DATA SHEET TEXTILE HD-EMG GRID

The TMSi Textile HD-EMG Grid is designed for the acquisition of HD-EMG signals. The product is intended to be used by research professionals in a laboratory environment.

This datasheet contains information on the HD-EMG adapter cable (REF 95-0525-2032-0 or 95-0525-2064-0) and a varying number of Textile HD-EMG grids (REF 50-xxx3-04yy, where the x and y determine different variants described in this datasheet). The HD-EMG adapter cable and Textile HD-EMG grids are to be used in combination with the SAGA amplifier.

Various layouts for the Textile HD-EMG grid are available. For an overview of all available types, please refer to the different pages that are included as supplementary material to this datasheet. Please note the naming of the grids. The grid's name (e.g., 4-8-L) is to be used in combination with the TMSi Python interface to map the routing of channels on the HD-EMG grid to channels in the amplifier.

Figure 1: HD-EMG adapter cable.

Figure 2: HD-EMG adapter cable with one of the Textile HD-EMG grids

The multiconnector of the HD-EMG adapter cable can be inserted in the SAGA amplifier. Please note the keying of the connector in doing so (marked by a red dot). The textile grid can be connected to the cable by opening the box and aligning the openings on the grid with the alignment pins in the box. Placement is done correctly when the top of the box aligns with the textile side of the grid.

The Textile HD-EMG grids can be reused. It is important that the appropriate steps are followed. After using a Textile HD-EMG grid, clean the grid under running water. Ensure that the residual gel is removed completely and dry the grid with a cloth. Importantly, the original adhesive should not be removed as this may damage the printed electronics. A new double-sided adhesive can be placed on the original adhesive, where the electrode openings are to be left free. TMSi offers a variety of adhesives so that the Textile HD-EMG grid can be reused. Please contact your local distributor (https://www.tmsi.com/distributors/) to learn about the available types.

The HD-EMG adapter cable comes with a cradle and a set of straps which can be used to affix the cable to the subject's body. Hence, there is no need to use tape on the subject.
For a detailed overview of how to prepare the Textile HD-EMG grid and HD-EMG adapter cable, please refer to our instructional video.

Please store the Textile HD-EMG grids in an air-tight and dark environment.

Technical specifications cable

Table 1: Overview of the technical specifications of the HD-EMG adapter cable

Technical properties		
Property	**Specification 32-channel**	**Specification 64-channel**
Number of channels	32 + PGND + CREF	64 (+ PGND + CREF)
Length cable	1.5 m	1.5m
Total weight	63 g	110 g
Colour	Black	Black

Contact Information TMSi

When you have a support question regarding (the use of) Textile HD-EMG grids or the HD- EMG adapter cable, please contact your local distributor: https://www.tmsi.com/distributors/.

When you send us an email, please provide as much information as possible, including serial numbers of the used products. You may find the REF code and/or serial number on the product but also always on the package label. The REF code starts with 95 followed by two groups of four digits to identify the product type, it ends with two groups of one- or two digits identifying variant and revision of the product. The serial number always has ten digits. This will help us to support you in the best way possible.

Contact Information
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support@tmsi.com
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Textile HD-EMG grid: 4-8-L

REF 50-0323-0405-0-1

Table 2: Overview of the technical specifications of the 4-8-L Textile grid

Technical properties	
Property	**Value**
Number of channels	32
Electrode material	Ag/AgCl
Inter-Electrode Distance	8.75 mm
Size electrode in contact with skin (diameter)	4 mm

