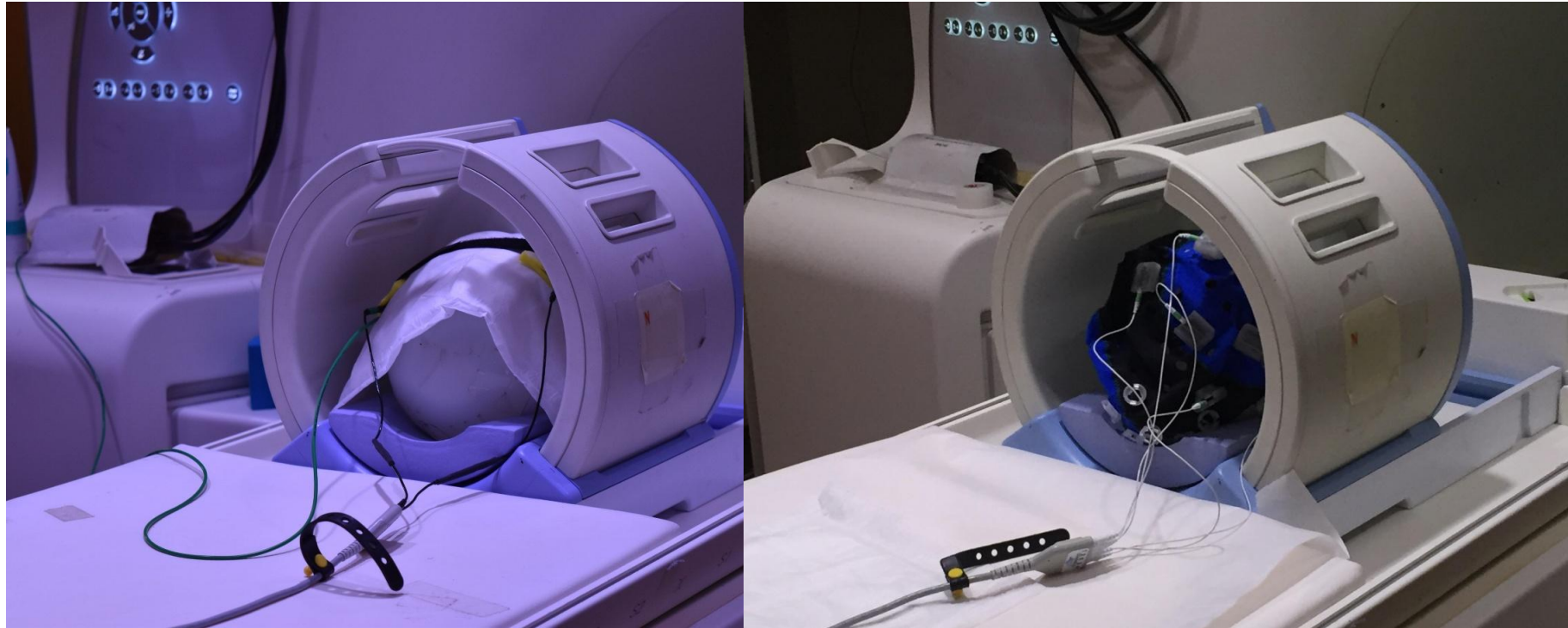


SOTERIX MEDICAL MRI SOLUTION FOR tES and HD-tES



Compatible with standard EPI sequences.

Suitable for upto 3T systems.

Compatible with all Soterix Medical 1x1 and High-Definition (HD) stimulation systems.

USER GUIDE

SET-UP (SINGLE-CHANNEL)

MRI CHAMBER

MRI CONTROL ROOM



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PATCH PANEL

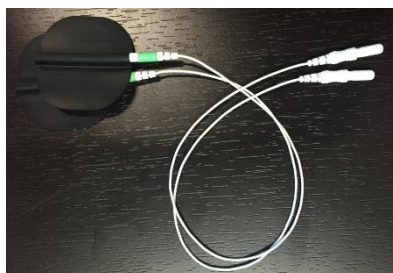
4

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Carbon Composition Cables

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8M MRI Cable

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MRI Filter

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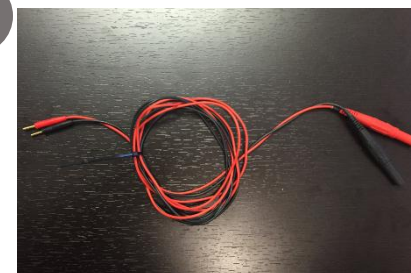
2M MRI Cable

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1x1 Connecting Cables

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SET-UP (MULTI-CHANNEL)

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Carbon Composition Cables

8M MRI Cable

MRI Filter

2M MRI Cable

SET-UP (MULTI-CHANNEL)

MRI CHAMBER

MRI CONTROL ROOM



1

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PATCH PANEL



1) If no patch panel connector exists in the patch panel, then it is recommended that the MRIRFIF be installed directly on the patch panel. The MRIRFIF is symmetrical so orientation direction is not important, however it is very important that it be installed on the CONTROL room side of the patch panel. This is critical because the MRIRFIF incorporates ferromagnetic elements. The MRIRFIF performs an internal pin swap of pins 1 through 5; pins 6 through 9 are unused by MRIRFIF (see Table below).

