If an electromagnetic wave passes through an electric and magnetic field, is any distortion produced in its path?

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If the fields (both static and of the wave) are not extremely strong, if the superposition occurs in vacuum, and if the wave does not exchange energy with the means of applying the fields (e. g. photoelectric effect), there will be no distortion.

There is the Faraday effect and the Kerr and Pockels effects, however:  If the (quasi-) static magnetic field is aligned parallel or anti-parallel to the propagation of the wave in a transparent medium, the plane of polarization will be rotated. If an electric field is applied perpendicular to the direction of propagation of the wave in a transparent medium, the refractive index of the medium is effectively changed.

These effects per se do not cause distortion in the sense that harmonics are produced.  But combined with suitable filters, e. g. polarizers, they can be used to modulate the wave; in this process the spectrum of the wave is broadened.