Channel layout

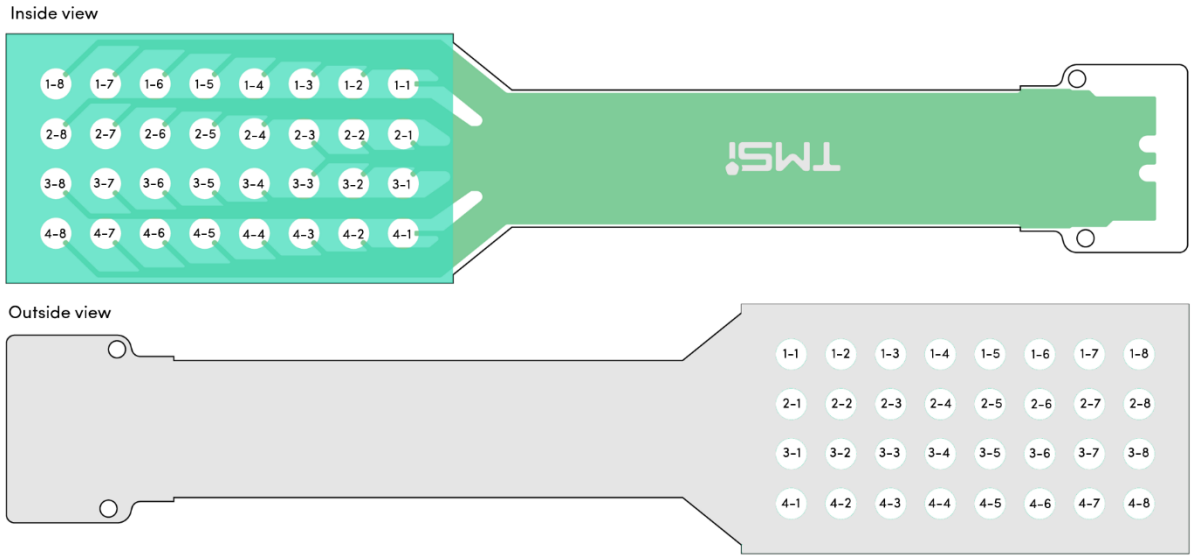

Figure 3: Channel naming logic of the 4-8-L Textile HD-EMG grid. Please note that the – sign is used to distinguish the Row and Column, as denoted in Table 3.

Table 3: Conversion matrix between unipolar channels and position/naming on the Textile HD-EMG grid by Row/Column (R/C).

UNI 01	R1C8	**UNI 09**	R2C8	**UNI 17**	R3C3	**UNI 25**	R4C1
UNI 02	R1C7	**UNI 10**	R2C7	**UNI 18**	R3C2	**UNI 26**	R4C2
UNI 03	R1C6	**UNI 11**	R2C6	**UNI 19**	R3C1	**UNI 27**	R4C3
UNI 04	R1C5	**UNI 12**	R2C5	**UNI 20**	R3C4	**UNI 28**	R4C4
UNI 05	R1C4	**UNI 13**	R2C4	**UNI 21**	R3C5	**UNI 29**	R4C5
UNI 06	R1C3	**UNI 14**	R2C1	**UNI 22**	R3C6	**UNI 30**	R4C6
UNI 07	R1C2	**UNI 15**	R2C2	**UNI 23**	R3C7	**UNI 31**	R4C7
UNI 08	R1C1	**UNI 16**	R2C3	**UNI 24**	R3C8	**UNI 32**	R4C8

Textile HD-EMG grid: 8-8-L

REF 50-0643-0402-0-1

Table 4: Overview of the technical specifications of the 8-8-L Textile grid

Technical properties	
Property	**Value**
Number of channels	64 (cuttable to 2x 32)
Electrode material	Ag/AgCl
Inter-Electrode Distance	8.75 mm
Size electrode in contact with skin (diameter)	4 mm

