



**Certificate of Compliance  
for the  
Calibration of Redflex HADECS3X Enforcement System**

We, Redflex Traffic Systems Pty Ltd of 31 Market Street, South Melbourne, Victoria, Australia 3205 hereby certify that the Redflex HADECS3X system comprising of the components as listed below, has been calibrated according to the Home Office Speed Meter Handbook (fourth edition) 15/05, and the timing of the secondary check has been verified and both comply with the terms of the specification for type approval.

|                                            |               |
|--------------------------------------------|---------------|
| <b>Location:</b>                           | 4331B - M1    |
| <b>Redflex HADECS3X NK7 serial number:</b> | HAD00236      |
| <b>Speed Radar - Serial number:</b>        | 37643-01260   |
| <b>Tracking Radar - Serial number:</b>     | 37642-00090   |
| <b>Date of calibration:</b>                | 17/02/2020    |
| <b>Certificate Number:</b>                 | CV10102291    |
| <b>Calibration carried out by:</b>         | Martin Watson |

**Signature:**

A handwritten signature in black ink, appearing to read 'M. Watson', written over a horizontal line.

**Checked By:**

Ron Moore

**Signature:**

A handwritten signature in black ink, appearing to read 'Ron Moore', written over a horizontal line.



**CERTIFICATION RECORD**

|                                        |                         |                                            |                    |
|----------------------------------------|-------------------------|--------------------------------------------|--------------------|
| <b>CALIBRATION CERTIFICATE NUMBER:</b> | <b>CV10102291</b>       | <b>REDFLEX HADECS3X NK7 SERIAL NUMBER:</b> | <b>HAD00236</b>    |
| <b>SR CERTIFICATE NUMBER:</b>          | <i>705044</i>           | <b>SERIAL NUMBER:</b>                      | <i>37643-01260</i> |
| <b>PRODUCT MODEL:</b>                  | AGD SR-340              |                                            |                    |
| <b>FIRMWARE VERSION:</b>               | <i>MI-096-1</i>         | <b>TEST SOFTWARE VERSION:</b>              | <i>1.3.1.7</i>     |
| <b>DATE OF CERTIFICATION:</b>          | <i>17 February 2020</i> | <b>RADAR TEMPERATURE (°C):</b>             | <i>35.88</i>       |
| <b>RELATIVE HUMIDITY (%):</b>          | <i>37.90</i>            | <b>AMBIENT TEMPERATURE (°C):</b>           | <i>23.40</i>       |

**CERTIFICATION TEST PROCEDURE REFERENCE:** See 1201-007 REDFLEXradar-Certification System User Manual

| <b>DESCRIPTION</b> | <b>COMMENT</b> | <b>Pass/Fail</b> |
|--------------------|----------------|------------------|
| EQUIPMENT TESTS    |                | <i>Pass</i>      |
| VISUAL INSPECTION  |                | <i>Pass</i>      |
| SPEED MEASUREMENTS |                | <i>Pass</i>      |

| <b>DESCRIPTION</b>                   | <b>MEASURED</b>    | <b>LIMITS</b>   |             |
|--------------------------------------|--------------------|-----------------|-------------|
| TRANSMIT FREQUENCY MEASUREMENT (GHz) | <i>24.09194043</i> | 24.080 - 24.120 | <i>Pass</i> |

**TRACEABILITY RECORDS OF INSTRUMENTS USED IN CERTIFICATION TEST**

| <b>INSTRUMENT DESCRIPTION:</b>           | <b>SERIAL NUMBER:</b> | <b>CALIBRATION CERTIFICATE NUMBER:</b> | <b>NEXT CALIBRATION DUE DATE:</b> |
|------------------------------------------|-----------------------|----------------------------------------|-----------------------------------|
| TEKTRONIX AFG3022B<br>Function Generator | <i>C014082</i>        | <i>20010679</i>                        | <i>15th January 2021</i>          |
| PENDULUM CNT-90XL<br>Frequency Counter   | <i>413964</i>         | <i>3208860001</i>                      | <i>16th January 2021</i>          |
| FLUKE 971<br>Temperature Humidity Meter  | <i>35181596</i>       | <i>20010680</i>                        | <i>15th January 2021</i>          |
| AGD MC-116<br>Target Simulator           | <i>106553-0002</i>    | <i>116055</i>                          | <i>21st January 2021</i>          |

