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CONTROLLABLE SMART INTERFACE DEVICE

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The invention pertains to an interface device used to combine MEDRAD's endorectal coil with the 8 or 12 channel body array for 1.5T GE HDMR platform or with the 8 channel torso array for 3T GE HDMR platform. The interface device, in addition to interfacing the endorectal coil with the scanner, interacts functionally with the scanner.

SPECIFICATION

After providing the coil IDs to the scanner (based upon the choice of scan mode), the interface device functions as a control unit. For example, based on input from the interface device, the control signals from the scanner are used to provide the medical technician with the following operational choices:

a) which channels to be switched on or off,
b) whether to combine 2 channels from the body array or not,
c) whether to mask the presence of one of the connected coils, or
d) to provide an output of 1,8,9, or 13 channels from the interface device to the scanner.

The interface device provides the user with a choice of possible scans when an endorectal coil is connected to either the scanner or the body/torso array. The interface device provides two different coil IDs using a logic circuitry based on the coils connected to it.

Moreover, enabling two coils of independent functionality having a greater number of output channels than the number of input channels or receivers on the scanner, using a controllable interface device, lends itself to an opportunity where one or more such interface devices could enable the scanner to function with many coils connected to the scanner to cover more patient scans in various combinations.

In general, the number of channels in a coil is limited by the number of receivers on the scanner. Though multiplexers are in general used to provide different combinations of output channels to interface with the receivers of the scanner, the problem of integrating two or more different coils and providing either independent coil signals or a combination of coil signals to a scanner is a much needed advantage for overcoming the scanner limitations caused by limited input channels.