Channel layout

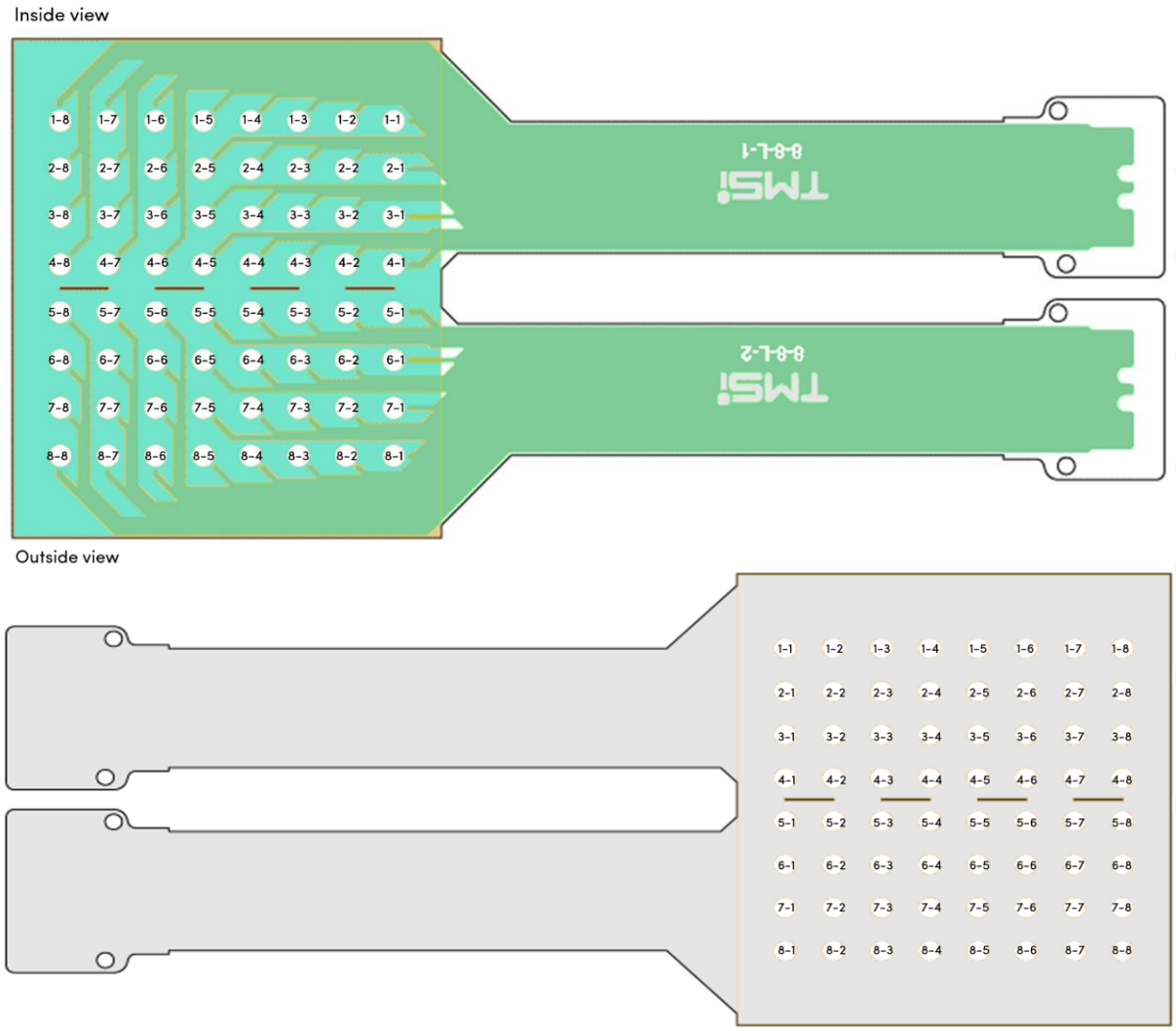

Figure 4: Channel naming logic of the 8-8-L Textile HD-EMG grid. Please note that the – sign is used to distinguish the Row and Column, as denoted in Figure 3Table 5. The dashes in the figure show the cutting line to create two 32-channel grids.

Table 5: Conversion matrix between unipolar channels and position/naming on the 8-8-L Textile HD-EMG grid by Row/Column (R/C). The first 32 channels belong to the 8-8-L-1 grid, the second 32 channels belong to the 8-8-L-2 grid.