|                                           |                      |                                     |                         |
|-------------------------------------------|----------------------|-------------------------------------|-------------------------|
| <b>CERTIFICATION TEST CARRIED OUT BY:</b> | <b>Martin Watson</b> | <b>NEXT CERTIFICATION TEST DUE:</b> | <b>15 February 2021</b> |
| <b>CHECKED BY</b>                         | <b>Ron Moore</b>     | <i>Template V20190304RX (SR)</i>    |                         |



**SPEED MEASUREMENT**

|                                        |                   |                                            |                 |
|----------------------------------------|-------------------|--------------------------------------------|-----------------|
| <b>CALIBRATION CERTIFICATE NUMBER:</b> | <b>CV10102291</b> | <b>REDFLEX HADECS3X NK7 SERIAL NUMBER:</b> | <b>HAD00236</b> |
|----------------------------------------|-------------------|--------------------------------------------|-----------------|

**SERIAL NO: 37643-01260**

| Simulated Speed (mph) | Measured Speed (mph) |        |          |        | Speed Limits (mph) | Pass/Fail |
|-----------------------|----------------------|--------|----------|--------|--------------------|-----------|
|                       | Advancing            |        | Receding |        |                    |           |
|                       | Min                  | Max    | Min      | Max    |                    |           |
| 13.05                 | 13.05                | 13.05  | 13.05    | 13.05  | 12.74 - 13.36      | Pass      |
| 18.64                 | 18.58                | 18.63  | 18.58    | 18.63  | 18.33 - 18.95      | Pass      |
| 24.85                 | 24.85                | 24.85  | 24.85    | 24.85  | 24.54 - 25.17      | Pass      |
| 31.07                 | 31.01                | 31.03  | 31.01    | 31.03  | 30.76 - 31.38      | Pass      |
| 37.28                 | 37.28                | 37.28  | 37.28    | 37.28  | 36.97 - 37.59      | Pass      |
| 43.50                 | 43.43                | 43.43  | 43.43    | 43.44  | 43.19 - 43.81      | Pass      |
| 49.71                 | 49.71                | 49.71  | 49.71    | 49.71  | 49.40 - 50.02      | Pass      |
| 55.92                 | 55.86                | 55.86  | 55.86    | 55.86  | 55.61 - 56.23      | Pass      |
| 62.14                 | 62.07                | 62.14  | 62.14    | 62.14  | 61.83 - 62.45      | Pass      |
| 68.35                 | 68.29                | 68.29  | 68.29    | 68.29  | 68.04 - 68.66      | Pass      |
| 74.56                 | 74.50                | 74.56  | 74.50    | 74.56  | 74.25 - 74.88      | Pass      |
| 80.78                 | 80.72                | 80.72  | 80.72    | 80.72  | 80.47 - 81.09      | Pass      |
| 86.99                 | 86.93                | 86.99  | 86.93    | 86.98  | 86.68 - 87.30      | Pass      |
| 93.21                 | 93.14                | 93.14  | 93.14    | 93.14  | 92.89 - 93.52      | Pass      |
| 99.42                 | 99.36                | 99.38  | 99.36    | 99.38  | 99.11 - 99.73      | Pass      |
| 105.63                | 105.57               | 105.57 | 105.57   | 105.57 | 105.32 - 105.94    | Pass      |
| 111.85                | 111.78               | 111.78 | 111.78   | 111.78 | 111.54 - 112.16    | Pass      |
| 118.06                | 118.00               | 118.00 | 118.00   | 118.00 | 117.75 - 118.37    | Pass      |
| 124.27                | 124.21               | 124.21 | 124.21   | 124.21 | 123.96 - 124.58    | Pass      |
| 136.70                | 136.64               | 136.64 | 136.58   | 136.64 | 136.39 - 137.01    | Pass      |
| 149.13                | 149.00               | 149.05 | 149.00   | 149.05 | 148.82 - 149.44    | Pass      |
| 161.56                | 161.43               | 161.44 | 161.43   | 161.44 | 161.25 - 161.87    | Pass      |
| 173.98                | 173.86               | 173.86 | 173.86   | 173.86 | 173.67 - 174.29    | Pass      |
| 186.41                | 186.29               | 186.29 | 186.29   | 186.29 | 186.10 - 186.72    | Pass      |

