WHAT IS CLAIMED IS:

[CLAIM 1]

A touch display panel, comprising:

an array substrate comprising a substrate and a plurality of sub-pixel units on the substrate;

a display medium layer on the array substrate;

a color filter substrate comprising a color filter layer and an opposite substrate, wherein the color filter layer is between the display medium layer and the opposite substrate, the color filter layer comprises a plurality of color resists arranged in an array along a first direction and a second direction, the first direction perpendicular to the second direction, wherein each of the color resists corresponds to a particular one of the sub-pixel units and comprises a first region, a second region and a third region arranged along the first direction and overlapping the particular one of the sub-pixel unit; and

a touch electrode layer on the color filter substrate, wherein the touch electrode layer has a plurality of slits, the slits have normal projection areas A1, A2 and A3 over the first region, the second region and the third region, respectively, the first region, the second region and the third region have areas F1, F2 and F3, respectively, and satisfy one of the following relations: $|(A1/F1) - [(A2+A3) / (F2+F3)]| < 10\%$, $|(A2/F2) - [(A1+A3) / (F1+F3)]| < 10\%$ or $|(A3/F3) - [(A1+A2) / (F1+F2)]| < 10\%$, wherein each of the color resists completely overlap each of the plurality of slits of the particular one of the sub-pixel unit, and each of the plurality of slits extend from the second region to either the first region or the third region.

[CLAIM 2]

The touch display panel of claim 1, wherein each of the color resists overlaps at least one of the slits.

[CLAIM 3]

The touch display panel of claim 1, wherein the slits comprises:

a first group of slits extending along a third direction, wherein the third direction crosses the first direction and the second direction, the first group of slits comprises a first slit, two of the first group of slits closest to the first slit have a first shortest distance equal to x1 and a second shortest distance equal to x2 respectively from the first slit, the first slit has a length equal to b1 along the third direction, a sum of x1, x2 and b1 is a1 and satisfies the following relation: b1/a1>65%.

[CLAIM 4]

The touch display panel of claim 3, wherein the slits further comprises:

a second group of slits extending along a fourth direction, wherein the fourth direction crosses the first direction, the second direction and the third direction.

[CLAIM 5]

The touch display panel of claim 1, wherein each of the sub-pixel units of the array substrate comprises:

a plurality of reflective pieces disposed on the substrate and separated with each other, wherein each of the reflective pieces corresponds to the first region, the second region and the third region of each of the color resists one by one.

[CLAIM 6]

The touch display panel of claim 5, wherein the reflective pieces include metal.

[CLAIM 7]

The touch display panel of claim 5, wherein each of the sub-pixel units further comprises:

a plurality of pixel memory circuits electrically connected to the reflective pieces, wherein the reflective pieces comprise a first reflective piece, a second reflective piece and a third reflective piece, the first reflective piece, the second reflective piece and the third reflective piece correspond to the first region, the

second region and the third region of each of the color resists, respectively, the pixel memory circuits comprise a first circuit electrically connected to one of the first reflective piece, the second reflective piece and the third reflective piece and not electrically connected to another one thereof.

[CLAIM 8]

The touch display panel of claim 7, wherein the first circuit is electrically connected to the first reflective piece, and the first circuit is not electrically connected to the second reflective piece and the third reflective piece.

[CLAIM 9]

The touch display panel of claim 7, wherein the first circuit is electrically connected to the second reflective piece, and the first circuit is not electrically connected to the first reflective piece and the third reflective piece.

[CLAIM 10]

The touch display panel of claim 7, wherein the first circuit is electrically connected to the third reflective piece, and the first circuit is not electrically connected to the first reflective piece and the second reflective piece.