UNI 01	R1C8	**UNI 17**	R1C1	**UNI 33**	R5C1	**UNI 49**	R8C2
UNI 02	R2C8	**UNI 18**	R2C5	**UNI 34**	R5C2	**UNI 50**	R8C3
UNI 03	R3C8	**UNI 19**	R2C4	**UNI 35**	R5C3	**UNI 51**	R8C4
UNI 04	R4C8	**UNI 20**	R2C3	**UNI 36**	R5C4	**UNI 52**	R8C5
UNI 05	R1C7	**UNI 21**	R2C2	**UNI 37**	R5C5	**UNI 53**	R5C6
UNI 06	R2C7	**UNI 22**	R2C1	**UNI 38**	R6C1	**UNI 54**	R6C6
UNI 07	R3C7	**UNI 23**	R3C5	**UNI 39**	R6C2	**UNI 55**	R7C6
UNI 08	R4C7	**UNI 24**	R3C4	**UNI 40**	R6C3	**UNI 56**	R8C6
UNI 09	R1C6	**UNI 25**	R3C3	**UNI 41**	R6C4	**UNI 57**	R5C7
UNI 10	R2C6	**UNI 26**	R3C2	**UNI 42**	R6C5	**UNI 58**	R6C7
UNI 11	R3C6	**UNI 27**	R3C1	**UNI 43**	R7C1	**UNI 59**	R7C7
UNI 12	R4C6	**UNI 28**	R4C5	**UNI 44**	R7C2	**UNI 60**	R8C7
UNI 13	R1C5	**UNI 29**	R4C4	**UNI 45**	R7C3	**UNI 61**	R5C8
UNI 14	R1C4	**UNI 30**	R4C3	**UNI 46**	R7C4	**UNI 62**	R6C8
UNI 15	R1C3	**UNI 31**	R4C2	**UNI 47**	R7C5	**UNI 63**	R7C8
UNI 16	R1C2	**UNI 32**	R4C1	**UNI 48**	R8C1	**UNI 64**	R8C8

Textile HD-EMG grid: 8-8-S

REF 50-0643-0401-0-1

Table 6: Overview of the technical specifications of the 8-8-S Textile grid

Technical properties	
Property	**Value**
Number of channels	64 (cuttable to 2x 32)
Electrode material	Ag/AgCl
Inter-Electrode Distance	4 mm
Size electrode in contact with skin (diameter)	2 mm