Template V20190304RX (SR)



**CERTIFICATION RECORD**

|                                                                       |                                                            |                                            |                                   |
|-----------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|-----------------------------------|
| <b>CALIBRATION CERTIFICATE NUMBER:</b>                                | <b>CV10102291</b>                                          | <b>REDFLEX HADECS3X NK7 SERIAL NUMBER:</b> | <b>HAD00236</b>                   |
| <b>TR CERTIFICATE NUMBER:</b>                                         | <i>3170098</i>                                             | <b>SERIAL NUMBER:</b>                      | <i>37642-00090</i>                |
| <b>PRODUCT MODEL:</b>                                                 | AGD TR-317                                                 |                                            |                                   |
| <b>BIOS VERSION:</b>                                                  | <i>MI-135-7</i>                                            | <b>DSP SOFTWARE VERSION:</b>               | <i>MI-144-9</i>                   |
| <b>PIC FIRMWARE VERSION:</b>                                          | <i>N/A</i>                                                 | <b>TEST SOFTWARE VERSION:</b>              | <i>1.3.1.7</i>                    |
| <b>DATE OF CERTIFICATION:</b>                                         | <i>17 February 2020</i>                                    | <b>RADAR TEMPERATURE (°C):</b>             | <i>N/A</i>                        |
| <b>RELATIVE HUMIDITY (%):</b>                                         | <i>36.60</i>                                               | <b>AMBIENT TEMPERATURE (°C):</b>           | <i>23.40</i>                      |
| <b>CALIBRATED BANDWIDTH (MHz):</b>                                    | <i>41.20</i>                                               |                                            |                                   |
| <b>CERTIFICATION TEST PROCEDURE REFERENCE:</b>                        | See 1201-007 REDFLEXradar-Certification System User Manual |                                            |                                   |
| <b>DESCRIPTION</b>                                                    | <b>COMMENT</b>                                             |                                            |                                   |
| EQUIPMENT TESTS                                                       |                                                            |                                            | <i>Pass</i>                       |
| VISUAL INSPECTION                                                     |                                                            |                                            | <i>Pass</i>                       |
| SPEED AND RANGE MEASUREMENTS                                          |                                                            |                                            | <i>Pass</i>                       |
| <b>DESCRIPTION</b>                                                    | <b>MEASURED</b>                                            | <b>LIMITS</b>                              | <b>PASS/FAIL</b>                  |
| TRANSMIT FREQUENCY MEASUREMENT (GHz)                                  | <i>24.12453506</i>                                         | 24.123 - 24.127                            | <i>Pass</i>                       |
| BANDWIDTH MEASUREMENT (MHz)                                           | <i>42.00</i>                                               | 39.00 - 44.00                              | <i>Pass</i>                       |
| <b>TRACEABILITY RECORDS OF INSTRUMENTS USED IN CERTIFICATION TEST</b> |                                                            |                                            |                                   |
| <b>INSTRUMENT DESCRIPTION:</b>                                        | <b>SERIAL NUMBER:</b>                                      | <b>CALIBRATION CERTIFICATE NUMBER:</b>     | <b>NEXT CALIBRATION DUE DATE:</b> |
| TEKTRONIX AFG3022B Function Generator                                 | <i>C014082</i>                                             | <i>20010679</i>                            | <i>15th January 2021</i>          |
| PENDULUM CNT-90XL Frequency Counter                                   | <i>413964</i>                                              | <i>3208860001</i>                          | <i>16th January 2021</i>          |
| FLUKE 971 Temperature Humidity Meter                                  | <i>17580804</i>                                            | <i>20010680</i>                            | <i>15th January 2021</i>          |
| AGD MC-116 Target Simulator                                           | <i>117117-00017</i>                                        | <i>116055</i>                              | <i>21st January 2021</i>          |
| <b>CERTIFICATION TEST CARRIED OUT BY:</b>                             | <b>Martin Watson</b>                                       | <b>NEXT CERTIFICATION TEST DUE:</b>        | <b>15 February 2021</b>           |
| <b>CHECKED BY:</b>                                                    | <b>Ron Moore</b>                                           | <b>Template V20190304RX (TR)</b>           |                                   |



