Analisis simulasi daya pancar untuk perluasan wilayah siaran TV kanal 42 dan 44 dari Kota Bandung ke Garut dan Sukabumi = Simulation and analysis of transmit power for broadcasting tv channel 42 and 44 case study Bandung to Garut and Sukabumi

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Abstrak

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Perkembangan bisnis dan martketing yang sangat cepat mendorong naiknya kebutuhan akan media telekomunikasi yang reliable, menarik, dan dinamis. Metode dalam penyebaran informasi yang populer digunakan saat ini adalah penyiaran. Dimana penggunaan spektrum frekuensi radio untuk keperluan penyiaran mengacu pada definisi layanan penyiaran pada peraturan radio ITU. Layanan penyiaran adalah suatu servis komunikasi radio dimana transmisinya ditujukan untuk penerimaan langsung oleh masyarakat umum. Penyiaran televisi lebih sering digunakan sebagai sarana penyebaran informasi dibandingkan dengan radio, karena dapat menyampaikan informasi secara jelas dengan suara dan gambar. Semakin luas daerah jangkauan siaran suatu stasiun TV, maka akan semakin banyak manfaat yang dapat dirasakan karena informasi dapat diterima dengan baik oleh masyarakat.
Terdapat dua stasiun TV swasta di Bandung yang akan melakukan perluasan wilayah ke kota yang berdekatan, yaitu di kota Garut dan Sukabumi dengan menambahkan repeater baru serta menaikkan daya pancarnya. Kedua stasiun TV swasta di Bandung tersebut menempati kanal 42 dan 44. Kedua stasiun TV tersebut merupakan pemancar TV analog dan akan menggunakan kanal yang sama pada kota Garut dan Sukabumi. Kedua stasiun TV analog ini memiliki kanal bersebelahan dengan stasiun TV analog dan stasiun TV digital. Penambahan repeater baru dan menaikkan daya pancarnya dapat memungkinkan terjadinya interferensi kanal bersebelahan. Untuk mengatasi hal tersebut, maka dibuat sebuah aturan bahwa kuat medan penerimaan televisi siaran UHF pada lokasi titik pengujian atau pengukuran setiap wilayah layanan dibatasi paling besar 70 dBμV/m untuk band V.
Skripsi ini bertujuan untuk menganalisis simulasi daya pancar untuk perluasan wilayah siaran TVdari Bandung ke Garut dan Sukabumi, dengan menentukan pola radiasi dan menaikan daya pancar repeater baru dengan batasan rasio proteksi agar daerah jangkauan dan populasi di kota Garut dan Sukabumi terlayani. Hasil dari simulasi diperoleh daya pancar pada kanal 42 dan 44 di kota Garut sebesar 42 dBW dengan antena 4-1 dan daya pancar pada kanal 42 dan 44 di kota Sukabumi sebesar 38,3 dBW dengan antena 730 372. Dengan penggunaan daya pada masing-masing pemancar tersebut telah memenuhi wilayah cakupan yang terlayani pada kota Garut dan Sukabumi dan pemancar yang digunakan tidak menginterferensi kanal yang bersebelahan. Namun terdapat beberapa wilayah yang tidak tercakup sinyal pancar karena kontur wilayah yang

bergunung-gunung.
Kata kunci : interferensi
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attractive, and dynamic telecommunication media. Broadcasting is one of the popular
media which ever used in centuries. In the practical utilities, the broadcasting services use
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coverage area of the broadcasting services the more advantages can be obtained because
the informations can be delivered properly to the user.
In this final project, there are two private television provider where both are
located in Bandung. Theirs location are alongside cities which are Garut and Sukabumi.
In order to broaden their coverage area, they increased the number of repeater and the
level of power used by the transmitter respectively. Unfortunately, this method leads to an
adjacent channel interference. In order to withstand this effect, policies are made to limit
the usage of the bandwidth. For every service area the allocation is set to be at a
maximum of 70 dBμV/m for V band.
This final project is aimed to analyze the power used by the transmission to
broaden the coverage area of the television services from Bandung to Garut and
Sukabumi. The radiation patterns enhancement and the increase of transmitted power by
the new repeaters are used. As a result, it is proved that for Garut and Sukabumi the 42
dBW and 38,3 dBW are appropriate with the use of the 4-1 and 730-372 antennas
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