Channel layout

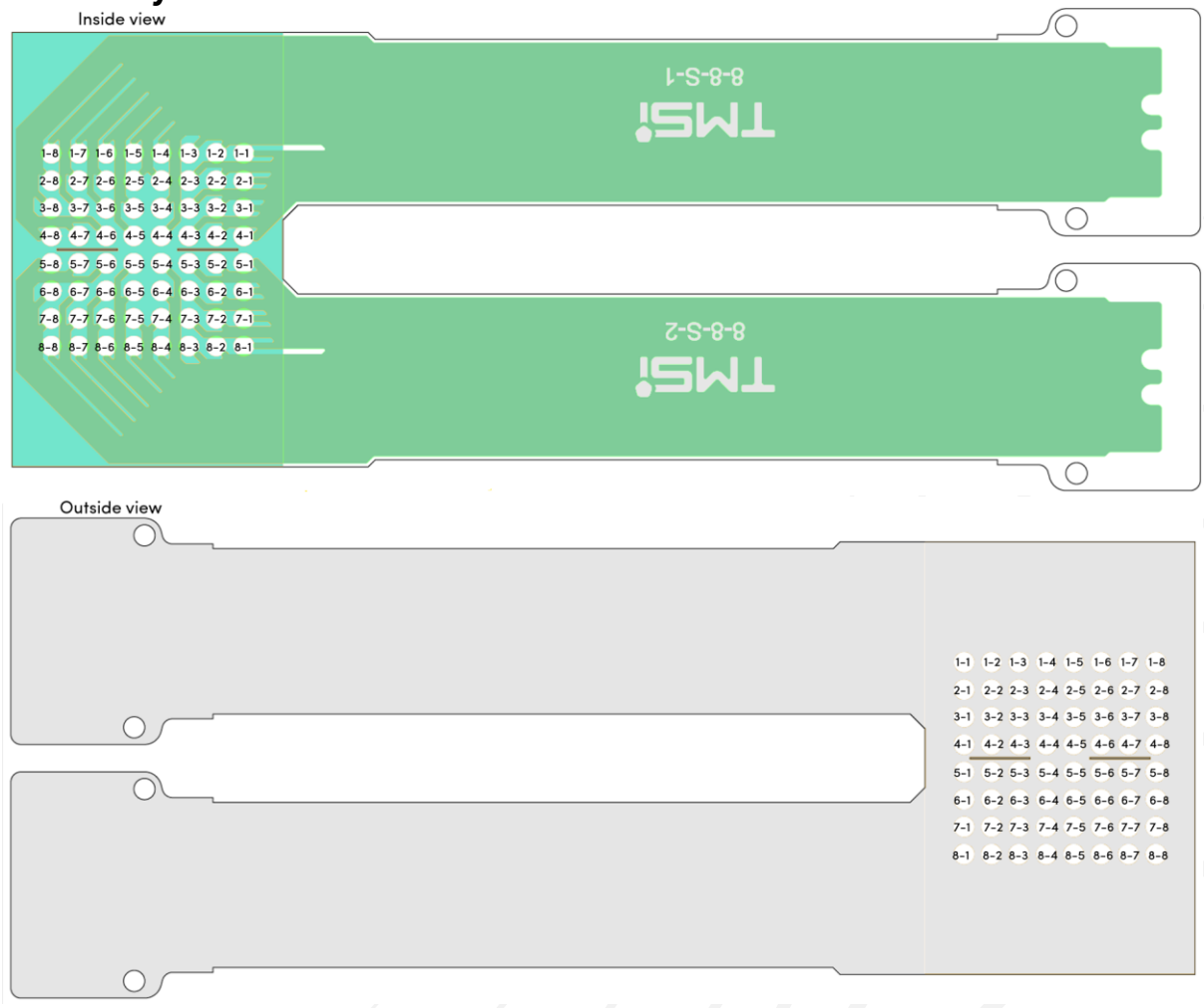

Figure 5: Channel naming logic of the 8-8-S Textile HD-EMG grid. Please note that the – sign is used to distinguish the Row and Column, as denoted in Table 7. The dashes in the figure show the cutting line to create two 32-channel grids.

Table 7: Conversion matrix between unipolar channels and position/naming on the 8-8-S Textile HD-EMG grid by Row/Column (R/C). The first 32 channels belong to the 8-8-S-1 grid, the second 32 channels belong to the 8-8-S-2 grid.

UNI 01	R4C8	**UNI 17**	R2C4	**UNI 33**	R5C1	**UNI 49**	R7C5
UNI 02	R4C7	**UNI 18**	R1C4	**UNI 34**	R5C2	**UNI 50**	R8C5
UNI 03	R4C6	**UNI 19**	R3C4	**UNI 35**	R5C3	**UNI 51**	R6C5
UNI 04	R3C8	**UNI 20**	R4C4	**UNI 36**	R6C1	**UNI 52**	R5C5
UNI 05	R2C8	**UNI 21**	R1C3	**UNI 37**	R6C2	**UNI 53**	R8C6
UNI 06	R1C8	**UNI 22**	R1C2	**UNI 38**	R6C3	**UNI 54**	R7C6
UNI 07	R3C7	**UNI 23**	R1C1	**UNI 39**	R7C1	**UNI 55**	R6C6
UNI 08	R2C7	**UNI 24**	R2C3	**UNI 40**	R7C2	**UNI 56**	R8C7
UNI 09	R1C7	**UNI 25**	R2C2	**UNI 41**	R7C3	**UNI 57**	R7C7
UNI 10	R3C6	**UNI 26**	R2C1	**UNI 42**	R8C1	**UNI 58**	R6C7
UNI 11	R2C6	**UNI 27**	R3C3	**UNI 43**	R8C2	**UNI 59**	R8C8
UNI 12	R1C6	**UNI 28**	R3C2	**UNI 44**	R8C3	**UNI 60**	R7C8
UNI 13	R4C5	**UNI 29**	R3C1	**UNI 45**	R5C4	**UNI 61**	R6C8
UNI 14	R3C5	**UNI 30**	R4C3	**UNI 46**	R6C4	**UNI 62**	R5C6
UNI 15	R1C5	**UNI 31**	R4C2	**UNI 47**	R8C4	**UNI 63**	R5C7
UNI 16	R2C5	**UNI 32**	R4C1	**UNI 48**	R7C4	**UNI 64**	R5C8

Textile HD-EMG grid: 6-11-L

REF 50-0643-0402-1-1

Table 8: Overview of the technical specifications of the 6-11-L Textile grid

Technical properties	
Property	**Value**
Number of channels	64 (cuttable to 2x 32)
Electrode material	Ag/AgCl
Inter-Electrode Distance	8.75 mm
Size electrode in contact with skin (diameter)	4 mm

