ABSTRACT

An artificial magnetic conductor (AMC) antenna apparatus includes a ground plane and a flexible antenna element layer above the ground plane. The ground plane includes a conductive base surface, a plurality of memory metal wires, and a frequency selective surface (FSS) layer above the base surface, where the FSS layer includes a plurality of conductive patches separated from one another. Each of the memory metal wires electrically connects one of the conductive patches to the base surface. Each of the memory metal wires is rigid in a memory-shaped state, causing the FSS layer to be fixedly spaced from the base surface during operation of the AMC antenna apparatus. The memory metal wires are each flexible in a non-memory-shaped state, enabling the FSS layer to be collapsed towards the base surface when the antenna apparatus is stowed.

Fig. 1