



## New Product EP/PP/ MP Reliability Test Items

| Item | Stage | Test Items                                                | Sample QTY | Apply to the model             | Reference standard                                                                       |
|------|-------|-----------------------------------------------------------|------------|--------------------------------|------------------------------------------------------------------------------------------|
| 1    |       | MIC sensitivity test                                      | 32         | ION unit                       | UL217 42/UL268 31<br>EN14604 5.2/5.4<br>AS3786 5.3                                       |
|      |       | LTC sensitivity test                                      | 32         | PE, Photo Combo unit           |                                                                                          |
| 2    |       | Heat sensitivity test                                     | 32         | Heat Function Unit             | UL521 19<br>UL539 14                                                                     |
| 3    |       | CO sensitivity test                                       | 32         | Unit with CO function          | UL2034 41<br>EN50291 6.3.4                                                               |
| 4    |       | light output test                                         | 32         | strobe light unit              | UL1971 27                                                                                |
| 5    |       | Rate-of-Rise Operation Test                               | 32         | Heat Function Unit             | UL521 23                                                                                 |
| 6    |       | Sensitivity directionality test                           | 5          | ION, PE, ION/PE Combo unit     | UL217 43/UL268 33<br>EN14604 5.3<br>AS3786 5.2                                           |
| 7    |       | Flow test (Velocity-Sensitivity Test)                     | 5          | ION, PE, ION/PE Combo unit     | UL217 44/UL268 34<br>EN14604 5.5<br>AS3786 5.5                                           |
| 8    |       | Hush sensitivity test (Alarm silenced test)               | 5          | ION, PE, ION/PE Combo unit     | UL217 40<br>EN14604 5.20<br>AS3786 5.23<br>EN50291 5.7                                   |
| 9    |       | Sensitivity Test Feature                                  | 5          | ION, PE, ION/PE Combo unit     | UL217 42.7<br>UL2034 43                                                                  |
| 10   |       | Audibility test                                           | 32         | All units with sound output    | UL217 84/UL268 70<br>UL2034 65/UL539 23<br>EN14604 5.17<br>EN50291 6.3.16<br>AS3786 5.19 |
| 11   |       | Normal operation                                          | 32         | All unit                       | CFS                                                                                      |
| 12   |       | Alarm current(Ia)、Standby current(Is) test                | 32         | All unit                       | CFS                                                                                      |
| 13   |       | Static discharge test                                     | 5          | All unit                       | UL217 68/UL2034 59<br>UL268 56 EN14604 5.14<br>AS3786 5.15b                              |
| 14   |       | Low voltage (Battery) test                                | 32         | All unit with battery          | UL217 56.2/UL268 45.2<br>UL2034 39.2<br>EN14604 5.16<br>EN50291 6.3.17<br>AS3786 5.17    |
| 15   |       | Low battery voltage performance test                      | 5          | All unit with battery          | UL217 86.3<br>UL2034 64<br>EN14604 4.15<br>EN50291 6.3.18                                |
| 16   |       | Interconnection test                                      | 24         | Unit with I/O function         | UL217 38<br>UL2034 38.5<br>EN14604 5.19<br>EN50291 6.3.21                                |
| 17   |       | Battery polarity reverse test                             | 10         | Unit with battery              | UL217 78/UL2034 69<br>EN14604 5.22<br>EN50291 6.3.19<br>AS3786 5.23                      |
| 18   |       | Power on-off test                                         | 128        | All unit                       | UL217 47                                                                                 |
| 19   |       | Rechargeable battery charging and discharging performance | 5          | Unit with rechargeable battery | CFS<br>EN50291 5.14.1                                                                    |
| 20   |       | Jarring(single)                                           | 5          | ION,PE,CO unit                 | UL217 62/UL2034 62<br>UL268 50<br>EN14604 5.11<br>AS3786 5.11                            |
| 21   |       | Vibration test(single)                                    | 5          | ION,PE,CO unit                 | UL217 59/UL2034 60<br>UL268 48<br>EN14604 5.12<br>AS3786 5.12 5.13<br>EN 50291 6.3.102.1 |
| 22   |       | Drop test(single)                                         | 5          | All unit                       | ISTA<br>EN50291 2018 6.3.15                                                              |



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| 23   | EP/PP/MP | Dazzling test                                         | 5          | PE, Photo Combo unit                       | EN14604 5.6<br>AS3786 5.6                                                  |
| 24   |          | Life testing                                          | 32         | All unit                                   | UL217 86<br>UL2034 56/57<br>EN14604 5.21                                   |