Channel layout

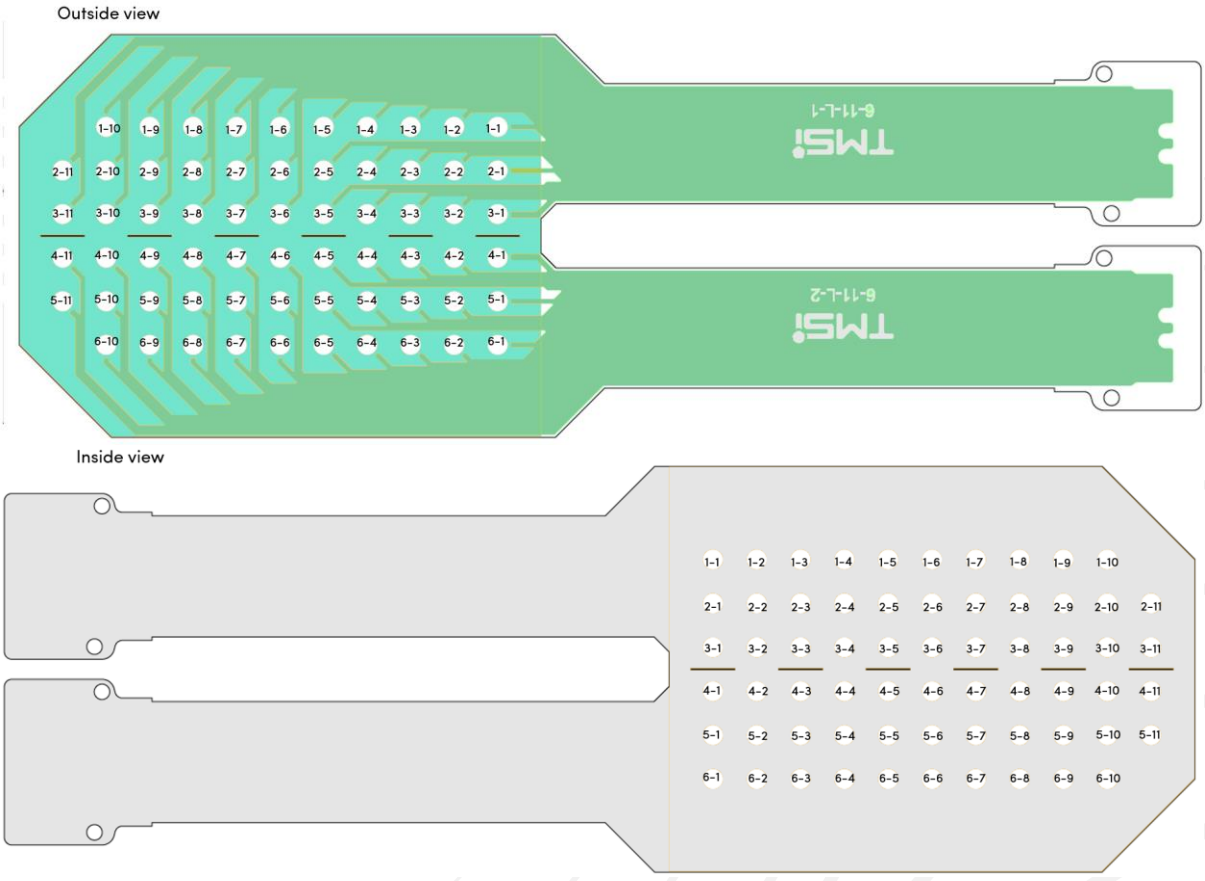

Figure 6: Channel naming logic of the 6-11-L Textile HD-EMG grid. Please note that the – sign is used to distinguish the Row and Column, as denoted in Table 9. The dashes in the figure show the cutting line to create two 32-channel grids.

Table 9: Conversion matrix between unipolar channels and position/naming on the 6-11-L Textile HD-EMG grid by Row/Column (R/C). The first 32 channels belong to the 6-11-L-1 grid, the second 32 channels belong to the 6-11-L-2 grid.

