

gatormation / mususe / modulating / necesberd signi)

for CFC- Lfs-for 109
antenna is Shortened, Signal Tis reduced
adjusment of bandwidth,

maltiplexing

AM> Y= Aci(1+ precos(anfint)), acors (24pifest) B= Am / Ve > Modulation Index/ Modulation Deptu B=1 > 100% modulation/modulated wave B21 => under modulation/ nodulated | 04 B41 |

B>1 > Over modulation/modulated | 04 B41 |

Lp gra arrigto

Pagnol distension

Pagnol distension 9m aginary
Line

Ym

No

B=

Amax-Amax

Amox + Amin

Forelope

Line

Lin te7fm => currier frequency is noth frewery. (2) Demobiliation by convening of modulation Signal S. (3) - then the low pure fitter was than the previous is BAM = 2-B matil 1 - 111 (2) Norder (2) Colots) (2) to a south of the first of the start of the first forms for the start of the south of the start of the south of the so

Am Demoderation: LD Extracted from receive signal.

Scircuit / software defined radio. used for -> Recover the information content. from used: Broad cest receivers, Professional radio communication equipment, walkie talkies, Envelope => The envelope of a signal is executed by the low frequeny Signal. It modulating Signal = Soinusoidal then envelope of the modulated RF signal = sinusoida) Ly The signal rearried by amplitude variation on the currier. Hat Envelope Defector: 23 used to detect high level implifude modulation ovare. Ly Demodulation by savaright of modulater signal 5(t) then Fatte low parts filter used then high frequency is nemoved

M(t) = 4 (1+ Bm(t)) 7 Um democ (7)7()55)

>> fs = sampling = 2 fm > 2. # 27. 2 (Mfm,+ fm) L> am demod (4, fe, fs)

Frequency increased when Amplitude of mensorse signal money Instantaneous frequency, $f_i = f_e + k_f m(t)$ Lis proportionly constant

S(t) = Ae cas (21) fet + Bam (21) Lip cas en 211 3(t) = A e Sm(nnfet + B Sm (2nfmt) - smor sin B = fe -> frequery designant (1) ball by = for for ky Am $w_i = \frac{d\theta_i(t)}{dt}$ Oit = 201 Stick -> integnation zogé यमार्ग कार्य Amplitude 213/17 Frequency 2173 (1) peack point of 31/2/12 17 corrier & Frequency (512) (269) Frequency BFM=2(1+B)B Signal -> [VCO] - conspiel

F. Demodulahm: > FM defection. used in older circuit and technology. Ly is a key process in the peception of F. modulated Signet Ly . signal hers, been neceived, filtered, Amplified. 4) Found in any receiver (broadcast receiver walkiestalkies. 1> demod. (4, fe, fs, (fm)); radiole grande = it = or 4 FM cor diff mo. son 27 = 67 5000 $(0) = \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2}$ 6:1- 11/29+ -> 14/02/41 = 1:9 Amplifieds at Elicaberry atte dates and Trench print a scale or in which legies held handaly to be work of a Carola ma Sixture - Loov + Conja

7(t) = Ac * 600 (2nfet + 5m. *fs) Sm = Am + en (24 pix fm x 2) Amplitude 237 T Ancountry snow assent und Siznal Teof + output

Les opposite by of FM. 3911 Bpm = 2 (1+B) B 2 F mt cros sint ? 271×71×71×10-6 = & Putro 93 LASS LIER by The output explitude increes with frequent L. Pice compliancis eineunt increases the encough contract of the highest frequents signed that will the Though that presume meist compared Hillston & and filligibility and fideling LA The pre-emphasis elected also has upper bruck. trequery where signed flighters and .

Pre-Emphasis: (2+.m2+1)+1111 200+1 A = (1) Pre-emphasis refer more higher frequency (2 to 15) and of of modulating voltage to Amplitude to posting and sefer and Ly is done at the trumsmitter. if time constructions the Store signal to Noise ratio. 4) High parts filter. = 1 = 1 = 211 x 75 x 16-6 = 2122 = 2122 = 2122 to The output amplitude increws with frequency. Lo Pre-emphasis einewit increases the energy emterally the higher frequency signer so that they will be stronger than frequent noise components. Is increase intelligibility and fidelity Lo The pre-emphasis circut also his upper break frequency where signal flatters out. fu = 29 + P2/21

De-emphasis; used at the neceiver. La Bimple Low-part filter 4 providing normal frequency response

Honer=> combined effect is pre and de-emplusers is to increases the high-frequency component during fromsmission so that truy will be stronger and not musked by ners

pre-emplewes

5NP > morent

Ly moderler Index in ever

for ineruse aro, Am men 13 = Jm fi= k Am