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(21) International Application Number: PCT/US99/06152 (22) International Filing Date: 16 March 1999 (16.03.99) (30) Priority Data: 09/042,836 17 March 1998 (17.03.98) US (71) Applicant (for all designated States except US): MCNC [US/US]; 3021 Cornwallis Road, P.O. Box 12889, Research Triangle Park, NC 27709-2889 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): ROBERSON, Mark, W. [US/US]; 110 Lamdash Lane, Cary, NC 27511 (US). RINNE, Glenn, A. [US/US]; 206 Excalibur Court, Cary, NC 27513 (US). DEANE, Philip, A. [US/US]; 5500 Fortune Ridge Drive #75C, Durham, NC 27713 (US). MARKUS, Karen, W. [US/US]; 7909 Oak Orchard Court, Raleigh, NC 27613 (US). (74) Agents: McCOY, Michael, D. et al.; Alston & Bird LLP, P.O. Drawer 34009, Charlotte, NC 28234-4009 (US).		(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>

(54) Title: MODULATABLE REFLECTORS AND METHODS FOR USING SAME**(57) Abstract**

A reflector having a mechanically deformable portion (12) of at least one reflective surface is disclosed. By deforming the portion of the reflective surface, discontinuity is introduced in that portion of the reflective surface. The discontinuity in the reflective surface scatters incident radiation signals (20) so as to cause attenuation in the reflected signal (22). By selectively deforming the portion of the reflective surface, the reflected signal can be modulated to encode data thereon. The mechanically deformable portion of the reflective surface preferably comprises plates integrally formed therein. In one embodiment, the reflector takes the form of a corner-cube reflector (10). The use of a reflector with a three dimensional pattern (122) on the reflective surface for encoding data on a reflected signal, which functions much like a bar code pattern, is also disclosed. One application of the reflector is in the identification of friend or foes (IFF).