| 25   |          | Connector mating and unmating test(100 times)         | 5          | All unit with connector feature            | CFS                                                                        |
| 26   |          | Bracket assembling test                               | 5          | All unit with trim plate                   | CFS                                                                        |
| 27   |          | Structure interference inspection                     | 3          | All unit                                   | CFS                                                                        |
| 28   |          | Button life test(1500 times)                          | 5          | All unit with button                       | CFS                                                                        |
| 29   |          | Battery carriage or door reliability test (100 times) | 5          | All unit with new battery carriage or door | CFS                                                                        |
| 30   |          | Battery clip deformation test (100 times) & PTT test  | 5          | Unit with new battery clip structure       | CFS                                                                        |
| 31   |          | High temperature/high humidity test                   | 20         | All unit                                   | UL217 64/UL2034 49<br>UL268 52/EN14604 5.9<br>EN50291 6.3.23<br>AS3786 5.9 |
| 32   |          | Temperature stability test                            | 10         | All unit                                   | UL217 47/UL2034 44<br>UL 268 38<br>EN14604 annex L<br>AS3786 5.14          |
| 33   |          | Aging test(70°C /28 Days )                            | 5          | Unit with plastic changed or new design    | UL217 79.2<br>UL2034 66.2                                                  |
| 34   |          | Survivability(121°C/4 Minutes)                        | 5          | All unit                                   | UL217 82<br>UL268 69                                                       |
| 35   |          | Walk-in test                                          | 32         | All unit                                   | CFS                                                                        |
| 36   |          | Abnormal operation test                               | 32         | All unit                                   | CFS                                                                        |
| 37   |          | EEPROM check                                          | 5          | product with EEPROM                        | CFS                                                                        |
| 38   |          | Environmental Test                                    | 32         | product with EST-3 connected               | CFS                                                                        |
| 39   |          | Humidity Test                                         | 32         | ES product                                 | CFS                                                                        |
| 40   |          | Spring Height and Elastic force test                  | 32         | Base with spring model                     | CFS                                                                        |
| 41   |          | Torque force test                                     | 32         | All trim plate                             | CFS                                                                        |
| 42   |          | Endurance Test                                        | 32         | All unit                                   | UL217 71/UL268 59<br>EN14604 5.18<br>AS3786 5.19                           |
| 43   |          | Dust Test                                             | 5          | ION, PE, ION/PE Combo unit                 | UL217 69<br>UL268 57                                                       |
| 44   |          | Dry heat                                              | 10         | ION, PE, ION/PE Combo unit                 | EN14604 5.7<br>AS3786 5.7                                                  |
| 45   |          | Cold (operational)                                    | 10         | ION, PE, ION/PE Combo unit                 | EN14604 5.8<br>AS3786 5.8                                                  |
| 46   |          | Stack effect test                                     | 5          | All AC unit                                | UL2017 45<br>UL268 35                                                      |
| 47   |          | RF connect function                                   | 24         | ALL unit with RF function                  | CFS                                                                        |
| 48   |          | End of life test                                      | 5          | All unit                                   | UL217 41.8<br>UL 268 30.6                                                  |
| 49   |          | RF distance test                                      | 4          | All RF model                               | CFS                                                                        |
| 50   |          | Under voltage/ Overvoltage test                       | 5          | All unit                                   | UL217 57<br>UL2034 56/57<br>UL268 46<br>EN50291 6.3.10                     |



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| 51   |       | Low frequency base vibration test      | 5          | All ES model                                              | CFS                                                                                           |