UNI 01	R2C11	**UNI 17**	R3C6	**UNI 33**	R4C1	**UNI 49**	R5C6
UNI 02	R3C11	**UNI 18**	R1C5	**UNI 34**	R4C2	**UNI 50**	R6C6
UNI 03	R1C10	**UNI 19**	R1C4	**UNI 35**	R4C3	**UNI 51**	R4C7
UNI 04	R2C10	**UNI 20**	R1C3	**UNI 36**	R4C4	**UNI 52**	R5C7
UNI 05	R3C10	**UNI 21**	R1C2	**UNI 37**	R4C5	**UNI 53**	R6C7
UNI 06	R1C9	**UNI 22**	R1C1	**UNI 38**	R5C1	**UNI 54**	R4C8
UNI 07	R2C9	**UNI 23**	R2C5	**UNI 39**	R5C2	**UNI 55**	R5C8
UNI 08	R3C9	**UNI 24**	R2C4	**UNI 40**	R5C3	**UNI 56**	R6C8
UNI 09	R1C8	**UNI 25**	R2C3	**UNI 41**	R5C4	**UNI 57**	R4C9
UNI 10	R2C8	**UNI 26**	R2C2	**UNI 42**	R5C5	**UNI 58**	R5C9
UNI 11	R3C8	**UNI 27**	R2C1	**UNI 43**	R6C1	**UNI 59**	R6C9
UNI 12	R1C7	**UNI 28**	R3C5	**UNI 44**	R6C2	**UNI 60**	R4C10
UNI 13	R2C7	**UNI 29**	R3C4	**UNI 45**	R6C3	**UNI 61**	R5C10
UNI 14	R3C7	**UNI 30**	R3C3	**UNI 46**	R6C4	**UNI 62**	R6C10
UNI 15	R1C6	**UNI 31**	R3C2	**UNI 47**	R6C5	**UNI 63**	R4C11
UNI 16	R2C6	**UNI 32**	R3C1	**UNI 48**	R4C6	**UNI 64**	R5C11

Textile HD-EMG grid: 6-11-S

REF 50-0643-0401-1-1

Table 10: Overview of the technical specifications of the 6-11-S Textile grid

Technical properties	
Property	**Value**
Number of channels	64 (cuttable to 2x 32)
Electrode material	Ag/AgCl
Inter-Electrode Distance	4 mm
Size electrode in contact with skin (diameter)	2 mm