### SPEED AND RANGE MEASUREMENT

|                                        |                   |                                            |                 |
|----------------------------------------|-------------------|--------------------------------------------|-----------------|
| <b>CALIBRATION CERTIFICATE NUMBER:</b> | <b>CV10102291</b> | <b>REDFLEX HADECS3X NK7 SERIAL NUMBER:</b> | <b>HAD00236</b> |
|----------------------------------------|-------------------|--------------------------------------------|-----------------|

**SERIAL NO: 37642-00090**

| Simulated Range (m) | Simulated Speed (mph) | Measured Advancing |             | Measured Receding |             | Range Limits (m) | Speed Limits (mph) | Pass/Fail |
|---------------------|-----------------------|--------------------|-------------|-------------------|-------------|------------------|--------------------|-----------|
|                     |                       | Range (m)          | Speed (mph) | Range (m)         | Speed (mph) |                  |                    |           |
| 23.80               | 31.07                 | 23.92              | 31.07       | 23.78             | 31.01       | 22.10 - 25.50    | 30.76 - 31.38      | Pass      |
| 23.80               | 62.14                 | 24.00              | 62.17       | 23.70             | 62.11       | 22.10 - 25.50    | 61.83 - 62.45      | Pass      |
| 23.80               | 93.21                 | 24.10              | 93.33       | 23.60             | 93.27       | 22.10 - 25.50    | 92.89 - 93.52      | Pass      |
| 23.80               | 124.27                | 24.11              | 124.34      | 23.60             | 124.34      | 22.10 - 25.50    | 123.96 - 124.58    | Pass      |
| 23.80               | 155.34                | 24.11              | 155.36      | 23.59             | 155.34      | 22.10 - 25.50    | 155.03 - 155.65    | Pass      |
| 23.80               | 186.41                | 24.06              | 186.47      | 23.67             | 186.41      | 22.10 - 25.50    | 186.10 - 186.72    | Pass      |
| 51.00               | 7.46                  | 51.10              | 7.56        | 51.10             | 7.46        | 49.30 - 52.70    | 7.15 - 7.77        | Pass      |
| 51.00               | 12.43                 | 51.12              | 12.49       | 51.10             | 12.37       | 49.30 - 52.70    | 12.12 - 12.74      | Pass      |
| 51.00               | 18.64                 | 51.16              | 18.75       | 51.05             | 18.64       | 49.30 - 52.70    | 18.33 - 18.95      | Pass      |
| 51.00               | 24.85                 | 51.20              | 24.92       | 51.01             | 24.85       | 49.30 - 52.70    | 24.54 - 25.17      | Pass      |
| 51.00               | 31.07                 | 51.20              | 31.07       | 51.00             | 31.01       | 49.30 - 52.70    | 30.76 - 31.38      | Pass      |
| 51.00               | 37.28                 | 51.20              | 37.34       | 51.00             | 37.22       | 49.30 - 52.70    | 36.97 - 37.59      | Pass      |
| 51.00               | 43.50                 | 51.20              | 43.62       | 51.00             | 43.50       | 49.30 - 52.70    | 43.19 - 43.81      | Pass      |
| 51.00               | 49.71                 | 51.21              | 49.77       | 51.00             | 49.71       | 49.30 - 52.70    | 49.40 - 50.02      | Pass      |
| 51.00               | 55.92                 | 51.26              | 55.92       | 50.96             | 55.86       | 49.30 - 52.70    | 55.61 - 56.23      | Pass      |
