ESU

## Sound Project Overview

| Project-Name:                 |                          | Project-No.:                 |  |
|-------------------------------|--------------------------|------------------------------|--|
| ROCO BR232 Ludmilla           |                          | 11415                        |  |
| Item-No.:                     |                          | Order-No.:                   |  |
|                               |                          |                              |  |
| Customer:                     | Contact <sub> </sub>     | person:                      |  |
| ROCO                          |                          |                              |  |
|                               | TelNo.                   | :                            |  |
|                               | Email:                   |                              |  |
|                               | Liliali.                 |                              |  |
|                               |                          |                              |  |
| Project start: 2005-10-04     | Project status: Finished | Date of approval: 2005-10-28 |  |
|                               | Titistieu                | 2003 10 20                   |  |
| OEM-Manual required           |                          |                              |  |
| Sound recording documentation | on                       |                              |  |
| Origin of the sound:          |                          | Recording date:              |  |
| Origin of the sound.          |                          | Recording date.              |  |
| 10401 LS2                     |                          |                              |  |
| 10401 LS2  Comments:          |                          |                              |  |
| Comments:                     |                          |                              |  |
|                               |                          |                              |  |
| Comments:                     |                          |                              |  |

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| Deco                             | der information                 |                      |                    |
|----------------------------------|---------------------------------|----------------------|--------------------|
| Decode                           | ertype: Loudspeaker:            | (                    | Configuration:     |
| LokSou                           |                                 |                      | ga.a               |
| LONSON                           | and 5                           |                      |                    |
| Firmwa                           | re-Version:                     |                      |                    |
| 0.0.53                           |                                 |                      |                    |
| 0.0.55                           | 52                              |                      |                    |
| Decod                            | der Setup                       |                      |                    |
|                                  |                                 | and a realist        | Basely continue    |
| Addres                           | <del></del>                     | rotocols:            | Break sections:    |
| 3                                | 52 DO                           | C  Motorola  C  C  M | DCC ⊠<br>Märklin □ |
|                                  | DO                              | CC Selectrix         | _                  |
| Primo r                          | nover sound description:        |                      |                    |
| rillie                           | nover sound description.        |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
| Functio                          | on keys:                        |                      |                    |
| FO                               | Light on/off                    |                      |                    |
| F0<br>F1<br>F2<br>F3<br>F4<br>F5 | Sound on/off                    |                      |                    |
| F2                               | Airhorn/Whistle                 |                      |                    |
| F3                               | Airhorn2/Whistle2<br>Compressor |                      |                    |
| F5                               | Special feature                 |                      |                    |
| F6                               | Shunting Mode                   |                      |                    |
| F7                               |                                 |                      |                    |
| F8                               |                                 |                      |                    |
| F9<br>F10                        |                                 |                      |                    |
| F10                              |                                 |                      |                    |
| F12                              |                                 |                      |                    |
| F13                              |                                 |                      |                    |
| F14                              |                                 |                      |                    |
| F15                              |                                 |                      |                    |
| F16<br>F17                       |                                 |                      |                    |
| F18                              |                                 |                      |                    |
| F19                              |                                 |                      |                    |
| F20                              |                                 |                      |                    |
| Special                          | features:                       |                      |                    |
| F5: Pre                          |                                 |                      |                    |
| JI J. FIE                        | .33IGI (                        |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |
|                                  |                                 |                      |                    |

Sound Project Overview

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| CV-Va  | alues |                      |      |        |       |                   |       |        |       |          |      |
|--------|-------|----------------------|------|--------|-------|-------------------|-------|--------|-------|----------|------|
| CV     | DEC   |                      | HEX  | CV     | DEC   |                   | HEX   | CV     | DEC   |          | HEX  |
| 11     |       | 00000011             |      |        |       | 00100001 00001111 |       |        |       | 00000100 |      |
| 11     |       | 00000011             |      |        |       | 00001111          |       |        |       | 00000000 |      |
| 1 1    |       | 00000100             |      |        |       | 00001111          |       |        |       | 00000000 |      |
|        |       | 00110100             |      |        |       | 00001111          |       |        |       | 00000000 |      |
| 1 1    |       | 00011010             |      |        |       | 00000000          |       |        |       | 00000011 |      |
|        |       | 00000000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| 1 1    |       | 11000000             |      |        |       | 01101110          |       |        |       | 00000000 |      |
|        |       | 00000000             |      |        |       | 01111111          |       |        |       | 00000000 |      |
|        |       | 00000000<br>00000110 |      |        |       | 00110010          |       |        |       | 00000000 |      |
|        |       | 00000110             |      |        |       | 01111111          |       |        |       | 00000000 |      |
|        |       | 00000011             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00000010             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00100010             |      | _      |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00011000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 01000000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00000000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00000001             |      |        |       | 00000101          |       |        |       | 00000000 |      |
|        |       | 00100000<br>00110100 |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00011010             |      |        |       | 00000101          |       |        |       | 00000000 |      |
|        |       | 00101000             |      | _      |       | 00000001          |       |        |       | 00000000 |      |
|        |       | 01000000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00000111             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 00000000             |      |        |       | 000000000         |       |        |       | 00000000 |      |
|        |       | 00000101             |      |        |       | 00000000          |       | CV 205 | = 000 | 00000000 | 0x00 |
|        |       | 00001000             |      | _      |       | 00000000          |       |        |       | 00000000 |      |
| 1 1    |       | 00001011             |      |        |       | 00000100          |       |        |       | 00000000 |      |
| 1 1    |       | 00001111             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| CV 073 | = 022 | 00010110             | 0x16 | CV 151 | = 004 | 00000100          | 0x00  |        |       | 00000000 |      |
|        |       | 00011010             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| 1 1    |       | 00011110             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| 11     |       | 00101000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| CV 078 | = 046 | 00101110             | 0x2E | CV 156 | = 000 | 00000000          | 0x00  | CV 215 | = 000 | 00000000 | 0x00 |
| 11     |       | 00110100             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| 1 1    |       | 00111010 01000010    |      |        |       | 00000001          |       |        |       | 00000000 |      |
|        |       | 01000010             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 01010010             |      |        |       | 00000010          |       | CV 220 | = 000 | 00000000 | 0x00 |
|        |       | 01011010             |      | _      |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 01100100<br>01101110 |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 01111110             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 10001000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 10011000             |      |        |       | 00000011          |       |        |       | 00000000 |      |
|        |       | 10101000             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 10111100             |      |        |       | 00000000          |       |        |       | 00000000 |      |
| 11     |       | 11100110             |      |        |       | 00000000          |       |        |       | 00000000 |      |
|        |       | 11111111             |      |        |       | 00000000          |       |        |       |          |      |
| CV 095 | = 000 | 00000000             | 0x00 |        |       | 00000100          |       |        |       |          |      |
|        |       |                      |      |        |       | 00000000          |       |        |       |          |      |
|        |       |                      |      | 2 173  | 300   | 3000000           | 2,000 |        |       |          |      |
|        |       |                      |      |        |       |                   |       |        |       |          |      |
|        |       |                      |      |        |       |                   |       |        |       |          |      |
|        |       |                      |      |        |       |                   |       |        |       |          |      |
| 1 -    |       |                      |      |        |       |                   |       |        |       |          |      |