Channel layout

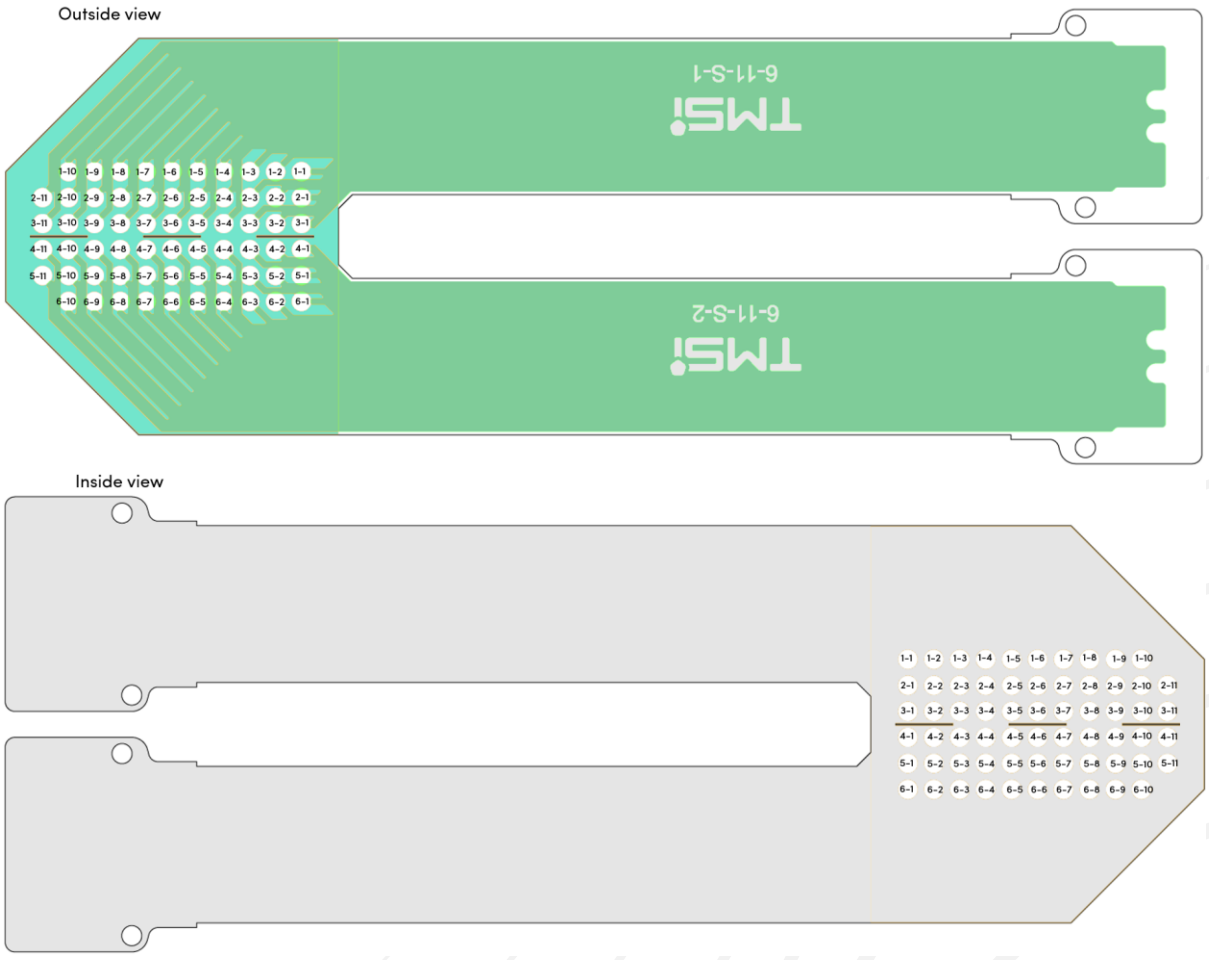

Figure 7: Channel naming logic of the 6-11-S Textile HD-EMG grid. Please note that the – sign is used to distinguish the Row and Column, as denoted in Table 11. The dashes in the figure show the cutting line to create two 32-channel grids.

Table 11: Conversion matrix between unipolar channels and position/naming on the 6-11-S Textile HD-EMG grid by Row/Column (R/C). The first 32 channels belong to the 6-11-S-1 grid, the second 32 channels belong to the 6-11-S-2 grid.

UNI 01	R2C11	**UNI 17**	R3C6	**UNI 33**	R4C1	**UNI 49**	R5C6
UNI 02	R3C11	**UNI 18**	R1C5	**UNI 34**	R4C2	**UNI 50**	R6C6
UNI 03	R1C10	**UNI 19**	R2C5	**UNI 35**	R4C3	**UNI 51**	R4C7
UNI 04	R2C10	**UNI 20**	R3C5	**UNI 36**	R5C1	**UNI 52**	R5C7
UNI 05	R3C10	**UNI 21**	R1C4	**UNI 37**	R5C2	**UNI 53**	R6C7
UNI 06	R1C9	**UNI 22**	R2C4	**UNI 38**	R5C3	**UNI 54**	R4C8
UNI 07	R2C9	**UNI 23**	R3C4	**UNI 39**	R6C1	**UNI 55**	R5C8
UNI 08	R3C9	**UNI 24**	R1C3	**UNI 40**	R6C2	**UNI 56**	R6C8
UNI 09	R1C8	**UNI 25**	R1C2	**UNI 41**	R6C3	**UNI 57**	R4C9
UNI 10	R2C8	**UNI 26**	R1C1	**UNI 42**	R4C4	**UNI 58**	R5C9
UNI 11	R3C8	**UNI 27**	R2C3	**UNI 43**	R5C4	**UNI 59**	R6C9
UNI 12	R1C7	**UNI 28**	R2C2	**UNI 44**	R6C4	**UNI 60**	R4C10
UNI 13	R2C7	**UNI 29**	R2C1	**UNI 45**	R4C5	**UNI 61**	R5C10
UNI 14	R3C7	**UNI 30**	R3C3	**UNI 46**	R5C5	**UNI 62**	R6C10
UNI 15	R1C6	**UNI 31**	R3C2	**UNI 47**	R6C5	**UNI 63**	R4C11
UNI 16	R2C6	**UNI 32**	R3C1	**UNI 48**	R4C6	**UNI 64**	R5C11