| 51.00               | 62.14                 | 51.30              | 62.20       | 50.91             | 62.07       | 49.30 - 52.70    | 61.83 - 62.45      | Pass      |
| 51.00               | 68.35                 | 51.30              | 68.48       | 50.90             | 68.39       | 49.30 - 52.70    | 68.04 - 68.66      | Pass      |
| 51.00               | 74.56                 | 51.30              | 74.63       | 50.90             | 74.56       | 49.30 - 52.70    | 74.25 - 74.88      | Pass      |
| 51.00               | 80.78                 | 51.30              | 80.78       | 50.90             | 80.72       | 49.30 - 52.70    | 80.47 - 81.09      | Pass      |
| 51.00               | 86.99                 | 51.30              | 87.05       | 50.90             | 86.93       | 49.30 - 52.70    | 86.68 - 87.30      | Pass      |
| 51.00               | 93.21                 | 51.32              | 93.33       | 50.90             | 93.26       | 49.30 - 52.70    | 92.89 - 93.52      | Pass      |
| 51.00               | 99.42                 | 51.34              | 99.48       | 50.88             | 99.42       | 49.30 - 52.70    | 99.11 - 99.73      | Pass      |
| 51.00               | 105.63                | 51.38              | 105.64      | 50.85             | 105.57      | 49.30 - 52.70    | 105.32 - 105.94    | Pass      |
| 51.00               | 111.85                | 51.39              | 111.91      | 50.84             | 111.78      | 49.30 - 52.70    | 111.54 - 112.16    | Pass      |
| 51.00               | 118.06                | 51.39              | 118.18      | 50.82             | 118.12      | 49.30 - 52.70    | 117.75 - 118.37    | Pass      |
| 51.00               | 124.27                | 51.39              | 124.34      | 50.81             | 124.27      | 49.30 - 52.70    | 123.96 - 124.58    | Pass      |
| 51.00               | 136.70                | 51.39              | 136.76      | 50.81             | 136.64      | 49.30 - 52.70    | 136.39 - 137.01    | Pass      |
| 51.00               | 149.13                | 51.39              | 149.25      | 50.81             | 149.18      | 49.30 - 52.70    | 148.82 - 149.44    | Pass      |
| 51.00               | 161.56                | 51.38              | 161.62      | 50.83             | 161.49      | 49.30 - 52.70    | 161.25 - 161.87    | Pass      |
| 51.00               | 173.98                | 51.34              | 174.11      | 50.88             | 174.05      | 49.30 - 52.70    | 173.67 - 174.29    | Pass      |
| 51.00               | 186.41                | 51.30              | 186.47      | 50.90             | 186.36      | 49.30 - 52.70    | 186.10 - 186.72    | Pass      |
| 81.60               | 31.07                 | 81.84              | 31.07       | 81.70             | 30.98       | 79.90 - 83.30    | 30.76 - 31.38      | Pass      |
| 81.60               | 62.14                 | 81.90              | 62.26       | 81.60             | 62.04       | 79.90 - 83.30    | 61.83 - 62.45      | Pass      |
| 81.60               | 93.21                 | 82.00              | 93.33       | 81.51             | 93.21       | 79.90 - 83.30    | 92.89 - 93.52      | Pass      |
| 81.60               | 124.27                | 82.01              | 124.40      | 81.50             | 124.27      | 79.90 - 83.30    | 123.96 - 124.58    | Pass      |
| 81.60               | 155.34                | 82.02              | 155.40      | 81.50             | 155.28      | 79.90 - 83.30    | 155.03 - 155.65    | Pass      |
| 81.60               | 186.41                | 81.95              | 186.54      | 81.56             | 186.35      | 79.90 - 83.30    | 186.10 - 186.72    | Pass      |

*Template V20190304RX (TR)*