618N 0960131E | | | | | | |
| | 301°<br>83 NM | | | | | |
| ▲ MAPSO<br>080330N 0971256E | | | | | | |
| | 324°<br>30 NM | | | | | |
| ▲ DUKUN<br>073856N 0973109E | | | | | | |
| | 324°<br>49 NM | | | ↑ | | |
| ▲ GIVAL<br>070000N 0980000E | | | | | | |
| | 290°<br>110°<br>111 NM | FL 460<br>10 000 FT ALT | 20 | ↓ | | |
| ▲ LANGKAWI<br>DVOR/DME (VPL)<br>062119.5N 0994450.6E | | | | | | |
| | | | | ↑ | | |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **P648** | | | | | | |
| ▲ KOTA KINABALU DVOR/DME (VJN)<br>055357.3N 1160202.3E | 218°<br>038°<br>79.5NM | FL 460<br>6500FT ALT | 20 | ↑ | ↓ | **Controlling Authority:**<br>1. VJN DVOR/DME to 80 DME VJN: Kinabalu ACC - 126.1 MHz.<br>2. 80 DME VJN to OKADA: Kinabalu ACC - 128.3 MHz.<br># Except that part of ATS route within Brunei TMA - Brunei Approach - 127.1 MHz. |
| ▲ 80 DME VJN<br>045105N 1151240E | 218°<br>038°<br>32NM | MNM 7000FT | | | | |
| ▲ BUTAX<br>041613N 1145232E | 218°<br>038°<br>38NM | | | | | |
| △ UDERO<br>035550N 1142940E | 218°<br>038°<br>90NM | FL 460<br>FL135<br>MNM FL140 | | | | |
| △ ALEMO<br>024545N 1133420E | 218°<br>038°<br>91NM | FL 460<br>FL245<br>MNM FL250 | | | | |
| ▲ OKADA (FIR BDRY)<br>013400N 1123800E | | | | | | |
| **Y331** | | | | | | |
| ▲ TAXUL (FIR BDRY)<br>035036N 1034036E | 253°<br>073°<br>57NM | FL 460<br>FL 245<br>MNM FL250 | 20 | ↓ | ↑ | **Controlling Authority :**<br>Kuala Lumpur ACC:<br>(P) 132.6 MHz, (S) 133.65 MHz |
| ▲ KUANTAN TMA BDRY WEST<br>033346N 1024545E | 253°<br>073°<br>45NM | FL 460<br>FL 145<br>MNM FL150 | | | | |
| △ PIBOS<br>032106N 1020316E | | | | | | |
| **Y332** | | | | | | |
| ▲ TAXUL (FIR BDRY)<br>035036N 1034036E | 192°<br>42NM | MNM FL250 | 20 | ↓ | | **Arrival RWY 32 from L642 M763**<br>**Controlling Authority :**<br>Lumpur Control<br>(P) 132.6 MHz<br>(S) 133.65 MHz<br>Singapore ACC<br>133.8 MHz |
| ▲ PADLI<br>030918N 1033133E | | | | | | |
| **Y333** | | | | | | |
| ▲ BUVAL (FIR BDRY)<br>033622N 1034342E | 024°<br>30 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | ↑ | | **Outbound only**<br>**Departure RWY 14 joining L629 M771**<br>**Controlling Authority :**<br>Lumpur Control<br>(P) 132.6 MHz<br>(S) 133.65 MHz<br>Singapore ACC<br>133.8 MHz |
| ▲ PADLI<br>030918N 1033133E | | | | | | |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **Y334** | | | | | | |
| ▲ DOVOL (FIR BDRY)<br>033048N 1034924E<br><br>▲ PADLI<br>030918N 1033133E | 220°<br>28 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | ↓ | | **Arrival RWY 32 from N892 L635**<br><br>Controlling Authority :<br>Lumpur Control<br>(P) 132.6 MHz<br>(S) 133.65 MHz<br><br>Singapore ACC<br>133.8 MHz |
| **Y335** | | | | | | |
| ▲ IDSEL (FIR BDRY)<br>032430N 1035518E<br><br>▲ PADLI<br>030918N 1033133E | 058°<br>238°<br>29 NM | FL 460<br>FL 245<br>MNM FL 250 | 20 | ↓<br>↑ | | **Arrival RWY 32 from M758**<br><br>**Departure RWY 14 joining M758**<br><br>**Controlling Authority :**<br>Lumpur Control<br>(P) 132.6 MHz<br>(S) 133.65 MHz<br><br>Singapore ACC<br>133.8 MHz |
| **Y336** | | | | | | |