| 52   |       | FW Regression test                     | 3          | All unit                                                  | CFS                                                                                           |
| 53   |       | PCBA Strain gauge test                 | 2          | All unit                                                  | CFS                                                                                           |
| 54   |       | Unpowered storage                      | 32         | EN standard Unit with CO function                         | EN50291 6.1.5                                                                                 |
| 55   |       | Alarm during warm up time              | 10         | EN standard Unit with CO function                         | EN50291 6.3.5                                                                                 |
| 56   |       | Temperature effect                     | 10         | EN standard Unit with CO function                         | EN50291 6.3.7                                                                                 |
| 57   |       | Humidity effect                        | 10         | EN standard Unit with CO function                         | EN50291 6.3.8                                                                                 |
| 58   |       | Stability to low humidity test         | 10         | All CO unit                                               | UL217 64.2<br>UL2034 49.2<br>EN50291 6.3.24                                                   |
| 59   |       | Dielectric Voltage-Withstand Test      | 3          | All AC unit                                               | UL217 77<br>UL268 64<br>UL2034 54<br>UL521 34<br>UL1971 39                                    |
| 60   |       | RF compatibility test                  | 24         | Legacy&Newly software products coexist in the marketplace | CFS                                                                                           |
| 61   |       | Anti-dismantling function verification | 5          | All unit                                                  | CFS                                                                                           |
| 62   |       | Reliability test                       | 170        | All unit                                                  | UL217_9 7                                                                                     |
| 63   |       | Ion contaminated test                  | 2          | All PCBA unit                                             | CFS                                                                                           |
| 64   |       | Firmware Life Test                     | 2          | All unit                                                  | CFS                                                                                           |
| 65   |       | CO Long term stability                 | 2          | All CO unit                                               | UL2034_4 41.1.2<br>EN 50291 6.3.14                                                            |
| 66   |       | 16ppm Ramp Test                        | 5          | All CO unit                                               | UL2034_4 41.3.5                                                                               |
| 67   |       | Circuit Measurement Test               | 32         | All unit                                                  | UL217_9 56                                                                                    |
| 68   |       | Osprey Outdoor test                    | 32         | outdoor model                                             | CFS                                                                                           |
| 75   |       | Electric Shock Current Test            | 5          | All UL unit                                               | UL217_9 75<br>UL2034_4 70                                                                     |
| 76   |       | Standardized alarm signal              | 5          | All unit                                                  | UL217_9 38.2<br>UL2034_4 5.3<br>EN14604_2005 5.17<br>AS378:2023 5.19                          |
| 77   |       | CO 5000ppm Test                        | 5          | All EN CO unit                                            | EN50291_2018 6.3.6                                                                            |
| 78   |       | CO Air velocity test                   | 5          | All EN CO unit                                            | EN50291_2018 6.3.9                                                                            |
| 79   |       | Field-wiring leads                     | 5          | All unit                                                  | UL217_9 80.4<br>UL 2034_4 71.3<br>EN14604_2005 4.14<br>EN50291_2018 6.3.20<br>AS378:2023 4.16 |
| 80   |       | Insect guards aperture test            | 5          | All smoke unit                                            | UL217_9 17.5<br>UL268 7.4<br>EN14604_2005 4.16<br>AS378:2023 4.22                             |
| 81   |       | LED visibility Test                    | 2          | All AS unit                                               | AS3786:2023 4.8                                                                               |
| 82   |       | Discharge function test                | 5          | All 10Y unit                                              | CFS                                                                                           |
| 83   |       | 100 times button Test                  | 20         | All unit                                                  | CFS                                                                                           |