The MRIRFIF mounts to the patch panel via the included L-bracket support. Prior to mounting the support bracket and MRIRFIF, a cutout in the panel is required to expose one female connector of the MRIRFIF to the MRI Chamber Room. The panel cutout should only be large enough to expose the female connector in order to maintain a uniform EMI seal between the MRIRFIF EMI gasket and the patch panel. Two mounting holes to bolt the L-bracket to the patch panel are also required.

See Figures 1, 3, 4 (Installation method A) for details

2) If a patch panel connector exists, then the MRIRFIF should be connected to the CONTROL room side of the patch panel connector. In this case, the chamber room side of the patch panel connector must be a 9 pin female DSUB and the control room side of the patch panel connector must be a 9 pin male DSUB. In this situation, verify that pins 1 through 5 are mapped straight through on the M/F patch panel connector. The MRIRFIF plugs directly into the existing patch panel connector (Male 9 pin DSUB) and is supported via the included L-bracket. Two mounting holes are also required in the patch panel to bolt the L-bracket to the panel. Also, its important to perform a dielectric test to ensure that sufficient electrical isolation (typically 1500 V DC or greater) is present between the existing patch connector pins and the mains ground as established on the patch panel itself.

See Figures 2, 3, 4 (Installation method B) for details

	DSUB 9 female				
Control Room side	1	2	3	4	5
Chamber Room side	5	4	3	2	1

Table: MRIRFIF 's symmetrical construction results in pin swap for pins 1,2,3,4,5

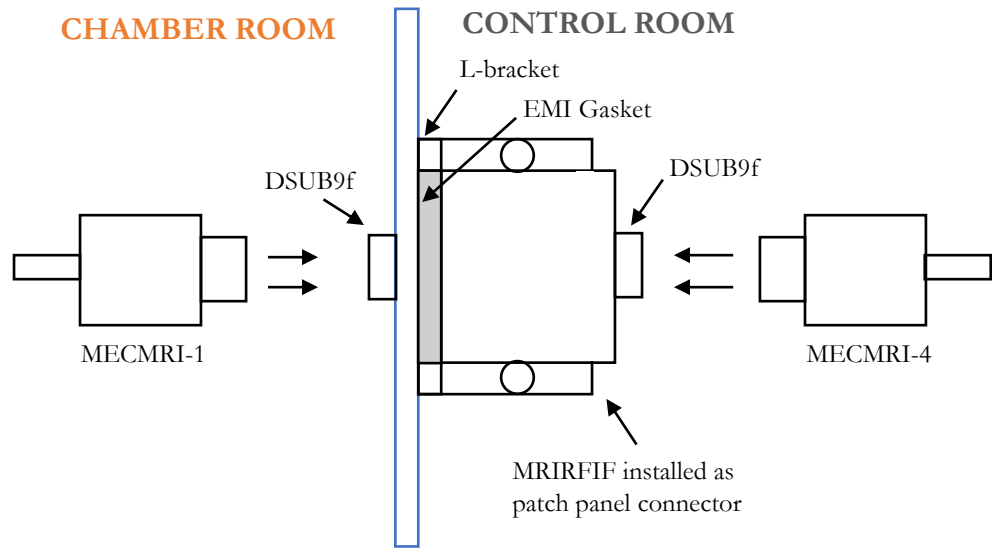


Figure 1: Cabling sequence for patch panels with no existing connectors.