| ▲ KETOD (FIR BDRY)<br>031042N 1040942E<br><br>▲ PADLI<br>030918N 1033133E<br><br>▲ ISTAN<br>030055N 1022853E | 088°<br>268°<br>38 NM<br><br>082°<br>262°<br>63 NM | FL 460<br>FL 245<br>MNM FL 250<br><br>FL 460<br>FL 135<br>MNM FL 140 | 20 | ↓<br>↑ | | **Arrival RWY 32 from M761**<br><br>**Departure RWY 14 joining M761**<br><br>**Controlling Authority :**<br>PADLI-ISTAN - Kuala Lumpur ACC:<br>(P) 132.6 MHz (S) 133.65 MHz<br><br>Singapore ACC<br>133.8 MHz |
| **Y337** | | | | | | |
| ▲ GIVAL<br>070000N 0980000E<br><br>▲ PENANG<br>DVOR/DME (VPG)<br>051646.7N 1001537.4E | 307°<br>127°<br>170 NM | FL 460<br>FL 280<br>MNM FL 280 | 20 | ↑ | | **Controlling Authority :**<br>VPG - A/VPL - Kuala Lumpur ACC:<br>(P) 132.8 MHz, (S) 133.55 MHz,<br>A/VPL - GIVAL - Kuala Lumpur ACC:<br>(P) 133.4 MHz, (S) 132.55 MHz<br><br>Westbound only<br>OPS hours: 1500 - 2030 UTC |

| Route Designator<br>Significant Points<br>Coordinates | Track<br>(MAG)<br>DIST (NM) | Upper limits<br>Lower limits<br>Minimum Flight Altitude<br>Airspace Classification<br>(Refer to ENR 1.4-1) | Lateral Limits (NM) | Cruising levels<br>Odd | Cruising levels<br>Even | Remarks<br>Controlling unit |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 6 |
| **Y338 (Conditional Route)** | | | | | | |
| ▲ LEKIR<br>071632N 0965243E | | | | | | |
| | 327°<br>147°<br>78NM | FL 460<br>FL 255<br>MNM FL 260 | 20 | ↑ | | Note 1: Unidirectional westbound between 1530 and 1930 UTC at **VAMPI**<br><br>Note 2: When successive ATFM westbound flights flight planned on N571/N877 arriving VAMPI between 1530 and 1930 UTC do not meet the required longitudinal separation requirements, some of these flights may be re-routed onto L510 via Y338 by KL ACC to allow the allocation of more optimal flight levels.<br><br>Controlling Authority:<br>Kuala Lumpur ACC - 133.4 MHZ |
| ▲ VAMPI<br>061056N 0973508E | | | | | | |
| **Y445** | | | | | | |
| ▲ LEDAM<br>045149N 1134706E | | | | | | **Controlling Authority :**<br>Kinabalu ACC |
| | 339°<br>159°<br>72 NM | FL 460<br>FL 195 | 20 | ↑ | ↓ | |
| ▲ ASISU<br>055906N 1132046E | | | | | | |
| **Y446** | | | | | | |
| ▲ KOTA KINABALU DVOR/DME (VJN)<br>055357.3N 1160202.3E | | | | | | Longitudinal separation of 10 minutes between RNAV equipped aircraft.<br>No Pre Departure Coordination (No PDC) arrangement: Flights departing from aerodromes with Kota Kinabalu FIR via RNAV route Y446 joining M768 and Y447 joining M758 will be cleared to FL300. Succeeding aircraft may be cleared to same level provided 10 minutes longitudinal separation using MNT exists with no closing speed.<br>Controlling Authority: Kinabalu ACC - 126.1 MHZ<br>Y447 is a diversionary route for RNAV route M758 between OLKIT and VJN DVOR avoiding Danger Area which is activated by NOTAM. |
| | 092°<br>272°<br>120 NM | FL 460<br>FL 135<br>MNM FL 140 | 20 | | ↓ | |
| ▲ PADLO (R272/120D VJN DVOR)<br>055752N 1140126E | | | | | | |
| | 092°<br>272°<br>41 NM | FL 460<br>FL 245<br>MNM FL 250 | | ↑ | | |
| ▲ ASISU (FIR BDRY)<br>055906N 1132046E | | | | | | |
| **Y447** | | | | | | |
| ▲ PADLO (R272/120D VJN DVOR)<br>055752N 1140126E | | | | | | |
| | 062°<br>242°<br>147 NM | FL 460<br>FL 245<br>MNM FL 250 | | ↑ | ↓ | |
| ▲ OLKIT (FIR BDRY)<br>045012N 1115118E | | | | | | |