TV Remote, Part III

Using the Horizontal plane as a sketching surface, create a singular button (as an ellipse) and produce a two directional pattern as shown below:

These buttons will be “trimmed” with a surface that has curvature in two directions, from side to side and front to back.

Using endpoints of existing Style curves, create a new curve that spans the entire surface. Three points define this curve and they are locked on to existing endpoints.

A Style surface is created using these curves.

Create a series of COS which encompass each key
Individual Style surfaces are created using each one of these curve sets.

To trim the buttons to this surface:
   1) Select surface (pick from list)

   2) Select Edit - Offset
   3) From the list of offset types, select Replace
   4) Select replacement quilt (rectangular style surface)

After all offset features have been created. Note the model tree and the part.
Doing a draft check relative to the center line datum, you can see that the top of the buttons have some curvature.

Rounds and some color applied to the buttons to make them appear a little cleaner.

Center button creation.
A datum must be created (shown in yellow) to use a projection plane that is roughly parallel to the surface.

An simple extrusion is used to define the base protrusion.

Four Style curves (planer, offset below the newly created datum) were generated. Coordinates of end points were keyed in to maintain symmetry about the center datum plane.

A planer curve was produced on the center
datum to define the curvature of the large button. Notice how the curve is not symmetrically generated about the solid protrusion due to the fact that the four planer curves were not perfectly centered front to back. The part is shown “upside down”.

The original curves need adjusted as follows

Another cross curve needs to be produced. This curve must lie on the center of the button, therefore a datum must be established through the center axis of the button as shown.
If this datum is dragged above the style feature, we can redefine the Style feature that is being used to produce this contour, thus reducing the number of features and also allowing us easier control and redefinition if that is necessary.

A Planer curve is snapped to the other three curves.

The following surface is now produced.

A surface replacement and a Analysis – Geometry - Shaded Curvature plot (increase the quality) indicates that we truly have a nicely domed button.
A round on the outer edge, some color and you have the following:

A banana shaped button (Extrude feature) is now added in the raised region. Note that all edges in the sketch must be tangent in order to be able to place rounds on the edges.

It is permissible to leave the top of these buttons flat.

Mirror the extrude, round the edges and add some color.
Final result with model tree

This completes the required modeling of this part. If you want to add additional feature, please feel free to do so.