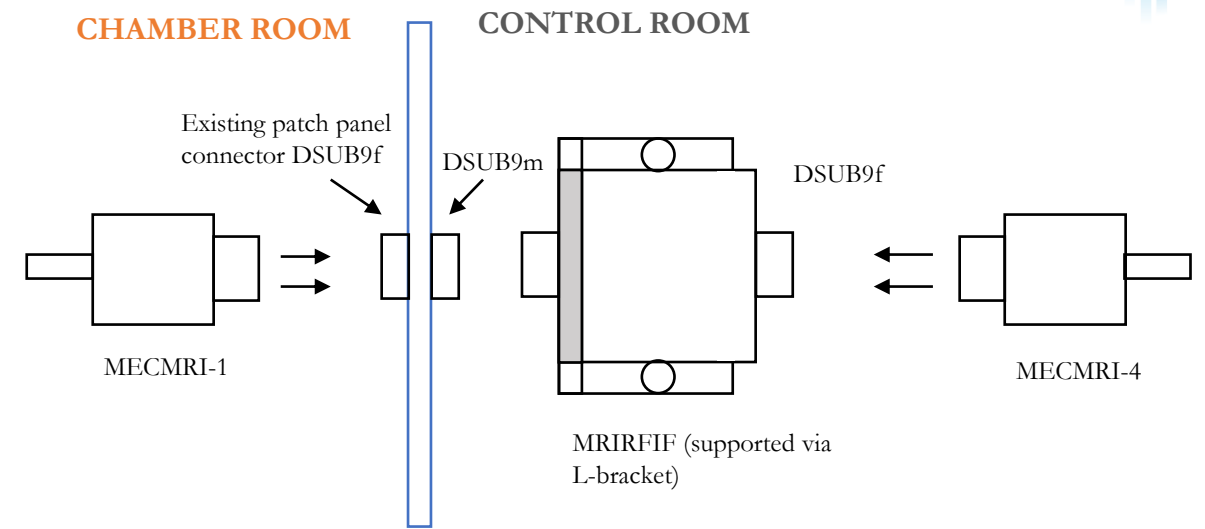


Figure 2: Cabling sequence using existing patch panel connector.

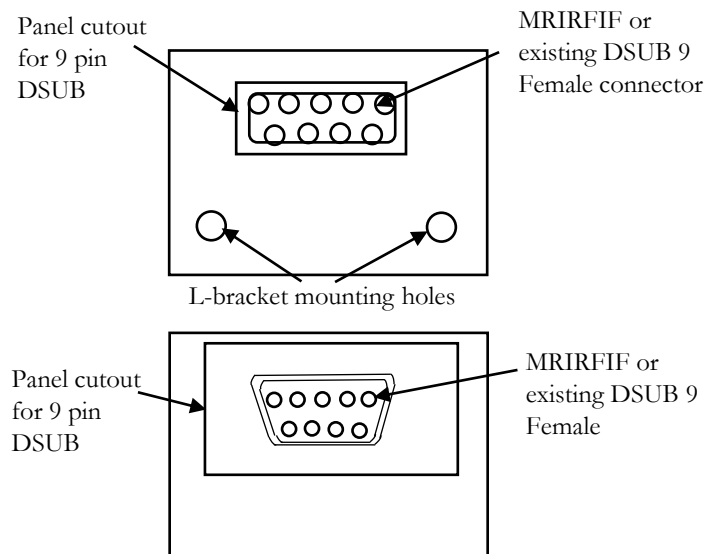


Figure 3: Control and Chamber room view of cutout to support MRIRFIF mounting.

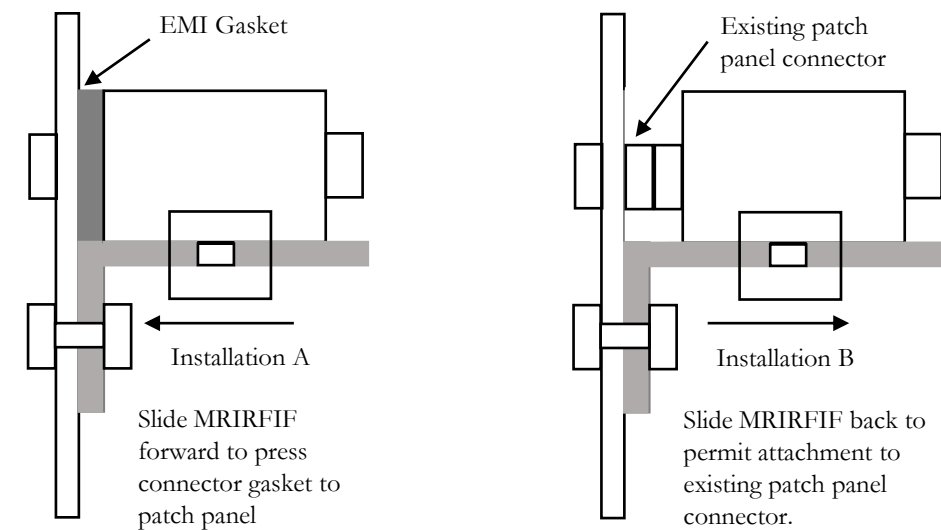


Figure 4: Side view of MRIRFIF installation methods to patch panel.



Implement patch panel filtering (between the Control Room and Chamber Room) as per instructions provided. Implementation should be performed by MRI personnel specialized in shielding systems.



Correct installation of MRIRFIF is required to maintain MRI imaging performance and to create a safe operating environment. It is important to install MRIRFIF on the CONTROL room side of the patch panel. This is critical because the MRIRFIF incorporates ferromagnetic elements.



It is important to note that the MRI Chamber Room is robustly EMI shielded. This shielding is very important to maintain signal integrity in the NMR image data. This EMI shielding will be compromised if un-filtered electrical cabling is routed between the MRI Control Room and the MRI Chamber Room. Accordingly, considerable attention should be directed to patch panel connector configurations and associated signal routing and filtering.



Phantom testing is recommended before performing any electrical stimulation protocols in fMRI or MRI.



The cables (lead wires) should not be coiled or twisted and should run straight.